



NELSON

Textiles  
TECHNOLOGY

Christine Castle Lynda Peters



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**Christine Castle**

**Lynda Peters**

Editor: Margaret Maher

Project editor: Katharine Day

Publishing editor: Debbi Barnes

Senior designer: Vonda Pestana

Cover design: Vonda Pestana

Text design: Rose Keevins, Vonda Pestana

Permissions research: Lisa Piemonte

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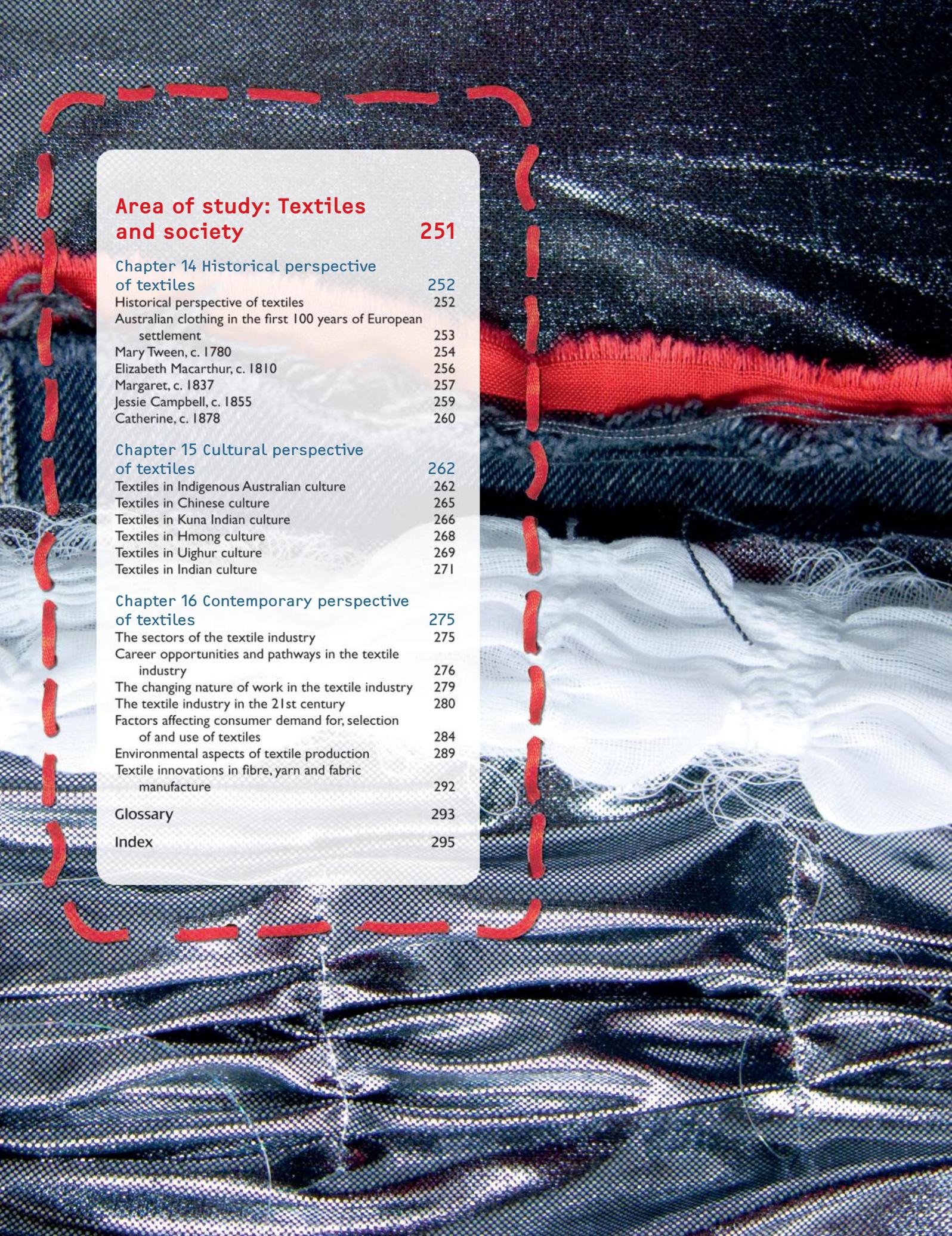
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# Introduction

Textiles technology is multi-faceted, dynamic and ever-changing. Textiles can inspire artistic passion as well as provide for our basic needs. They are an essential part of everyday life, providing connection to our past, present and future. Developments in textile technology are occurring rapidly, with design innovations that can change our textile knowledge in an instant. As textile fibres, yarns and fabrics are developed, the industry takes advantage of the new opportunities they present, and consumers find themselves interacting with these changes.

*Nelson Textiles Technology 9, 10* is a comprehensive reference book which reflects the New South Wales Board of Studies syllabus for students in Stage 5. The book aims to connect classrooms across the state by providing new and vibrant case studies, integrated ICTs and innovative project ideas. It acknowledges the visual design element teaching requires by providing stimulating contemporary pictures that students can connect with.

## Area of study: Project work

The primary focus of this section is to provide clear instructions for students while introducing them to inspiring ideas for project-based work in textiles. The work aligns itself with the 'design, produce and evaluate' process and encourages students to focus on skills and develop their own project requirements in consultation or negotiation with the teacher.

The possibilities of textile project work are examined in relation to the five focus areas:

- apparel
- furnishings
- costume
- textile arts
- non-apparel.

## Area of study: Design

The specialised case studies in this section of the textbook highlight the practice of textile designers in each of the five focus areas. The case studies offer a comprehensive and substantive resource for students, providing insights into the specialised skills of five Australian designers: Peter Alexander, Catherine Martin, the Freckles development team, Rowena Charlton and Kim Michaelides.

The chapter on methods of applying colouration and decoration to textile-based project work provides a comprehensive and innovative look at the vast array of possibilities in textile design. It helps students develop skills in the critical selection and creative use of textiles for a broad range of quality applications.

## Area of study: Properties and performance of textiles

This area of study develops knowledge and understanding of the properties and performance of textiles. One of the main aims of this area is to help students make informed choices when selecting materials for their project work. To assist in this, the book provides a thorough understanding of how fibres, yarns and fabrics contribute to the end product.

## Area of study: Textiles and society

This section explores textile design and the significant role of textiles in society. It provides insight into the influence of traditional and technological processes on contemporary textile design. It introduces future directions and innovations in textile production and discusses the environmental considerations. Successful textile designers bring together a combination of historical, cultural and contemporary perspectives to make their designs relevant expressions of the times. Understanding these perspectives will inform students for their own design practice in textile project work.

## Course objectives

Students will develop:

- knowledge and understanding of the properties and performance of textiles
- knowledge and understanding of and skills in design for a range of textile applications
- knowledge, understanding and appreciation of the significant role of textiles for the individual consumer and for society
- skills in the creative documentation, communication and presentation of design ideas
- skills in the selection and proficient and creative use of textile materials, equipment and techniques to produce quality textile items
- knowledge and skills to evaluate quality in the design and construction of textile items.



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212 Dobri Dobrinov (manufactured fibres), 213 (sheep shearing), 214 David Falk (cotton singlet), 214 (silk dress), 214 Rock Rhav (rope), 214 Andrei Malov (parachute), 214 (jumper), 215 Joanne Green (school uniform), 215 Lisa Eastman (dance costume), 215 Olga Shelego (bra), 215 Martin Carlsson (jeans), 215 (t-shirt, school jumper), 216 Russell Burns (cotton boll), 216 Fielding Piepereit (sheets), 218 (wool fibre), 218 Norman Pogson (hat and scarf), 219 Katrina Brown, 220 Jaime Roset (silkworms), 220 Snezana Negovanovic (tree), 220 D. O'Connell (cocoon), 220 Lai Leng Yiap (cup), 220 Tan Wei Ming (slippers), 221 Anka Kaczmarzyk (silkworms), 222 Soren Pilman (sleeping bags), 224 Deborah Cheramie (rayon thread), 224 (sarongs), 226 Joseph C. Justice Jr., 229 Olga Shelego, 230 Kristofer Northrup (low-twist yarn), 231 Igor Smichkov (high-twist yarns), 231 Craig Veltri (cotton wool balls), 232 David Sucs (cotton field), 232 Noam Armonn (harvester), Elianet Ortiz (ginning), 232 Muammer Mujdat Uzel (bales), 232 Danish Khan (carding, spinning), 232 (drawing), 232 Youssouf Cader (combing), 233 Joellen Armstrong (yarn), 235 Sharon Meredith (carpet), 235 Paul Johnson (suit fabric), 241 (pyjamas), 242 Jason Lugo (beanbag), 242 Eli Romero (shop), 243 (all), 247 Eliza Snow (loom), 247 Steven Allan (Navajo rug), 247 Danish Khan (industrial machine), 251 (all), 252 John Said, 253 Ferran Traite Soler (cyclist), 264 (dot painting, rock painting), 264 Anne Clark (flag), 266 Robert Lerich, 267 Jacom Stephens (Kuna Indian woman), 267 Graham Klotz (fish mola), 268 Filip Makowski (children), 268 Kris Vanderreycken (Hmong woman), 268 Joel Carillet (hands), 269 Alan Tobey (China), 271 (all), 272-274 (all), 276 (all), 278 Anderas Reh (technician), 278 Chris Schmidt (fashion designer), 278 Maks Dezman (shoe designer), 278 Frances Twitty (dry cleaning), 288 Stephen Morris (boy), 288 Jordan Chesbrough (girl), 288 Michael Kemter (unisex clothing), 289 Noam Armonn (cotton), 289 Alexandr Denisenko (factory), 290, 291 (all); Jacquard Products/Rupert, Gibbon & Spider, Inc.: p. 33 (printing cotton), 95 (ExtravOrganza); Jupiterimages Corporation © 2008: pp. 3 (jester, bears), 128 (golf bag), 215 (socks), 250 (hat), 253 left, 257 (Matthew Flinders), 258 bottom, 279, 280; Kim Carpenter's Theatre of Image (photographed by Branco Gaica): pp. 166, 168; Lincraft: pp. 132-134 (felt tote page instructions and photos); Lonely Planet Images: p. 264 David Wall (Ulugu); Catherine Martin: p. 141 top; Pearson Education: p.283 from *Nuffield Design and Technology – Textiles* Longman © 1996; *peteralexander*: pp. 138-140, 286-7; Photolibrary: p. 222 left, 225, 227; Pitt Trading: p. 74 bottom right; Twentieth Century Fox: pp. 143, 144; MOULIN ROUGE ©2001 Twentieth Century Fox. All rights reserved: pp. 141 bottom left, 145; VSM Australia: pp. 10 (needles), 38 (needle types), 201 (wall hanging); Bartosz Sarama/yesternight.pl: pp. 1, 67 bottom right; Shutterstock.com: p. 45 bottom right; Spencer & Rutherford: 153-155; Textile Fabric Consultants, Inc. <www.textilefabric.com>: p. 244, 247-250 (fabric samples); Kath Wilkinson: p. 172 (eucalyptus, tea-tree, devil's twine, soil, leaves), 173, 174; Wrap With Love Inc.: p. 245

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## Project work

Completion of textile projects is integral to developing skills and confidence in the manipulation and use of a range of textile materials, equipment and techniques. You will learn to design, produce and evaluate textile items across a range of focus areas. These focus areas include apparel, furnishings, costume, textile arts and non-apparel.

Project work gives you the opportunity to develop and refine skills to produce quality textile items. When documenting project work you will show evidence of each of the stages of designing, producing and evaluating.

- Chapter 1** Introduction to project work
- Chapter 2** Project work focus area: apparel
- Chapter 3** Project work focus area: furnishings
- Chapter 4** Project work focus area: costume
- Chapter 5** Project work focus area: textile arts
- Chapter 6** Project work focus area: non-apparel





# Introduction to project work

## Outcome, knowledge and skill statement

### Outcomes:

- 5.4.1 selects and uses appropriate technology to creatively document, communicate and present design and project work
- 5.5.2 selects appropriate techniques and uses equipment safely in the production of quality textile projects
- 5.6.1 evaluates textile items to determine quality in their design and construction

### Students learn about:



#### Designing

- Sources of inspiration
- Generating and developing design ideas



#### Producing

- Using commercial patterns
- Safe use of a variety of textile equipment



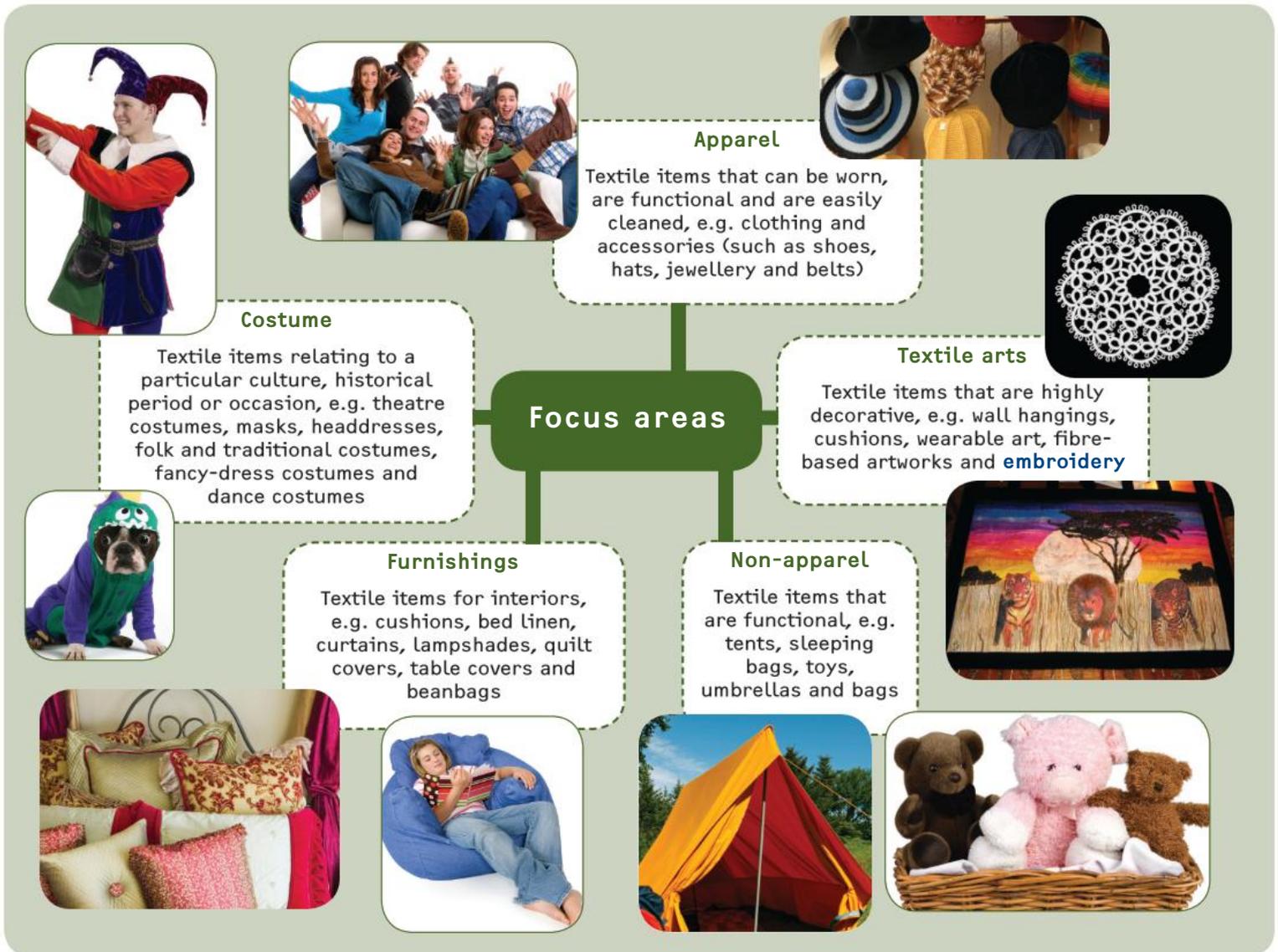
#### Evaluating

- Evaluating the quality of textile items

Project work is an essential part of Textiles Technology. The majority of class time will be spent designing, producing and evaluating textile items. It is very important to understand the difference between designing, producing and evaluating, as each stage is necessary to ensure a quality textile item is produced. **Designing** is the first stage in the process of creating a textile item. You need to visualise the item you are going to produce. This may involve a sketch, coloured drawing or computer-aided design. **Producing** relates to the construction of the textile item. Experimentation will ensure the most suitable techniques are selected and you have the skills to carry out the technique to a high standard. **Evaluation** is essential throughout the designing and producing stages. Evaluation at the designing stage ensures you have selected the best possible solution for the needs of the project. Final evaluation will allow you to reflect on the quality of the textile item produced and reflect on your time management skills so you can modify and improve future project work.

When completing project work you will work in one of five focus areas. Aim to work in a variety of focus areas over the two years of the course, as textile items in different focus areas require different textile techniques. This will ensure you develop a wide range of textile skills from **functional** skills, such as overlocking, to decorative skills, such as embroidery.

# Focus areas



## Activity 1.1 Focus areas

For this activity, you will divide into five groups to study the focus areas. Each group must select a different focus area.

Each member of the group is to collect six images that reflect the selected focus area. Use a noticeboard in the classroom to display the images, and include labels to identify each of the five focus areas. The focus area storyboard will be a source of inspiration for your project work.

In chapters 2 to 6 there are examples of project work from each of the five focus areas. Each project gives examples of designing, producing and evaluating which are relevant to the selected project. There is no one right or wrong way to work through the process of designing, producing and evaluating. As you become more experienced you will be able to select the most appropriate process for the textile item you are going to produce. Always discuss the process with your teacher to ensure it meets assessment requirements.

# Designing



Designers in industry use a similar process of designing, producing and evaluating to produce their collections each year. Inspiration is the motivation or stimulus for designers to start a new textile project. For each textile project you will gain inspiration from different sources, including history, **cultures**, nature, items made by people, feelings, emotions and world events. You may gain inspiration from a 19th-century corset or a top designed by Sass and Bide, but you should always strive to be creative and develop an original design. Do not just copy someone else's design.

## Sources of inspiration

### History

Very little in design is completely new. Designers will take elements from historical designs and use current technologies, such as new fabrics and decoration techniques, to create their own modern interpretation.

### Culture

Exploring different cultures allows designers to gain inspiration for new ideas. You might travel to an overseas location in the school holidays and observe unusual clothing styles or intricate stonework on buildings. The next textile item you design may be inspired by the photos from your last holiday.

### Nature

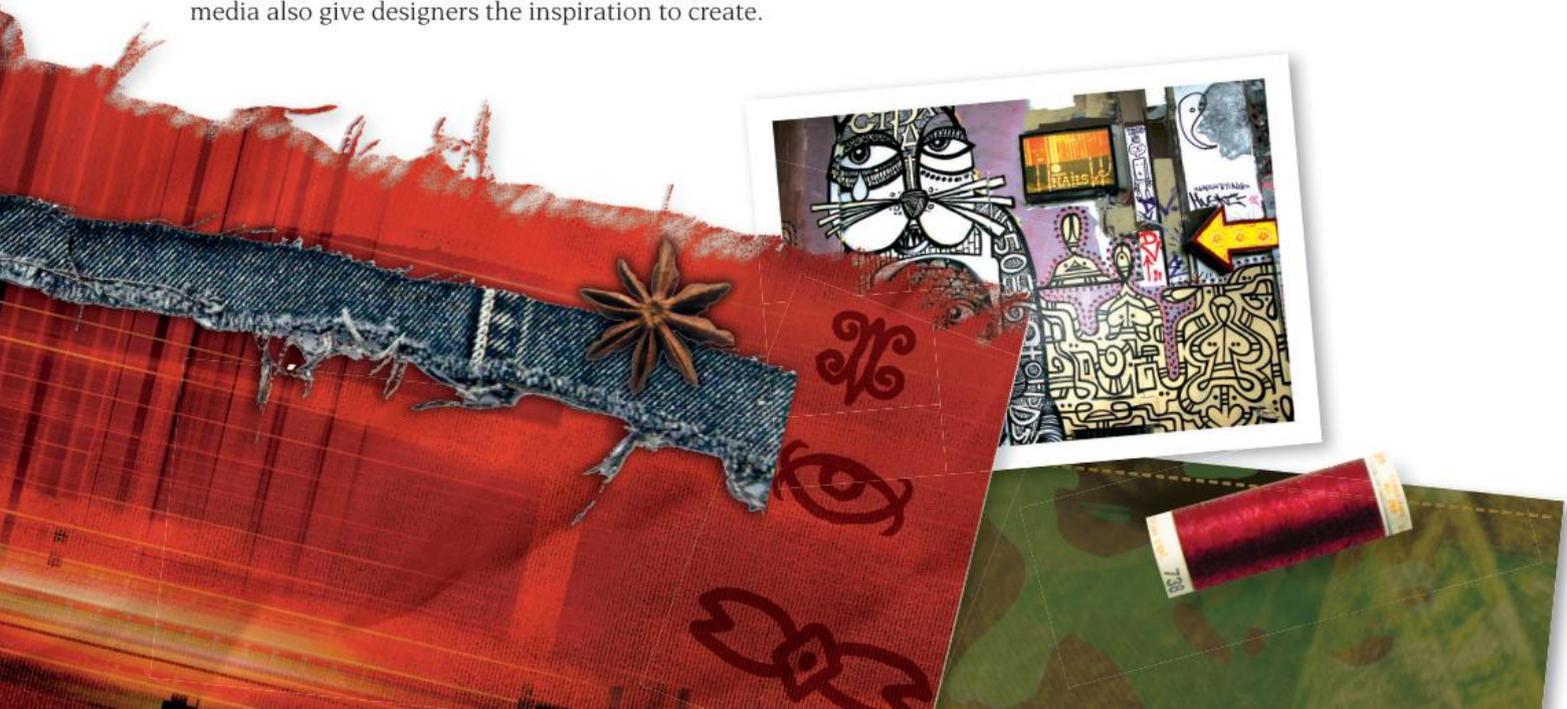
Look around you: nature provides a diverse range of design ideas. The colours and shapes of flowers and leaves, the texture and colour of bark, and images of landscapes can all inspire designers to create interesting textile products.

### Manufactured items

Items created by people can also inspire textile projects. Think about different textile techniques and existing textile products. You will also gain inspiration from items unrelated to textiles, including decoration on buildings (such as wrought iron fences and stained glass windows) or manufactured items (such as cars, clocks or patterns on crockery).

### World events, feelings and emotions

What happens in the world will influence your textile work. Times of happiness and prosperity may be reflected through the use of bright colours and positive images. Designers may use their textile work to make a statement about current issues, including global warming, drought, endangered species or war. Music and media also give designers the inspiration to create.



## Activity 1.2 Sources of inspiration

Using the following sources of inspiration, sketch a kit bag that could be used to store your textile materials and equipment. **Render** your sketch to reflect the colour scheme and fabric design. Label the **design features**.

Sources of inspiration				
Rainbow colours	Logo	Existing bag designs	Zipper	Pocket
				
Sketch of kit bag, rendered and labelled				

## Generating and developing ideas

The first step in creating a textile project is to decide what the item will look like. Once you have decided on your sources of inspiration, think about the following aspects of the design:

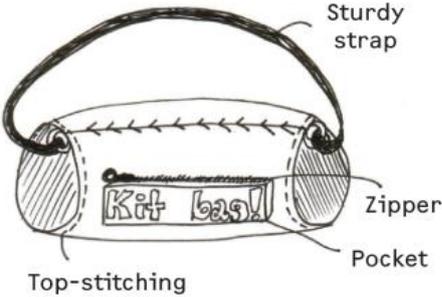
- colour
- design features
- **size**
- textile materials, including **fibre, yarn** and fabrics
- **notions**
- textile techniques
- embellishments.

Many designers start with **thumb sketches**. A thumb sketch is a quick sketch that is usually completed in pencil and labelled with the basic design features. When designing you will need to complete a number of sketches and evaluate them to decide which textile design is the most appropriate for the intended use.

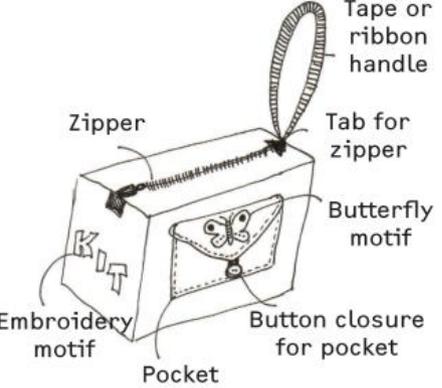
A **PMI** is a useful evaluation tool.

The following thumb sketches demonstrate the design development for the kit bag skills project which appears later in this chapter.

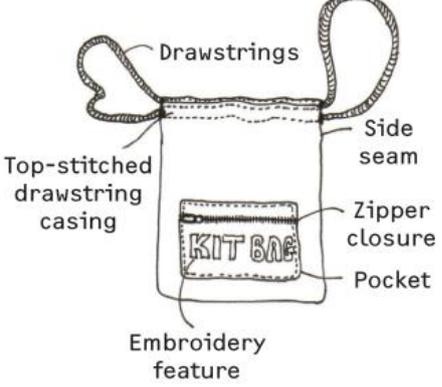
### PMI evaluation – kit bag 1

Thumb sketch – kit bag 1	Positive	Minus	Improvements
 <p>Sturdy strap</p> <p>Zipper</p> <p>Pocket</p> <p>Top-stitching</p>	<ul style="list-style-type: none"> <li>• Unusual shape</li> <li>• Sturdy strap</li> <li>• Top-stitching</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to stitch circle ends to bag</li> <li>• Pocket too small</li> <li>• Bag too small</li> </ul>	<ul style="list-style-type: none"> <li>• Select a simpler design for first project</li> <li>• Enlarge size of bag to fit project work in</li> <li>• Enlarge size of pocket for sewing equipment</li> </ul>

### PMI evaluation – kit bag 2

Thumb sketch – kit bag 2	Positive	Minus	Improvements
 <p>Tape or ribbon handle</p> <p>Zipper</p> <p>Tab for zipper</p> <p>Butterfly motif</p> <p>Embroidery motif</p> <p>Pocket</p> <p>Button closure for pocket</p>	<ul style="list-style-type: none"> <li>• Functional shape</li> <li>• Butterfly motif</li> <li>• Zipper allows easy access to content of bag</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to make corners accurate</li> <li>• Pocket too small</li> <li>• Button closure may be difficult</li> </ul>	<ul style="list-style-type: none"> <li>• Enlarge size of bag and simplify the design</li> <li>• Remove button closure from pocket</li> </ul>

### PMI evaluation – kit bag 3

Thumb sketch – kit bag 3	Positive	Minus	Improvements
 <p>Drawstrings</p> <p>Top-stitched drawstring casing</p> <p>Side seam</p> <p>Zipper closure</p> <p>Pocket</p> <p>Embroidery feature</p>	<ul style="list-style-type: none"> <li>• Functional shape</li> <li>• Easy to decorate</li> <li>• Embroidered name on pocket</li> </ul>	<ul style="list-style-type: none"> <li>• Need to learn how to complete a buttonhole for the casing</li> <li>• Need to learn how to insert a zipper</li> </ul>	<ul style="list-style-type: none"> <li>• Individualise bag by embroidering my name or painting a logo on pocket.</li> </ul>

Once the most appropriate design is selected it is important to render the design and experiment with different colours and fabric designs. Labelling will help you to remember the design features you intend to include in the item.

Rendered sketch – kit bag 3



CAD artwork showing the effect of different colours and designs

Designs can be created using software packages, such as Photoshop and Illustrator. This type of design is called CAD or computer-aided design. It is used by many designers, as it allows the user to create, modify, communicate and store designs. Once you understand how to use CAD programs you will be able to experiment with a wide range of colour choices, fabric designs, fashion silhouettes and design features. At your school you may have access to a graphic tablet and stylus which you can use to draw freehand. This allows you to store designs in the computer and manipulate them using a variety of software programs.



Graphics tablet

## Producing



After selecting the design for the textile project, you will require a pattern. You will use a commercial pattern for most projects; or you might create a simple pattern for projects such as the kit bag or furnishing items. A commercial pattern is a paper pattern that can be purchased at a fabric shop or from a catalogue. Patterns are available for textile items in all of the five focus areas; however, sometimes it is difficult to find exactly the design idea that you have selected, so you may need to compromise and choose a similar design.

In chapter 2 a commercial pattern is used to make pyjama pants and a hoodie, and in chapter 4 a corset and a vest. Although you may not select exactly the same commercial pattern as used in these chapters, these projects will help you to understand how to use a commercial pattern, so one day you will be able to make textile projects from commercial patterns without your teacher's assistance.



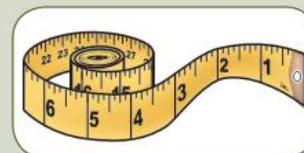
Corset pattern used in chapter 4  
Courtesy of Simplicity Pattern Co. Inc.

## Safe use of textile equipment

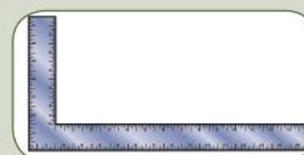
In the producing stage, a variety of textile equipment is used for the different stages of construction. It is important to understand what each piece of equipment is used for and learn how to use it safely.

### Equipment for measuring

A *tape measure* is a flexible measuring tool that can easily bend along the shape you are measuring. It is usually 150 cm in length. A tape measure is an ideal tool for taking body measurements and measuring along long edges or around curves.



*Rulers and square rules* are used to draw straight lines. A square rule will allow you to create 90-degree angles, which are important when creating patterns for the kit bag or furnishing items. Metre rulers are also useful when you are creating large pattern pieces.



### Equipment for marking

*Dressmaker's chalk* or *fabric marking pens* are used to copy pattern markings, including **darts** and **seam** allowances, onto the fabric. Fabric marker pens can be water soluble or air soluble. When you are just learning to sew, water-soluble pens are more useful, as air-soluble pens may disappear before you are ready to use the pattern marking. Tailor's chalk is also useful, as it comes in several colours, making it suitable for dark- and light-coloured fabrics. Never use a normal pen or pencil on fabric, as they are very difficult to remove, and you may permanently mark your fabric.



### Equipment for cutting

*Dressmaker's shears* are used for cutting fabric only. If you use them to cut paper you will blunt them. Left-handed shears are also available.



*Pinking shears* cut zigzag, fray-resistant edges. They are useful for trimming fabrics and textile samples for presentation.



*Embroidery scissors* are small scissors that are used in hand embroidery, and for clipping seams and threads.



A *Quick Unpick* has a sharp, curved edge for cutting seams open and a point for picking out threads. It is also useful for slitting buttonholes.



### Equipment for construction

*Pins* are available in a variety of thicknesses and lengths. It is important to select the pins that are suitable for the fabric type you are using. Glass-headed pins are easy to use when you are learning to sew, as they are longer than standard pins and easy to see. Lace pins are very fine pins and should be used on delicate fabrics.



A *pin cushion* or *magnetic pin holder* is a practical place to store pins when they are not in use. The magnetic pin holder will hold pins in place even when the pin holder is turned over. It is also an easy way to pick up pins left at the sewing machine.



*Hand needles* are made in different sizes for their intended end use. They vary in length, thickness and the size of the eye and shape of the point.

Hand-sewing needles are called sharps and have a medium length and a round eye. They are suitable for most fabric weights.

Crewel needles are used for hand embroidery, as they have a sharp point and a long eye, allowing a thicker thread to be used.

Beading needles are very fine and long, making them suitable for attaching beads and sequins.

Tapestry needles are thick needles with a blunt end that pushes the fabric threads apart, rather than piercing through them. The eye is large so thick yarns like wool can be used.



Continued overleaf

<p>A <i>loop turner</i> is a long, wirelike bodkin with a hook at one end for grasping hold of fabric tubing and turning it through to the right side.</p>	
<p>A <i>sewing machine</i> is the main tool used for construction of textile items. There are many different brands on the market; some only do straight stitch and zigzag, while others attach to a computer and create elaborate embroidery stitches. Later in this chapter we will look at the sewing machine in detail.</p>	
<p><i>Machine needles.</i> Just like hand needles, there are many different types of machine needles. The needle type depends on the weight of the fabric you are using and the yarn type. For each of the projects in chapters 2 to 6 the most suitable machine needle for the textile item will be identified.</p>	
<p>An <i>overlocker</i> is a very useful tool for the construction of textile items, as it stitches a seam and neatens it in the one action. You must be very careful using an overlocker: it has a cutting blade that trims the fabric, but you can also make a hole in the fabric if you have not placed the fabric under the overlocker foot correctly. Three-thread overlocking is mainly used for finishing garment seams that have already been sewn with a sewing machine. Four-thread overlocking has an added lock stitch that overlocks and creates a seam in one operation.</p>	
<b>Equipment for pressing</b>	
<p>An <i>iron and ironing board</i> are essential if you are to produce a quality textile product. Make sure you set the iron to the correct temperature so you do not scorch or melt your fabric.</p>	
<p>An <i>appliqué mat</i> is a non-stick mat which is used to cover fusible web when ironing to stop it sticking to the iron.</p>	

## Activity 1.3 Safe use of equipment

Complete the following table, identifying the hazard for each piece of equipment and the risk control. A hazard is anything that might cause harm or damage. The chance of a hazard causing harm or damage is called the risk. You can work out how big the risk is by thinking about whether the harm or damage is likely to happen. This is called risk assessment. Risk control is the action taken to ensure that the harm or damage is less likely to happen.

Equipment	Hazard	Risk control
Scissors		
Quick Unpick		
Pins and needles		
Sewing machine		
Overlocker		
Iron		

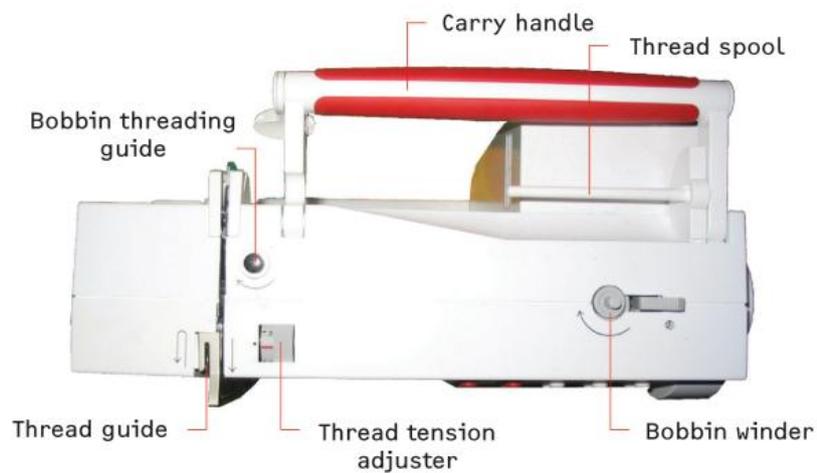
## The sewing machine

There are many different brands of sewing machines, but they all have the same parts and are threaded in a similar way.

If you are to be a successful textile student you must be able to identify the parts of the sewing machine and know how to thread the sewing machine correctly. You cannot assume the machine is set to the correct stitch setting for the sewing you are going to do. Every time you sit down at the sewing machine you need to check that the following parts of the machine are set correctly:

- thread tension
- stitch selector
- stitch width dial
- stitch length dial
- needle position
- feed-dog control.

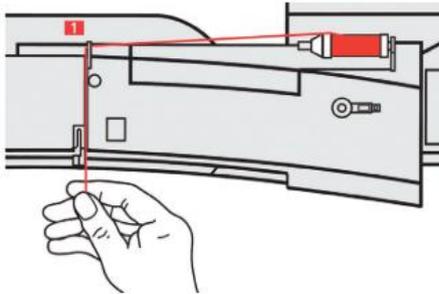
The following photos show the parts of the Bernina Activa 230. See if you can identify the same parts on the sewing machines at school.



## Threading the sewing machine

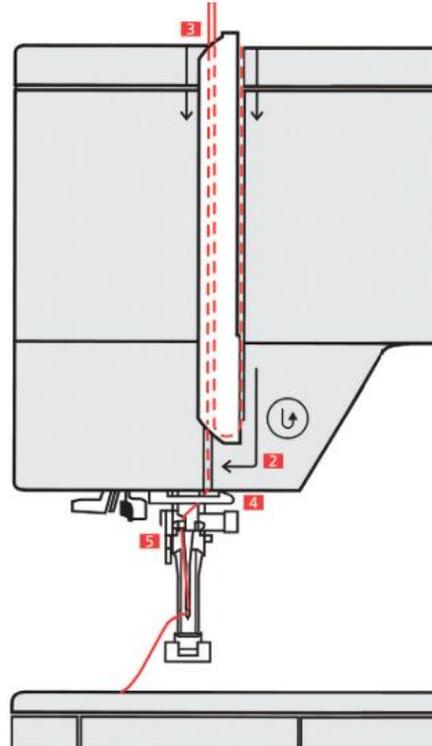
Bernina School threading charts are available free of charge by contacting your local Bernina Sewing Centre or phoning 1800 237 646.

### **BERNINA** Threading the upper thread



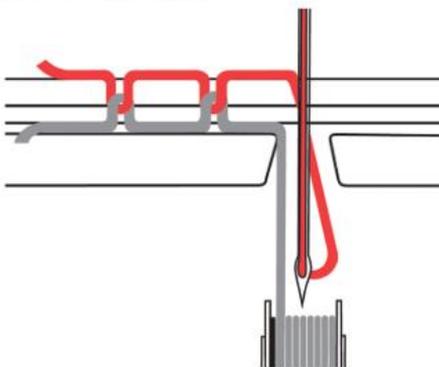
#### Directly from the spool to the needle

- Raise presser foot and needle.
- Switch the power switch to «0» (Off).
- Place spool on pin.
- Place appropriate spool cap on spool.
- Guide thread through eyelet **1**.
- Pull thread into thread tension slit.
- Pull the thread down on the right or the take-up cover to point **2**, then up on the left and into the slot on the take-up lever **3**.
- Pull the thread down and thread it through guides **4** and **5**.
- Thread needle eye front to back.



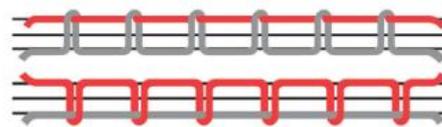
#### Threading the upper thread

### **BERNINA** Thread tension



#### Correct stitch formation

If the thread tension is correctly adjusted, the upper and lower threads interloop between the two fabric layers.



#### Wrong upper thread tension

leads to knots and loops or thread breakages!

Upper thread tension too tight – the interlooping can be seen on top.

Upper thread tension too loose – the interlooping can be seen at the back.

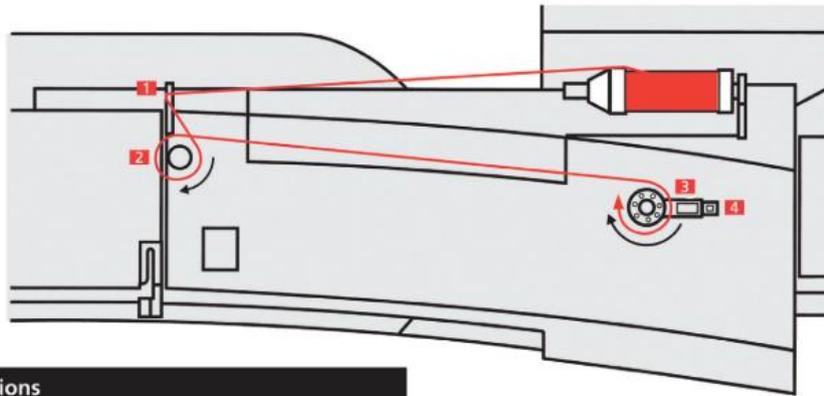
↑ loosen



↓ tighten

#### Adjusting the upper thread tension

## BERNINA<sup>®</sup> Winding the bobbin



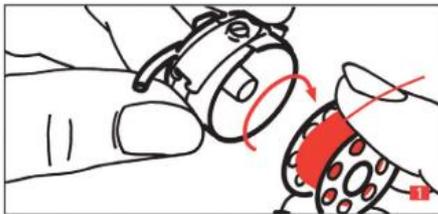
### Instructions

Turn Power stitch to «ON».  
Place empty bobbin on winder.  
Place thread spool and appropriate spool cap on pin.  
Following the arrow guide, thread from the spool through thread guide **1** and around the pre-tension stud to the winder.  
Wind the thread around the bobbin a few times in the direction on the arrow **2**.

Press the engaging lever **3** against the bobbin.  
Press foot control.  
Winding stops when the bobbin is filled.  
Remove bobbin.  
Cut the thread using thread cutter **4**.

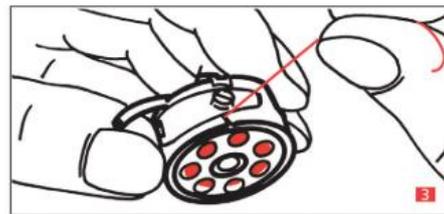
### Winding the bobbin

## BERNINA<sup>®</sup> Inserting the bobbin

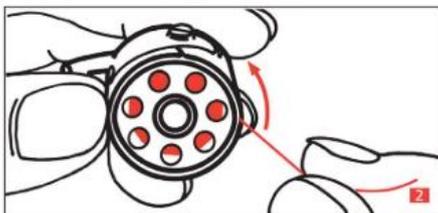


### Instruction

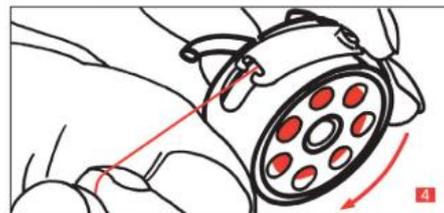
**1** Hold the bobbin case in your left hand, as shown in the picture. Insert the bobbin with your right hand with the thread end placed over your right index finger.



**2** Pull the thread through the slot in the bobbin case.



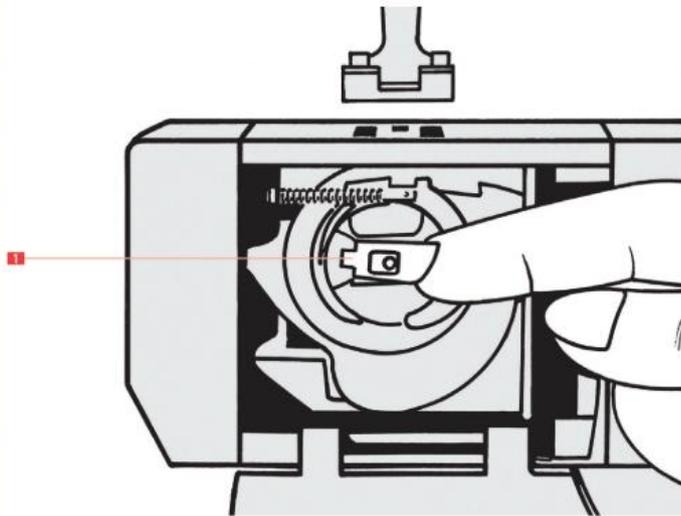
**2** Pull the thread back to the slot.



**4** Pull the thread right through under the spring into the T-shaped opening.

Check:  
The bobbin must turn clockwise when the thread is pulled!

### Inserting the bobbin

**BERNINA****Removing the bobbin case**

**and inserting it when containing the bobbin**  
(rotary system)

1. Turn handwheel until the needle is at the top position.
2. *To remove:* Grasp the bobbin case latch with the thumb and index finger of your right hand and pull.
3. *To insert:* Hold the bobbin case latch **1** in the same way as you did when you removed it. Hold the case with the opening pointing up.
4. *Check:* The case mustn't fall out when pulling the thread.

Removing the bobbin case

## Starting to sew

Before commencing any textile project, plan and organise the stages involved in the design and production of the textile item to ensure the item is completed to a high standard of manufacture. The kit bag skills project is an excellent project to start developing your textile skills.

Remember at all times that you are part of a class or a team and safety is of concern to every member.

### Activity 1.4 Safety in the classroom

As a class, discuss the safety issues in the textiles room. Select one of the identified hazards and create a safety poster to display in the textiles room. Make sure you include information about risk control to ensure students will follow safe work practices. Consider the font size: will students be able to read it from a distance? Include graphics to make your poster eye-catching.

## Basic textile techniques

To develop textile skills you need to practise each technique before completing it on the textile item. Before commencing your kit bag you should practise completing a seam, a buttonhole and a casing. After completion, press your samples and trim them with pinking shears. Label the technique with the type of stitch used, including stitch length and stitch width.

### Seam

A seam is used to join two pieces of fabric together. It is the basic structural element of all textile items. When stitching a seam it is important to pin the edges of the fabric together and stitch parallel to the fabric edge. The size of the seam allowance will depend on the textile item. The standard seam allowance for commercial patterns is 1.5 cm. A 1 cm seam allowance is used on the kit bag in this chapter. Once you have completed the seam you will need to neaten the edges to prevent them fraying. There are many different seam finishes. The seam edges on the kit bag will be overlocked, but you could also neaten them with a zigzag stitch.

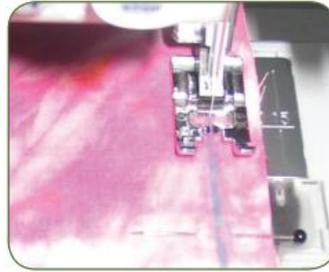
## Seam with overlock seam finish

### Method

- 1** Pin the two right sides of the fabric together. Place the pins perpendicular to the seam line, so it is easier to remove the pins as you stitch the seam. It is important not to stitch over the pins, as you may break the machine needle.



- 2** Use the needle plate as a guide to ensure your stitching is straight, or draw the seam line onto your fabric using tailor's chalk or a fabric marker pen. The seam allowance is 1 cm, so you will need to find this marking on the needle plate and line up the edge of the fabric on this groove. Place the fabric under the presser foot with the excess of the fabric to the left-hand side of the machine.



- 3** Stitch for 1 cm, then reverse to secure the seam. Sew the seam, using a stitch length (SL) of 2.5 and stitch width (SW) of 0. Reverse 1 cm to secure the end.



- 4** After sewing the seam, overlock neaten the edges together. This is called a closed seam. When you start to overlock, do not raise the presser foot like you would on a sewing machine. Instead, slightly raise the toe

of the presser foot and place the fabric under the toe. Overlock the edge, trimming about 2 mm. Remember to leave about 6 cm of chain stitch at the back of the overlocker when you complete the seam. If you cut the chain stitch too close to the overlocker, it may come unthreaded.



- 5** Press the seam allowance to one side.



## Hem or casing

A hem or casing is used to finish the edge of a textile item. The type of hem selected depends on the style of the textile item and the fabric type. A casing is constructed in a similar way to a hem, but it usually has elastic or cord threaded through it to draw the fabric together.

### Hem

### Method

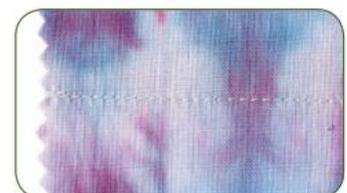
- 1** Overlock the fabric edge.



- 2** Press over the required width, using a measuring tape to ensure the hem is straight.



- 3** Stitch the hem in place using straight stitch, SL 3 and SW 0. Do not reverse at the beginning or end; pull the threads through to the wrong side and tie a knot.



- 4** Press.

## Buttonhole

Buttonholes created on the sewing machine consist of two parallel rows of satin stitch. The ends are enclosed with a bar tack. Many new machines create automatic buttonholes, where you select the buttonhole length and the machine programs the rest. The length of a buttonhole is determined by the size and thickness of the button. A buttonhole is usually about 2 mm larger than the button. It is important to stabilise the fabric with interfacing before working a buttonhole.

### Method

- 1 Transfer the buttonhole placement from the pattern piece, using a fabric marker pen.
- 2 To stabilise the fabric, iron interfacing to the wrong side behind the buttonhole.
- 3 Read the sewing machine manual and set the machine as required.
- 4 Stitch the buttonhole with the machine.
- 5 Slit the buttonhole using a Quick Unpick.

Step 1 Placement of buttonhole marked with fabric marker pen

Step 2 First row of satin stitch

Step 3 Row of straight stitch

Step 4 First bar tack

Step 5 Second row of satin stitch

Step 6 Second bar tack

Step 7 Quick Unpick used to slit buttonhole



## Skills project Kit bag

Constructing this kit bag will allow you to develop a variety of construction and decoration techniques, including:

- tie-dyeing
- overlocking
- machine embroidery
- creating buttonholes
- sewing closed seams
- inserting zippers
- applying pockets
- casing.

### Fabric and notion requirements

- 40 cm 100% cotton fabric, 115 cm wide
- 20 cm zipper
- size 80 universal machine needle
- 1 m cording
- fabric paint or rayon machine embroidery thread
- 25 cm x 25 cm 100% cotton fabric for pocket
- polyester machine thread
- Dylon tie-dye kit
- 30 cm tear-away stabiliser

The 40 cm piece of fabric forms the front and back of the kit bag.

The 25 cm x 25 cm piece of fabric forms the two sections of the pocket.



Universal needles have a slightly rounded point and come in a variety of sizes. The thicker the fabric, the larger the needle number. Use a size 80 for drill or poplin. Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines) [www.husqvarnaviking.com](http://www.husqvarnaviking.com) and [www.pfaff.com](http://www.pfaff.com)

## Dyeing the kit bag

**1** Cover the work area with two layers of newspaper.

**2** Wear rubber gloves.

**3** Using the Dylon tie-dye kit, make up the dye bottles by filling the bottles with water. Secure the lid and shake till all the dye has dissolved. Although the kit states the dye must be used within an hour I have successfully used the dye months later.



**4** Tie the fabric to the desired pattern using rubber bands or string. (See chapter 9 for detailed instructions on dyeing.)



**5** Wet the fabric in cold water and wring out to remove excess water. Place damp fabric on newspaper.



**6** Wearing gloves, squeeze a small amount of dye into the fabric. There should be no excess dye on the newspaper. Use more than one colour if desired. The colours will run into each other, producing new colours.



**7** Place the dyed kit bag and pocket into a plastic bag and leave for at least four hours or overnight.

**8** Wearing rubber gloves, remove all the ties by carefully snipping the rubber bands or string, then rinse the kit bag and pocket thoroughly in cold water until the water is clear.

**9** Dry the fabric.

**10** Iron the fabric on the cotton setting to remove all creases. The fabric is now ready to be used for the kit bag.



View the Dylon website to gain inspiration for tie-dyed projects. Dylon tie-dye kits can be purchased from S & S Creativity Unlimited.

## Producing the kit bag

**1** Iron tear-away stabiliser onto the wrong side of the pocket piece. Using an embroidery machine, embroider your name onto the bottom two-thirds of the pocket. Trim the stabiliser close to the embroidery. If you do not have access to an embroidery machine you can use puff or slick paints to decorate your pocket.



**2** Cut the pocket piece into two. Piece 1 should be 25 cm x 8 cm. Piece 2 should be 25 cm x 17 cm.

**3** Overlock neatens all edges of the kit bag and the two pocket sections. This can be done now or after completion of the side seams.



**4** Pin the right sides of the pocket sections together. Using a fabric marker pen, mark the length of the zipper along the edge of the fabric by measuring 10 cm each side of the centre of the pocket.



**5** Starting from one end of the pocket, stitch to the mark which shows where the zipper opening will start, using straight stitch with SL 2.5 and SW 0. Reverse for 1 cm to secure the seam. Change to SL 4, then stitch along the seam to the second mark, which shows where the zipper opening will end. (Note that this section of longer stitches will be unpicked to create an opening once the zipper is in place.) Change back to SL 2.5, reverse for 1 cm, then stitch to the edge of the pocket. Reverse again to secure the seam.

**6** Press the seam open. Open the zipper and lay it on top of the seam allowance where the stitching has SL 4. Pin down the left-hand side of the zipper through all the layers, making sure the teeth of the zipper are in line with the seam.



**7** Do the zipper up and pin the right hand side of the zipper in place. You may wish to **tack** the zipper in place before machine stitching.



**8** Change the presser foot to a zipper foot and move the needle position to the right.

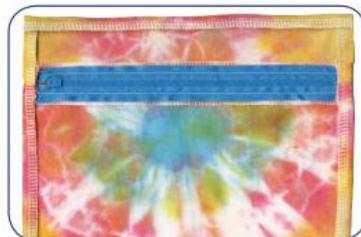
**9** Stitch down the length of the zipper using a straight stitch with SL 3 and SW 0. When you reach the bar of the zipper, use the hand wheel to create two more stitches. If you are not below the bar when you stitch across the base of the zipper you will break the needle. Leave the needle in the fabric and turn the fabric 90 degrees. Stitch across the width of the zipper and then turn again and stitch up the right hand side. Leave the needle in the fabric and turn and stitch across the top of the zipper. Do not reverse, as it will be visible on the right side of the pocket. Pull the threads to the wrong side and tie a knot to secure them.



**10** Using a Quick Unpick, carefully remove the stitching in the centre of the seam to release the zipper.



**11** Press a 1 cm hem allowance on all sides of the pocket.

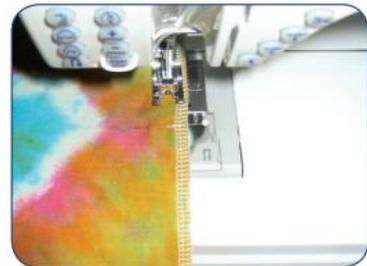


**12** Pin the pocket into position on the centre front of the kit bag and topstitch into place.



**13** Pin the side seams of the kit bag together with the right sides facing each other. Place the pins 10 cm apart, perpendicular to the seam line, so it is easier to remove the pins as you stitch. It is important not to stitch over the pins, as you may break the machine needle.

**14** Use the needle plate as a guide to ensure your stitching is straight. Use a seam allowance of 1 cm. Always reverse for 1 cm at the beginning and end of your seam to secure it. Use SL 2.5 and SW 0.



**15** Press a 2 cm casing at the top edge of the kit bag. This will be easier if you turn the kit bag with the wrong side facing out. Slide the kit bag over the shaped end of the ironing board. Using a tape measure, measure 2 cm, then press.



**16** Cut a piece of tear-away stabiliser 2.5 cm x 2.5 cm. Iron the square of stabiliser to the kit bag 2 cm from the side seam and in line with the fold line for the casing.

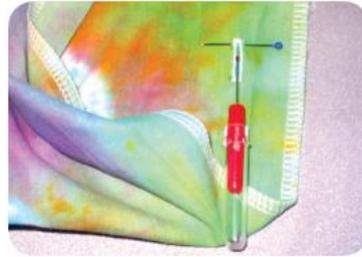


**17** Using a dressmaker's pen, draw a 1.5 cm buttonhole on the right side of the kit bag, in the middle of the tear-away stabiliser.



**18** Set the sewing machine for a buttonhole, and stitch.

**19** Use a Quick Unpick to slit the buttonhole. Place a pin through the side of the bar tack to ensure you do not cut through the end of the buttonhole.



**20** Pin the casing in place and stitch around the casing, through the overlocking. Do not reverse; pull the threads through to the wrong side and tie.

**21** Using a safety pin, thread the cording through the casing and tie the two ends together.



Congratulations! You have completed your first textile project!



## Evaluating

It is important to reflect upon the designing and producing process after the completion of each textile item. As this project was your first you did not have the opportunity to design an original item, but you had the chance to tie-dye the project and embroider or paint the pocket to create your own unique kit bag. The kit bag project has allowed you to develop a number of textile skills that you will use again in future projects.

### Activity 1.5 Evaluation of the skills project

Complete the following table as a reflection on the textile techniques you completed in making the kit bag. Comment on the quality of each technique. Write a self-reflection statement, commenting on the quality of the final kit bag and areas where further practice is required. Ask your teacher to comment on your strengths and make suggestions for improvements.

Machine skills	Completed successfully	Need more practice
Threading the sewing machine		
Winding the bobbin		
Inserting the bobbin		

Adjusting the thread tension		
Changing the stitch selector		
Changing the stitch length		
Changing the stitch width		
Packing away the machine safely		

Techniques	Completed to a high standard of manufacture	Need to practise to improve quality
Tie-dyeing		
Machine embroidery or fabric painting		
Zipper insertion		
Pocket application		
Closed seam		
Overlocking		
Buttonhole		
Casing		
Cord insertion		
<b>Self-reflection:</b>		
<b>Teacher comment:</b>		

## Activity 1.6 Quick quiz

- Briefly describe the difference between designing, producing and evaluating.
- Name the five focus areas and identify two suitable textile items for each focus area.
- Define the terms *inspiration*, *thumb sketch*, *CAD* and *commercial pattern*.
- Briefly explain the purpose of each of the following pieces of textile equipment: tape measure, dressmaker's chalk, Quick Unpick, loop turner and appliqué mat.
- With the aid of labelled diagrams, explain how you would complete a seam.

# 2

# Project work focus area: apparel

## Outcome, knowledge and skill statement

### Outcomes:

- 5.4.1 selects and uses appropriate technology to creatively document, communicate and present design and project work
- 5.5.1 critically selects and creatively manipulates a range of textile materials to produce quality textile items
- 5.5.2 selects appropriate techniques and uses equipment safely in the production of quality textile projects
- 5.5.3 demonstrates competence in the production of textile projects to completion
- 5.6.1 evaluates textile items to determine quality in their design and construction

### Students learn about:



#### Designing

- Sources of inspiration
- Generating and developing design ideas
- Communication and presentation of design ideas



#### Producing

- Using commercial patterns
- Sequencing of construction for a textile item



#### Evaluating

- Evaluating the quality of textile items

## Focus area: apparel

When working in the focus area of **apparel**, projects include clothing and accessories, such as hats, shoes, jewellery, belts and scarfs. The apparel focus area is varied, as it includes:

- casual clothing that can be worn on the weekend
- formal clothing that is worn only on special occasions
- functional clothing, including uniforms and sportswear
- accessories, including hats and shoes.



The textile skills required to make apparel items are quite diverse. When selecting a commercial pattern it is important to select a project suitable for your skill level. Also consider the properties of the fabric, as some fabrics, such as flannelette and printed cotton, are easy to work with, while other fabrics, such as satin, are very slippery and more difficult to work with. Pyjamas are a suitable project to make when learning to sew. Select a fabric like flannelette or printed cotton and you will be able to make your first garment quickly and to a high standard of manufacture.

## Project 2.1 Pyjamas with decorated singlet

**Suggested duration:** 8 weeks

**Task:** Design, produce and evaluate an apparel item suitable for sleepwear.

A commercial pattern will be used for the pyjama pants, which can be made in three different leg lengths. Boxer shorts are most appropriate for the hot weather in summer, three-quarter pants for autumn or spring, and full-length pyjama pants made from flannelette for winter. To complete the pyjamas a singlet will be purchased to use as a pyjama top. It will be decorated so it reflects the fabric of the pyjama pants.

For each project in Textiles Technology, **supporting documentation** that documents the process of designing, producing and evaluating will be completed. An A3 display folder is an excellent way to display the supporting documentation. Using an A3 page allows you to present the work so it communicates the process followed and is visually appealing. Use computer technology where possible to complete the supporting documentation.



Pyjamas

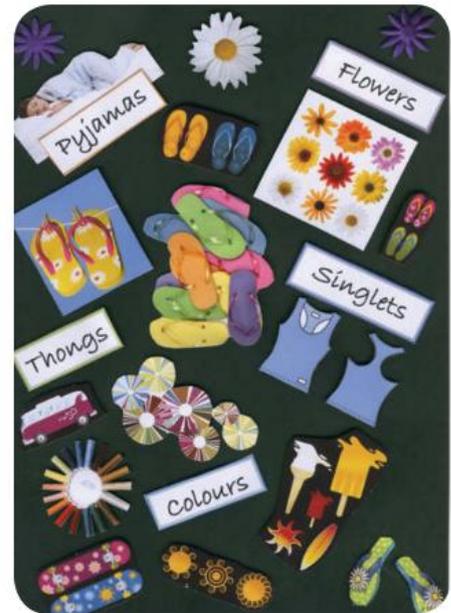
# Designing



Designers use a variety of methods to communicate ideas about the theme of their projects or the particular design they wish to create. This communication may be verbal, written or graphical, or a combination of these three. Designers may hold meetings and communicate verbally; they may create 'look' books, mood or theme boards, or storyboards.

A storyboard is a collection of images, textile materials and key words that will inspire your textile projects. Images may come from magazines, photos or the internet. Textile materials include yarns, fabrics, lace, braids and motifs. Quotations may also be used as inspiration. Use key words to identify the sources of inspiration.

The inspiration storyboard will be the first page of the supporting documentation.



Final storyboard for pyjamas

Storyboard for pyjamas with Blu-tack used to place images

## Activity 2.1 Inspiration storyboard

Create an A3 storyboard for your pyjama project. Complete the activity in an A3 folder.

Try to include at least four sources of inspiration on the storyboard. This will give you lots of ideas to develop a design for your pyjamas.

Consider the placement of images, textile materials and key words. Use Blu-tack to position the images first and move them around to achieve the most effective storyboard. Label the sources of inspiration.

## Generating and developing ideas

When developing ideas for the pyjamas it is important to complete more than one thumb sketch. If you only complete one sketch, how will you know it is the best possible design for the project? The following images demonstrate a progression of design ideas for the pyjama project featured in this chapter. A progression of design ideas means each design is evaluated. You reflect on the features of each design so you can keep the strengths in your next sketch and improve the weaknesses. If you complete a series of three or four thumb sketches you will be able to develop your design into a creative and aesthetically pleasing project.

## PMI evaluation – pyjamas 1

Thumb sketch – pyjamas 1	Positive	Minus	Improvements or interesting features
	<ul style="list-style-type: none"> <li>• Cropped singlet.</li> <li>• <b>Appliquéd</b> motifs from pyjama fabric used to decorate the singlet.</li> <li>• Printed cotton fabric for pants will suit skill level.</li> </ul>	<ul style="list-style-type: none"> <li>• Three-quarter pants, suitable for autumn or spring, may be too hot for summer.</li> <li>• Do I have the machine skills to stitch around the small thong shapes?</li> </ul>	<ul style="list-style-type: none"> <li>• Need to explore different ways to decorate the singlet.</li> <li>• Change pants length to suit hot summer nights.</li> <li>• Visit fabric shop to see what trims are available for the neckline.</li> </ul>

## Activity 2.2 Evaluation of design ideas

Complete a PMI for thumb sketch 2 of the pyjamas, shown at right. Use the PMI of sketch 1 as a guide. Identify the weaknesses in design and the areas that need improvement.

In your PMI, link your comments to sources of inspiration and identify methods of colouration or decoration. Complete a third thumb sketch to create a design that is aesthetically pleasing. Label the design features and the techniques you could use to complete the project.



Once you have selected the most appropriate design you will need to complete a **presentation drawing**. The presentation drawing should take up approximately 75 per cent of an A4 page and should show both the front and back view. The drawing can be presented on an A3 page to allow space for labelling and presentation. This drawing is coloured or rendered to reflect the fabric used and fully labelled, identifying all the design features, for example seam lines and fastenings. Also label sources of inspiration.

Most people find it very difficult to draw lifelike figures. Figure templates can be used to help create realistic presentation drawings. If you place them under the paper you will be able to see their outline. Lightly trace around the outline using a pencil. Then draw the final design for the pyjamas onto the figure.

Remember to include all seam lines. Erase any body lines that are visible under the pyjamas, then render the design with colour pencils. Take time to shade the design and create a realistic representation of the fabric used.



Presentation drawing of pyjamas: front view

# Producing



After selecting the design for the textile project, the next step is to purchase a commercial pattern for the pyjama pants. Either visit the local fabric store to look at the different patterns available or purchase a pattern from a website. Commercial pattern brands include Simplicity, New Look, McCalls, Butterick, Vogue, Burda and Kwik Sew. Some patterns are easier to follow than others, so discuss the pattern choice with your teacher before purchasing the pattern. The pattern images in this chapter are provided courtesy of Simplicity Pattern Co., Inc.

Now it is time to take body measurements so you know what size pattern to purchase.

## Activity 2.3 Body measurements

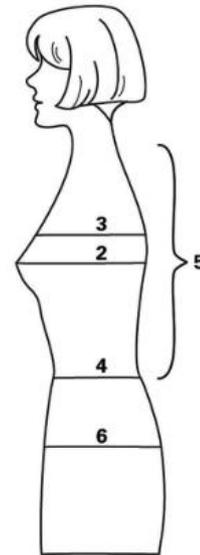
You cannot accurately take your own measurements, so you will need to work in pairs to complete this activity. Follow the instructions below to measure each other.

### How to measure

Measure over the undergarments you normally wear.  
Hold the tape measure comfortably snug but not tight.

- 1. Height:** Standing against a flat wall without shoes, from floor to top of your head
- 2. Bust:** Around the fullest part of the bust and straight across the back
- 3. High bust:** Directly under the arms, straight across the back and above the bust
- 4. Waist:** Tie a narrow elastic around waist and let it settle naturally at your waistline. Measure over the elastic. Keep the elastic in place for the next measurement
- 5. Back waist length:** From the most prominent bone at the base of neck to the natural waistline
- 6. Hip:** Around body at fullest part, usually 18–23 cm below waist

How to measure  
Courtesy of Simplicity Pattern Co., Inc.



Once you have taken your body measurements, compare them to the following size range charts to determine which pattern size suits your figure type. When making pants the important measurements are the waist and hips. It is easier to make a pattern slightly smaller than to make it larger, so if you are between two sizes always buy the larger one.

### Junior

Sizes	3/4	5/6	7/8	9/10	11/12	13/14	15/16	17/18	19/20	21/22	23/24	
Bust	71	73.5	77.5	81.5	85	89	92.5	98	103	108	113	cm
Waist	56	58.5	61	63.5	66	68.5	71	75	78.5	85	90	"
Hip - 7" below waist	78.5	81.5	85	89	92.5	96.5	100.5	106	111	116	121	"
Back Waist Length	34.5	35.5	37	38	39	40	41	42	42.5	43	43.5	"

Size chart for Junior  
Courtesy of Simplicity Pattern Co. Inc.

**Misses'/Miss Petite** - For well-proportioned, developed figures.

Misses' about 5'5" to 5'6" without shoes. Miss Petite under 5'4" without shoes.

Sizes	4	6	8	10	12	14	16	18	20	22	24	26	
Sizes-European	30	32	34	36	38	40	42	44	46	48	50	52	
Bust	75	78	80	83	87	92	97	102	107	112	117	122	cm
Waist	56	58	61	64	67	71	76	81	87	94	99	106	"
Hip - 9" below waist	80	83	85	88	92	97	102	107	112	117	122	127	"
Back Waist Length	38.5	39.5	40	40.5	41.5	42	42.5	43	44	44	44.5	44.5	"
Petite-Back Waist Length	36	37	37.5	38	38.5	39.5	40	40.5	41.5	41.5	42	42	"

**Boys' & Teen Boys'** - For growing boys and young men who have not reached full adult stature.

Sizes	7	8	10	12	14	16	18	20	
Chest	66	69	71	76	81	85	89	93	cm
Waist	58	61	64	66	69	71	74	75	"
Hip	69	71	75	79	83	87	90	94	"
Neck Band	30	31	32	33	34.5	35.5	37	38	"
Approx. Height	122	127	137	147	155	163	168	173	"
Shirt Sleeve	57	59	64	68	74	76	79	81	"

**Men's** - For men of average build; about 5'10" without shoes.

Sizes	32	34	36	38	40	42	44	46	48	50	52	
Sizes-Eur/Fr	42	44	46	48	50	52	54	56	58	60	62	
Chest	82	87	92	97	102	107	112	117	122	127	132	cm
Waist	66	71	76	81	87	92	99	107	112	117	122	"
Hip	84	89	94	99	104	109	114	119	124	130	135	"
Neck Band	34.5	35.5	37	38	39.5	40.5	42	43	44.5	45.5	47	"
Shirt Sleeve	78.5	81	81	84	84	87	87	89	89	91.5	91.5	"

Size charts for Misses'/ Miss Petite, Boys' and Teen Boys', and Men's  
Courtesy of Simplicity Pattern Co. Inc.

A commercial pattern consists of the pattern envelope, guide sheet and tissue paper pattern pieces. The front of the pattern envelope will provide the following information:

- the brand name
- the pattern number
- the sizes in the pattern
- a photo or drawing of the textile item
- view numbers or letters.

The back of the pattern envelope will provide the following information:

- suitable fabrics
- the notions required
- a size chart
- the quantity of fabric required
- the finished garment measurements
- back views of the garments.

The pyjama pattern is a unisex pattern; that means it is suitable for males or females. It is a multi-size pattern, including pattern pieces for sizes extra-small, small, medium, large and extra-large. For this project we are using only the pyjama pants, but you might decide to make the pyjama top or the dressing gown at home or in another unit of work.

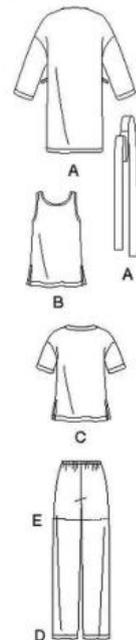


The commercial pattern featured in this chapter is Simplicity pattern 9330.

## 9330

16 PIECES/PIEZAS

Métrages et instructions de couture en Français à l'intérieur de l'enveloppe.



**MISSES', MEN'S AND TEENS' SLEEPWEAR:** Robe A with front band has long sleeves, carriers and self fabric tie belt. Pullover knit tank top B and top C have side slits. B has scoop neckline; C has V-neckline and short sleeves. Pull on pants D or shorts E have elastic waistline casing and self fabric tie ends. Suitable for Overlock/Serger.

**Fabrics:** A, D, E in Flannel, Laundered Cottons, Gingham, Chambray, Lightweight Poplin, Seersucker, Pique, Laundered Silks/Rays, Challis, Batiks, Cotton Interlock, Jerseys, Stretch Velvet, Lightweight Velour. A also in Terry Cloth. B, C sized for stretch knits only. Cotton Interlock, Jerseys, Stretch Velvet. See Pick-A-Knit® Rule. Extra fabric needed to match plaids, stripes or one-way design fabrics.

**Notions:** Thread. C: one pkg. straight seam binding. Look for Simplicity notions.

**BODY MEASUREMENTS**

Bust/Chest	30-32	34-36	38-40	42-44	46-48	In
Hip	31-32½	35-37	39-41	43-45	47-49	"

Sizes	XS	S	M	L	XL	
-------	----	---	---	---	----	--

**A**

45***	4¼	4¼	4¼	4¼	4¼	Yd
-------	----	----	----	----	----	----

60***	3¼	3¼	3¼	3¼	3¼	"
-------	----	----	----	----	----	---

**Interfacing-** 1½ yd. of 22" to 36" lightweight fusible or non fusible

**B - sized for stretch knits only**

60***	1	1	1	1	1	Yd
-------	---	---	---	---	---	----

**C - sized for stretch knits only**

60***	1¼	1¼	1¼	1¼	1¼	Yd
-------	----	----	----	----	----	----

**Interfacing-** ½ yd. of 22" to 25" lightweight fusible

**D**

45" or 60"***	2¼	2¼	2¼	2¼	2¼	Yd
---------------	----	----	----	----	----	----

**E**

45" or 60"***	1¼	1¼	1¼	1¼	1¼	Yd
---------------	----	----	----	----	----	----

**D, E Elastic-** 1¼ yd. of ¾" wide

**GARMENT MEASUREMENTS (Bust/Chest & Hip Printed on Pattern Tissue)**

A - Bust/Chest	44¼	48¼	52¼	56¼	60¼	In
----------------	-----	-----	-----	-----	-----	----

B - Bust/Chest	37	41	45	49	53	"
----------------	----	----	----	----	----	---

C - Bust/Chest	40¼	44¼	48¼	52¼	56¼	"
----------------	-----	-----	-----	-----	-----	---

D, E - Hip	38	42	46	50	54	"
------------	----	----	----	----	----	---

**Finished back length from base of neck:**

A	43¼	44	44¼	45	45¼	In
---	-----	----	-----	----	-----	----

A width	46	50	54	58	62	"
---------	----	----	----	----	----	---

D side length	43¼	43¼	43¼	44¼	44¼	"
---------------	-----	-----	-----	-----	-----	---

D leg width	16¼	18	19¼	20¼	21¼	"
-------------	-----	----	-----	-----	-----	---

E side length	16	16	16	17	17	"
---------------	----	----	----	----	----	---

E leg width	22¼	25	27¼	30	32¼	"
-------------	-----	----	-----	----	-----	---

\*without nap \*\*with nap \*\*\*with or without nap

**VETEMENTS DE NUIT POUR JEUNE FEMME, HOMME ET ADOLESCENTS**

**Tissus:** A, D, E en Flanelle, Cotons pré-lavés, Vichy, Chambray, Popeline fine légère, Seersucker, Piqué, Soies/rayonnes pré-lavées, Étamine, Batiks, Coton interlock, Jerseys fins, Velours extensible, Velours fin, A en tissu éponge aussi. B, C en jerseys extensibles seulement: Coton interlock, Jerseys fins, Velours extensible. Voyez la Règle-Choisissez-Un-Jersey. Prévoyez davantage de tissu pour raccorder les écossais, rayures ou motifs unidirectionnels.

**Merceria:** Fil. C: un paquet d'extra-fort rectiligne. Demandez la mercerie Simplicity.

**ROPA DE DORMIR PARA SEÑORITAS, HOMBRES Y ADOLESCENTES**

**Telas:** A, D, E de Franela, Algodones lavados, Guiguán, Chambray, Popelina fina ligera, Seersucker, Piqué, Sedas/rayones lavados, Chalí, Batiks, Algodón interlock, Mallas finas, Terciopelo extensible, Terciopelo ligero. A de tela esponja también. B, C en mallas extensibles solamente: Algodón interlock, Mallas finas, Terciopelo extensible. Vea la tabla para las mallas. Se necesita tela adicional para casar cuadros, rayas o telas estampadas en una dirección.

**Merceria:** Hilo. C: un paquete de cinta para refuerzo de costura. Pida la mercería Simplicity.

**MESURES NORMALISEES/MEDIDAS DEL CUERPO**

Poitrine/Busto	76-81	87-92	97-102	107-112	117-122	cm
----------------	-------	-------	--------	---------	---------	----

Hanches/Caderas	79-83	89-94	99-104	109-114	119-124	"
-----------------	-------	-------	--------	---------	---------	---

Tailles/Tallas	TP/XP	P	M	G	TG/XG	
----------------	-------	---	---	---	-------	--

**A**

115cm**	3.90	3.90	3.90	4.00	4.10	m
---------	------	------	------	------	------	---

150cm**	2.90	3.00	3.00	3.10	3.10	"
---------	------	------	------	------	------	---

**Entoilage-** 1.40m de 55cm à 90cm léger, thermocollant ou non

**Entretela-** 1.40m de 55cm à 90cm ligera, adhesiva o no

**B Débardeur - en jerseys extensibles seulement /Blusa sin mangas- de mallas extensibles solamente**

150cm**	0.90	0.90	0.90	0.90	0.90	m
---------	------	------	------	------	------	---

**C - en jerseys extensibles seulement/ Blusa - de mallas extensibles solamente**

150cm**	1.70	1.70	1.70	1.70	1.80	m
---------	------	------	------	------	------	---

**Entoilage-** 0.40m de 55cm à 64cm léger, thermocollant

**Entretela-** 0.40m de 55cm à 64cm ligera, adhesiva

**D**

115cm / 150cm**	2.50	2.50	2.50	2.60	2.60	m
-----------------	------	------	------	------	------	---

**E**

115cm / 150cm**	1.10	1.10	1.10	1.20	1.20	m
-----------------	------	------	------	------	------	---

**D, E Elastique-** 1.20m de 1.3cm de large/Elastico- 1.20m de 1.3cm de ancho

\*sin plega \*\*con plega \*\*\*con o sin plega

Back of envelope for Simplicity pattern 9330

## Activity 2.4 Simplicity pattern 9330

Use the information found on the back of the pattern envelope to complete the following activity.

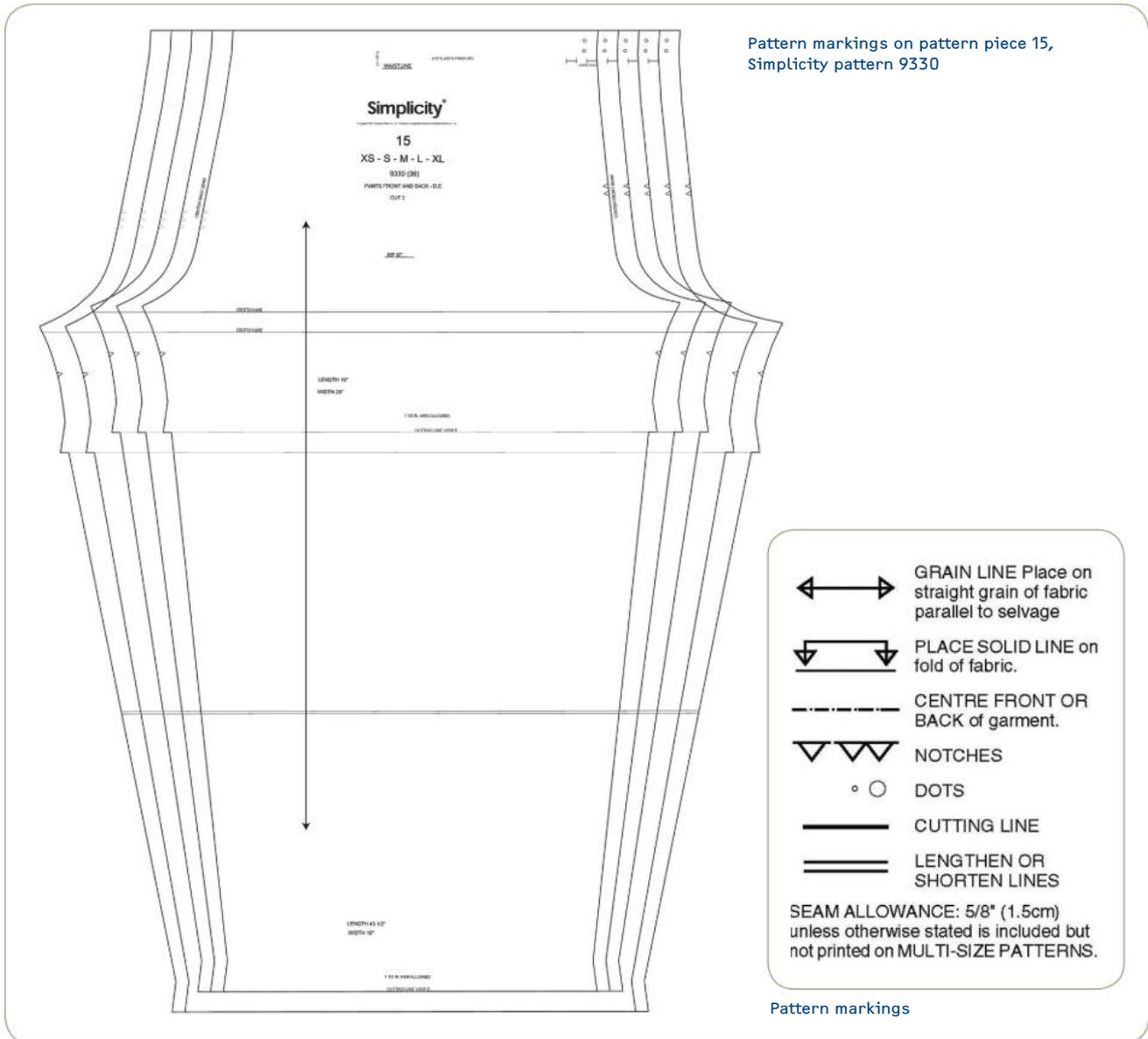
- Write a brief description for pants D and shorts E.
- Identify the fabrics suitable for garments D and E.
- How much elastic will you need to purchase for garment D and E? Make sure you use only the metric measurements.
- If your body measurements were bust/chest 87–92 cm and hips 89–94 cm, which pattern size would you use?
- If you were making pants D using fabric 115 cm wide, how much fabric would you require for size P?
- If you were making shorts E using fabric 150 cm wide, how much fabric would you require for size M?

The guide sheet will provide the following information:

- front and back views of the garment
- an image of pattern pieces
- pattern symbols or markings
- pattern markings.
- the pattern pieces required for each view
- suggested cutting layouts
- sewing directions

It is essential to gain an understanding of pattern markings if you are to use commercial patterns successfully.

**Grainline** is represented by a line with an arrow at either end. When you lay the pattern piece on the fabric the grainline should be parallel to the **selvedge** (sometimes spelt selvage). A grainline can also be represented by a place-on-fold line.



This means the fabric is folded along the straight grain and the pattern piece is placed on the fold. When you have this pattern marking there is no seam line down the middle of the garment.

Cutting lines may be represented by bold lines. Because most patterns are multi-size, the cutting line will be represented by a different type of line for each size. It is important to cut out your pattern accurately if the garment is to fit correctly.

Seam lines are usually represented by broken lines. The seam allowance on a commercial pattern is 1.5 cm, so the same line will appear 1.5 cm from the cutting line.

**Notches** are diamond-shaped symbols used for accurate joining of pieces. A notch on one pattern piece will match with a notch on another pattern piece. It is important to cut out around the notches.

Circles, squares and triangles are additional construction markings that will help you line up pattern pieces and identify the start or end of stitching, pocket and fastening positions.

Darts are usually represented by a broken line.

Centre front and back are always clearly labelled on the pattern.

Actual garment measurements can be found on the pattern pieces. If you compare these to your own body measurements you will gain an understanding of the sizing of the garment. Sometimes it is difficult to judge the amount of fullness in a pattern from the illustration on the pattern envelope.

Hem allowance is also listed on the pattern.

## Laying out a pattern

The guide sheet will list the pattern pieces required for your design and how you should lay out the pattern pieces.

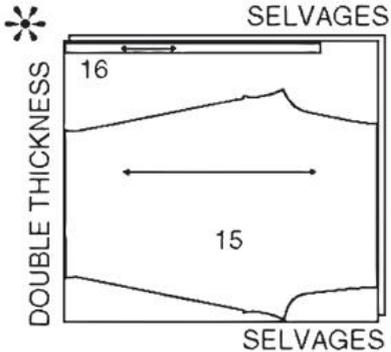
### Cutting layouts

pattern printed side down
  pattern printed side up

#### D PANTS

USE PIECES 15 16

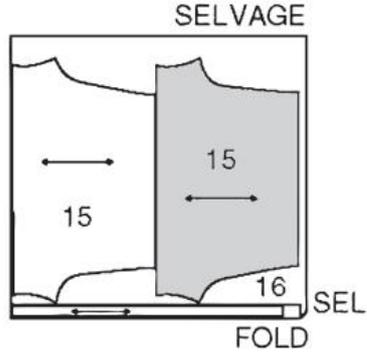
**4** 44" 45" OR 58" 60" (115CM OR 150CM)  
WITH NAP  
ALL SIZES



#### E SHORTS

USE PIECES 15 16

**5** 44" 45" OR 58" 60" (115CM OR 150CM)  
WITH NAP  
ALL SIZES



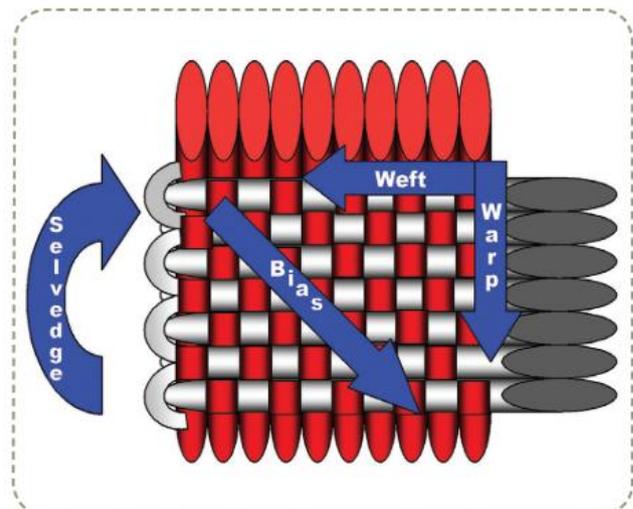
Cutting layouts

## Activity 2.5 Parts of the fabric

Look at the fabric you have purchased for your pyjama pants. Identify the following parts of the fabric.

- The selvedge is the reinforced edge of the fabric that does not fray. The selvedge is usually a tighter weave or contains stronger warp yarns than the rest of the fabric.
- The warp yarns run parallel to the selvedge.
- The weft yarns run across the width of the fabric, filling the spaces between the warp yarns.
- The grain of the fabric is the direction in which the yarns run; the lengthwise grain is parallel to the selvedge.
- The bias is the diagonal direction across the grain. Although woven fabrics do not stretch along the warp and weft, they do have a little stretch across the bias.

Cut a sample of your fabric approximately 10 cm x 10 cm, including the selvedge. Label the selvedge, warp and weft yarns, lengthwise grain, bias and cut edge of the fabric. Glue the labelled fabric into your workbook.



The parts of woven fabric

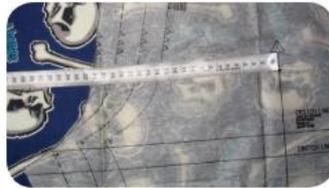
## Laying out the pyjama pants pattern

### Method

- 1 Before laying the pattern pieces onto the fabric, cut around the pattern pieces using paper scissors. If you are using a multi-size pattern, be sure to cut on the right cutting line for your size. When you get to a notch you should cut out around the notch.
- 2 If you are using 100% cotton fabric, pre-wash the fabric before laying out the pattern and cutting. Cotton fabric can shrink up to 6% per metre. This means the fabric may reduce by 6 cm over each metre. The fabric only shrinks in the length, not the width. If the fabric is not pre-washed and you make the pyjama pants just the right length, they may become too short after washing. Always pre-wash the fabric the same way as you will wash the completed

garment: if you wash in hot water pre-wash in hot; if you wash in cold water pre-wash in cold.

- 3 When laying the pattern pieces onto the fabric refer to the cutting layout. First identify the selvedge and the cut edge so you know which way to fold the fabric.
- 4 To ensure the grain line on the pattern is parallel to the selvedge, measure from each end of the grain line to the selvedge to check that it is the same distance.



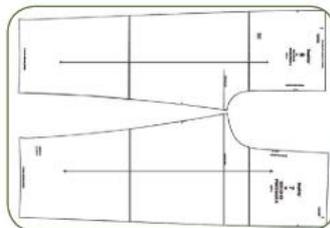
- 5 Pin the pattern piece to the fabric. Place the pins approximately 10 cm apart, but always place pins in the corners of the pattern pieces. Using dressmaker's shears, cut around the pattern pieces.



## Construction of the pyjama pants

### Method

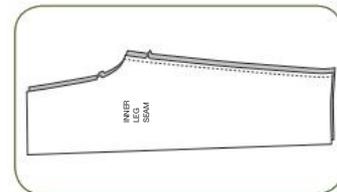
- 1 Now it is time to start constructing the pyjama pants – but before the pattern pieces are removed from the fabric, mark all pattern markings onto the fabric using either tailor's chalk or a fabric marker pen. If the pyjama pants have a casing with a drawstring instead of elastic in the waist, mark the position of the buttonhole. Follow the same process as for the kit bag (step 17, page 20).
- 2 The machine needle size depends on the fabric being used. If the pyjamas are to be made from flannelette or printed cotton use a size 80 universal machine needle.
- 3 The Simplicity 9330 pants pattern has one front and one back leg in the same pattern piece, so there is no side seam. If you are using a pattern with a separate front and back leg the first step will be the side seam, then the inner leg seam.



Pyjama pattern with side seam

- 4 For pattern 9330, place the right sides together and pin along the inner leg seam line. Refer to your sample and the instructions for completing a seam on page 16. Always place the pins perpendicular to the seam line, but remember to remove them as you are stitching to prevent breaking a needle. When placing the fabric under the presser foot the excess of the fabric is always to the left-hand side of the sewing machine. Use a straight stitch, SL 2.5 and SW 0. Reverse for 1 cm at the beginning and end of the seam to secure it.

The seam allowance is 1.5 cm. If the correct seam allowance is not used the pants will not fit correctly. Always cut the threads close to the fabric after stitching the seam. Have a pin holder near the sewing machine and place the pins onto the pin holder as they are removed.



Inner leg seam



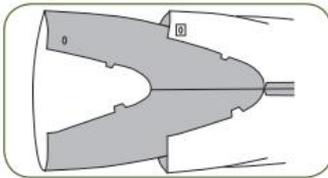
Sewing inner leg seam for boxer shorts

- 5** Use the overlocker to neaten the seam edge, or zigzag stitch the edges together using SL 3 and SW 3. This type of seam is called a closed seam.



Overlock inner leg seam

- 6** Have one leg with the right side facing out and one leg with the wrong side facing out. Place the leg with the right side facing out inside the leg with the wrong side facing out, so that the right sides are together. Pin around the crotch seam, matching the inner leg seams and notches. Stitch the seam using straight stitch, SL 2.5 and SW 0, with a seam allowance of 1.5 cm. Remember to reverse to secure the seam. Overlock neaten the edges.



Aligning legs to sew crotch seam

- 7** The pyjama pants are now together. It is important to try them on and check they fit correctly. You may need to take them in if they are too big. If you want them to sit on the hips instead of the waist you will need to shorten the pyjamas at the waistline. Remember to measure accurately and remove exactly the same amount all the way around the top of the pants. Before you start to remove the excess, make sure you have allowed for the 3 cm casing.



Removing excess at the waistline so the pyjamas sit on the hips

- 8** When you have the fit right, overlock around the waist/hipline and around each leg.

- 9** Press over 3 cm around the waist/hipline.



Press over the casing; use a tape measure to ensure the casing is the correct width.

- 10** If using a drawstring, stitch two buttonholes as per the placement on the pattern piece. If inserting elastic, complete a row of stitching 2 mm from the fold of the casing. Use straight stitch with SL 3 and SW 0, and do not reverse, as the stitching will be visible on the right side of the fabric. Use a needle to pass the threads through to the wrong side and tie a knot. This row of topstitching will prevent the elastic from twisting in the casing.

- 11** Cut a piece of non-twist elastic to fit comfortably around your waist or hips plus 2.5 cm. Stretch the elastic slightly when measuring it to ensure a firm fit.

- 12** There are two methods of inserting the elastic. For the first method, join the elastic to form a circle by stitching it with a crossed-box pattern. Place the elastic circle into the casing against the row of topstitching.



Crossed-box stitching pattern

- 13** Using a zipper foot, stitch the bottom of the casing approximately 2 mm from the edge of the elastic. You will need to feed the elastic around the casing as you stitch, as the elastic will be smaller than the width of the pants.



- 14** Do not reverse at the end of the seam; pass the threads through to the wrong side and tie a knot. This method of inserting the elastic saves time, as you do not need to thread the elastic through the casing with a safety pin.

- 15** For a simpler method of inserting elastic, press over a 3 cm casing. Stitch 2 mm from the fold of the casing using straight stitch, then stitch a parallel row 2.7 cm from the first row; the second row of stitching should be through the middle of the overlocking. Leave a 3 cm opening at the centre back of the pants.

- 16** Use a safety pin to thread the elastic through the casing and use a crossed-box pattern to join the elastic.



- 17** Machine stitch across the opening at the back of the casing. Attach a small piece of ribbon to the centre back so you can identify the front and back of the pyjamas.

- 18** Press over the required hem allowance on each leg. Using straight stitch, stitch close to the overlocked edge of the fabric. A **twin needle** can be used for a decorative hem finish.

- 19** Clip the crotch seam so it will lie flat.



Clipped crotch seam

- 20** Press the completed pyjama pants. The iron should be on the cotton setting to prevent scorching the fabric.

## Decorating the singlet

There are many different ways to colour and decorate a singlet. Chapter 9 explains a variety of methods of colouration and decoration. Alternatively, you can follow the step-by-step instructions below for digital imaging, appliqué, braids, machine embroidery, fabric strips and beading.



Visit the Bonds website to see their latest singlet designs.



### Digital imaging

#### Method

- 1 Cut the desired shape from the left-over pyjama pants fabric.
- 2 Scan the fabric shape.



- 3 Using Inkjet printing cotton, print the fabric shape at A4 size.



Inkjet printing cotton

- 4 Peel off the carrier paper and iron fusible web to the wrong side of the fabric shape. Using embroidery scissors, cut around the fabric shape and peel off the paper backing. As the fabric shape will stabilise the singlet, it is important to slightly stretch the singlet before applying the shape.

This can be achieved by placing the singlet over the end of an ironing board. Iron the fabric shape into position on the back of the singlet, then iron tear-away stabiliser to the wrong side of the singlet under the fabric shape.

- 5 Using a small zigzag stitch with SL 2 and SW 2, stitch around the shape. Do not reverse at the end of the stitching; pull the threads to the wrong side and tie a knot.



- 6 Remove the tear-away stabiliser after stitching the shape to the fabric.



Completed singlet showing the original size of the fabric shape



Flannelette pyjama pants and singlet with appliqué digital image

## Appliqué and braid

### Method

**1** Cut a section of left-over boxer short fabric. Iron fusible web to the wrong side of the fabric. Using embroidery scissors, cut out the desired shapes. Note: as the thong shapes used in this example are quite small, they were cut with a small border of black background fabric to allow space for stitching.

**2** Iron the fabric shapes into position on the front of the singlet.



**3** Iron tear-away stabiliser to the wrong side of the singlet under the fabric shapes. This will prevent the fabric from stretching when completing the stitching. Using a straight stitch with SL 3 and SW 0, stitch around the fabric shapes. Do not reverse; leave the threads long so you can pull them to the wrong

side and tie a knot. Remove the tear-away stabiliser.



**4** Attach a braid around the neckline of the singlet using straight stitch with SL 3 and SW 0.



Printed cotton boxer shorts and appliqué singlet and neck trim



Printed cotton boxer shorts with cropped appliqué singlet

## Machine embroidered motif

You can use a computerised sewing machine and embroidery software to create a motif on the singlet.

### Method

**1** Stabilise the wrong side of the fabric, then place the fabric into an embroidery hoop.

**2** Follow the instructions in the sewing machine book.



Embroidery machine  
Image courtesy of VSM Australia  
(Husqvarna Viking and Pfaff Sewing Machines)



Satin boxer shorts with embroidered singlet

## Fabric trim and beading

### Method

- 1 Cut strips from the fabric used for the pyjama pants.
- 2 Lay the fabric vertically on the singlet, and add a variety of ribbons.
- 3 Using a small zigzag stitch with SL 3 and SW 3, attach the fabric pieces to the singlet. Do not stitch the fabric horizontally across the singlet, as this will stop the singlet from stretching.
- 4 Decorate with beads.



Flannelette pyjama pants with fabric trim singlet

## Activity 2.6 Producing

Complete this activity in an A3 folder.

- Write a brief description of the pyjama project.
- Give the number and brand name of the commercial pattern. What features of the design appealed to you?
- Include a swatch of the fabric used for the pyjama pants. (Use pinking shears to trim the sample.) Name the fabric and identify the fibre composition. What properties of the fabric make it suitable for nightwear?
- How much fabric did you purchase?
- What notions were required to make the pyjamas?
- How much did the pyjama project cost? Itemise the costing.
- Create a flowchart to show the order of construction. Include the method for the pyjama pants and singlet.
- With the aid of diagrams or fabric samples, explain how you completed two techniques on the pyjama project.

## Activity 2.7 Evaluating

Complete this activity in an A3 folder.

- Evaluate your completed textile project. Comment on the effectiveness of the design (function and aesthetics), the quality of production and the suitability of the fabrics and notions used.
- If you were to create the project again, what modifications would you make? Why?

## Activity 2.8 Quick quiz

- 1 What is a storyboard?
- 2 Explain the term *progression of design ideas*.
- 3 If a commercial pattern is labelled *multi-size*, what does this mean?
- 4 Draw the pattern marking for a grainline.
- 5 What is the usual seam allowance on a commercial pattern?
- 6 Why are notches included on pattern pieces?
- 7 Why should you pre-wash cotton fabric before cutting out?
- 8 Define the term *selvedge*.
- 9 How do you ensure the grainline is parallel to the selvedge when laying out pattern pieces?
- 10 Describe how you would construct a closed seam.
- 11 Why do you need to clip the crotch seam?
- 12 At what stage in construction should you fit your pyjama pants?
- 13 Draw a diagram to show how you would join elastic. Number the steps.
- 14 What are notions?
- 15 Why do we use tear-away stabiliser when stitching appliqué?

## Sewing with knit fabrics

Knits are relatively easy to sew and fit, and usually require less pressing and care than woven apparel items.

Due to the stretchy nature of the fabric, apparel made from knits is quite comfortable to wear. Knits are very versatile, and items created from knit fabrics can range from casual T-shirts, performance dance wear and sportswear to elegant evening wear made from stretch panne velvet.

Versatile knits can be used for diverse items, from baby grow suits to metallic print dance wear.



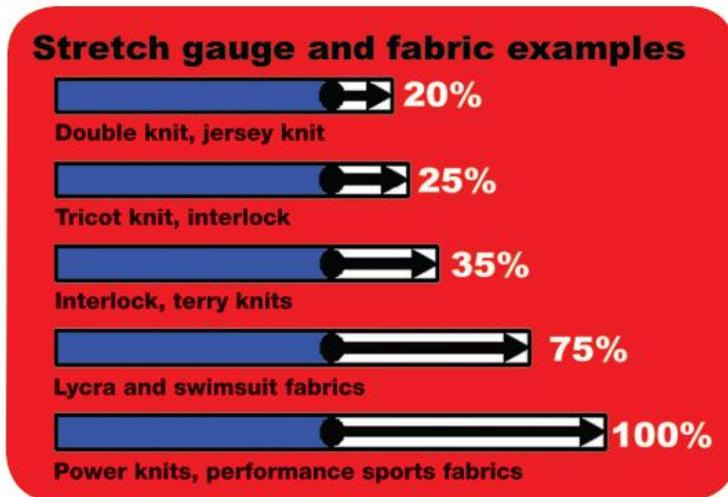
## Activity 2.9 The versatility of knits

- Create a collage that demonstrates the variety of apparel projects that use knit fabrics. Mount the collage on an A4 piece of cardboard.
- Select one item of clothing from your A4 collage and list the item's aesthetic and functional qualities.
- Conduct a survey of your own personal wardrobe and list all the items you possess that are constructed of knit fabrics.
- Create a list of reasons that people select clothing made from knit fabrics.

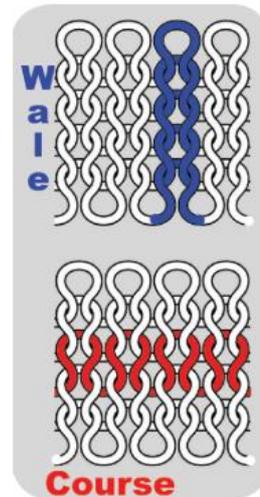
Knit fabrics are available in a wide variety of fibres: natural, synthetic and a combination of the two. Cotton/polyester is one common combination for knit fabrics.

Knit fabrics are made from interlocking looped stitches; they do not have lengthwise and crosswise yarns like woven fabrics. It is the interlocking loops of yarn that produce lengthwise ribs called **wales** and crosswise lines called **courses**. The properties and performance of knit fabrics are examined in more detail in chapter 13.

Knit fabrics can be one-way or two-way stretch. The degree of stretch varies from 20 per cent to 100 per cent; this is called the stretch gauge. It is important to select patterns which are designed for stretch knits only. These patterns require fabric that stretches a specific amount; the pattern envelope gives the degree of stretch.



Degree of stretch



Wales and courses

## Selecting patterns for knits

Patterns designed for knits usually have a smaller number of pieces and less shaping detail, making them quicker to sew. Pattern envelopes will usually be labelled with phrases such as 'Suitable for stretch knits' or 'For stretch knits only'. Remember to check the pattern envelope for suggested fabrics and the stretch gauge.

Patterns designed for stretch knits have less **ease** built in than patterns for stable knit and woven fabrics. **Facings** are often replaced by ribbing, binding, or turned and stitched neck and hemlines. Zippers are an appropriate closure; buttons and buttonholes need to be reinforced or used on less stretchy fabrics. This is due to the properties and performance and stretchy nature of knit fabrics. The majority of patterns designed for knits will include a stretch gauge on the back of the pattern envelope. If the pattern does not have a stretch gauge, it was probably designed for stable knit or woven fabric.

Swimsuits and dance wear, such as leotards, require knits with two-way stretch, such as lycra and cotton/lycra blends. These fabrics do not always stretch the same amount lengthwise and crosswise. If you are making a garment which requires two-way stretch there may be separate gauges for lengthwise stretch and crosswise stretch. As with all knits, the greatest amount of stretch should go around the body.

## Selecting knit fabrics

There are many types of knit fabrics to choose from, such as lycra, terry towelling, napped pile knits, tricot, raschel knits, single knit, double knit, interlock, jersey, tracksuit fleece, polar fleece, panne velvet and plush pile knits. They all exhibit varying amounts of stretch and – depending on fibre, yarn and fabric construction – exhibit different properties and performance.

Once you have selected a fabric, it is a good idea to check it for recovery after stretching. When the fabric is released, it should bounce back to its original size. If the fabric remains misshapen or distorted, it is likely to stretch out of shape very easily with handling and wear and will be more difficult to sew, launder and care for. This type of fabric should be avoided if possible.

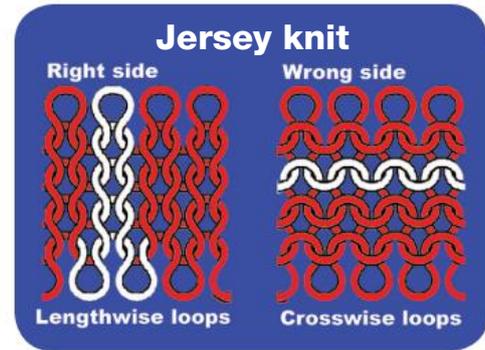
Prior to cutting out your pattern, it is a good idea to wash your knit fabric the same way you intend to launder the garment after it is constructed. This ensures that your fabric will be preshrunk.

## Layout, cutting and marking

Determine if the knit has a right and wrong side. Jersey and tricot knits have lengthwise ribs on the right side and crosswise loops on the wrong side.

Fold the knit fabric with right sides together, making sure that the wales and courses are at right angles to each other. You may be required to fold small sections at time or cut pieces out individually to make sure that all pattern pieces are cut 'on grain'. Many knit fabrics come in a folded length with a crease down the middle. If the lengthwise fold or crease remains after pre-washing and ironing, it is likely to be permanent. It is best to avoid the fold when cutting.

Lay out all pattern pieces going the same direction by following the 'with nap' layout. Use fabric weights or ballpoint, sharp or fine pins along seam allowances to secure pattern pieces for cutting. Be careful not to stretch the fabric while cutting. There are a variety of marking methods available for marking knits; they are much the same marking methods as used for woven fabrics. Marking methods such as ball-point pins, water-soluble marking pens and tailor's tacks (small cross-stitches without knots) are suitable.

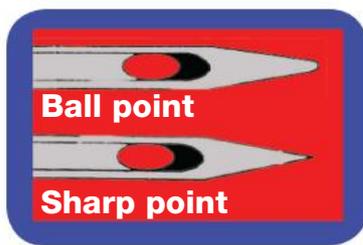


The right and wrong sides of jersey

## Notions for knits

When planning project work with knit fabrics, using suitable notions will help achieve the best results.

- **Pins.** Ballpoint pins are an appropriate choice for use on knit fabrics. The rounded points on these pins separate the yarns instead of piercing them, which creates holes in the fabric.
- **Machine needles.** Ballpoint needles or specialist stretch needles that have a rounded tip help eliminate snagging and work well to prevent skipped stitches. Needles come in a variety of sizes from 60 to 90. Needle size will depend on fabric weight: the finer the fabric, the smaller the needle should be. Twin stretch needles come in various widths and are great for topstitching hems.



The difference between sharp needles and ball-point needles



Suitable needle types for knit fabrics

- **Thread.** When sewing lightweight knits, use extra-fine polyester or polyester/cotton thread; for medium-weight knits use polyester or polyester/cotton thread. Using a textured nylon thread, such as woolly nylon, in the bobbin to sew a seam or in the overlocked finish makes the seam or overlocking more elastic. It is a good idea to wind the bobbin slowly to prevent the thread from stretching, as this can cause puckered seams in the finished project.
- **Elastic.** Elastics differ in stretch and recovery characteristics. Non-roll elastic is appropriate for pants and skirts. Clear elastic works well when topstitched. It can stretch up to four times in length and is an appropriate choice for dance wear and costuming. Elastic used in swimwear should be chlorine resistant.
- **Interfacing.** The option of interfacing is determined by the weight, stretch and design area of the fabric, and the function and end use of the project. More than one type of interfacing may be needed within the same garment. Select interfacings such as a fusible tricot or a stretch non-woven interfacing to stabilise areas such as necklines, collars, cuffs, plackets and buttonholes. Consider the functions of the interfacing, such as weight and stretch, and care requirements of the knit as well as aesthetic requirements. Interfacings can also be used to stabilise areas of appliqué or decorative features on your knit project.
- **Machine feet.** A roller presser foot, used on double knits, will not stretch the top layer of fabric and will keep seams even.

## Finishing knit fabrics

The overlocker can be used alone or as a supplement to your conventional sewing machine as a fast, efficient and functional way to sew knit garments. Seam allowances in the project below are 1.5 cm unless otherwise indicated. If you use a zigzag stitch on a sewing machine, use a narrow stitch with medium length; trim the seam to 6 mm and overlock or zigzag the edges together. If you use a straight stitch, stretch the fabric as you sew (unless you are working on a firm double knit) and sew seams two or three times close together.

### Seams

The three-thread overlock is ideal for major seams, such as shoulder, side, underarm and sleeve seams. For stress areas such as crotch seams and armholes, the four-thread overlock/safety stitch is best; or you can use a three-thread overlock and stitch along the seam with a conventional sewing machine to reinforce it.

### Edge finishes

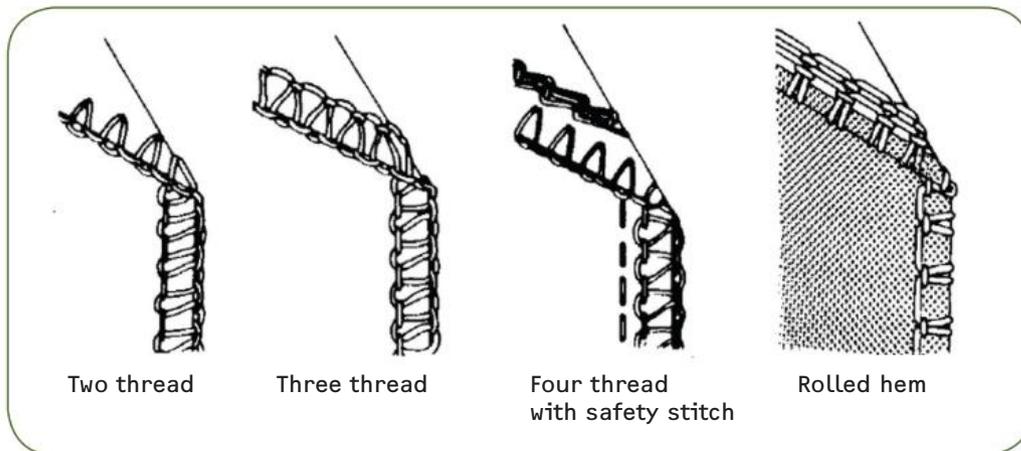
The two- or three-thread overlock stitch is a perfect finish for edges of facings and hems, and is a fast, easy finish for seam allowances in unlined garments where seams are pressed open.

### Rolled hem

The rolled hem is a great choice for contemporary fashion garments. A rolled hem is a narrow hem alternative for finishing circular skirts, ruffles, shawls and lingerie. See your sewing machine manual for instructions. Lettuce edging is achieved by using a rolled hem that is close together in stitch size. By changing your differential feed and stretching the fabric slightly as you feed the edge through, you can create a curly edge finish.

### Machine finishes

If you do not have an overlocker, you can use a series of stitches (such as zigzag, serpentine or specialist stretch stitches unique to individual machine types) or a double row of stitching.



Types of overlocking finishes suitable for knit fabrics  
Courtesy of Simplicity Pattern Co. Inc.

## Project 2.2 Classic hoodie

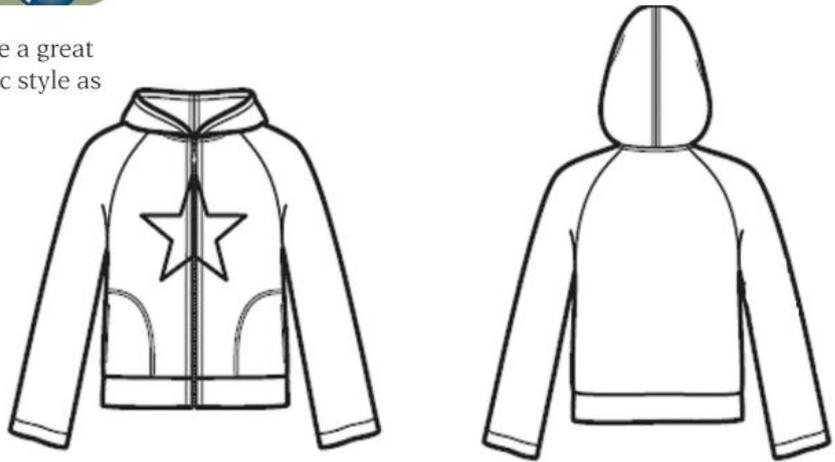
**Suggested duration:** 8 weeks

**Task:** Design, produce and evaluate an apparel item made from knit fabric that is suitable for casual weekend wear. You will purchase a commercial pattern for your top and decide which style to make. You might make a sleeveless vest style for summer or a top with full-length sleeves for autumn or spring.

# Designing



Designing ideas for your project can be a great deal of fun, especially for such a classic style as this hoodie (Simplicity pattern 3702).



Trade sketch of Simplicity hoodie (pattern 3702)  
Courtesy of Simplicity Pattern Co. Inc.

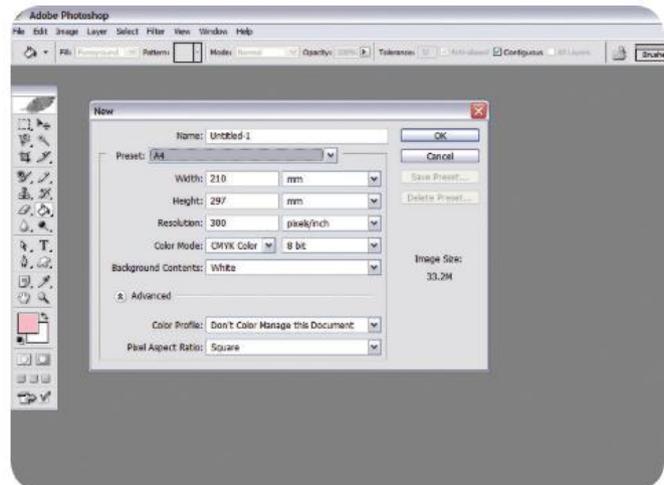
## Activity 2.10 Rendering in Adobe Photoshop



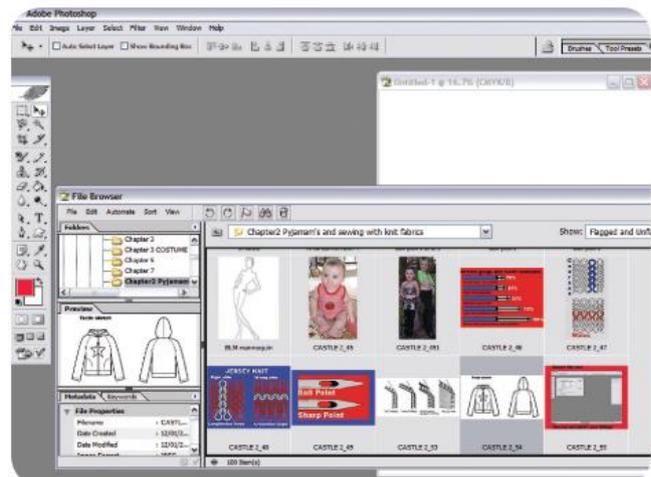
Scan your own illustrated model template using a resolution of 300 dpi.

Follow these screenshots to trial some basic rendering skills.

1 Set the art board by selecting File, then New. Choose A4 size (210 mm x 297 mm), as you can print this on any basic home printer. Select CMYK for colour printing and a resolution of 300 dpi. This will ensure a quality printed document. Make sure you title your illustration.

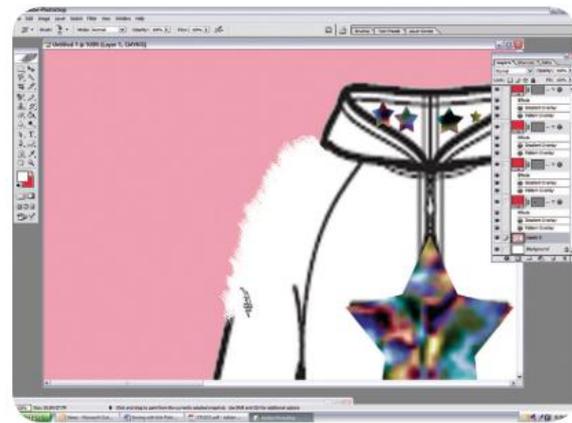
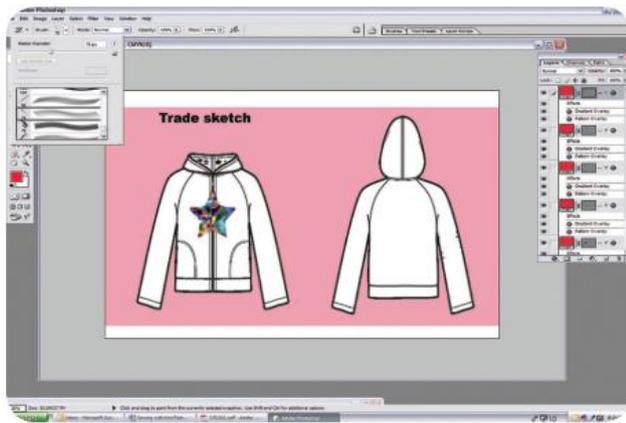
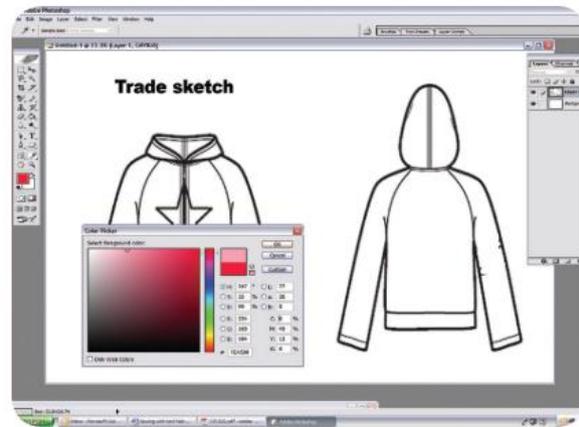


2 Obtaining the scanned photo to put onto the art board is as simple as selecting File, then Browse, then navigating to your scanned folders. Select the image you wish to use and double click the image. It will come up as a separate file. Select the move tool, which is the arrow icon in the top right of your tool box or control panel, and click and drag your scanned template onto the art board.



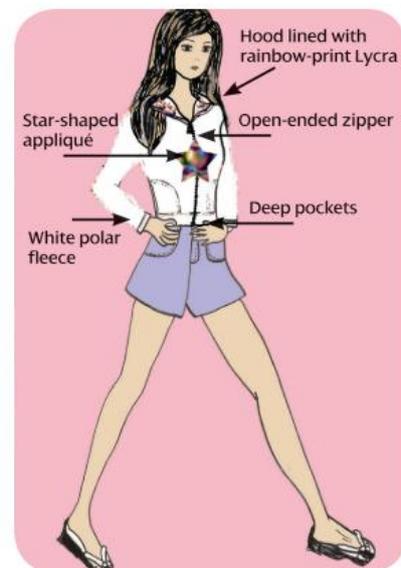
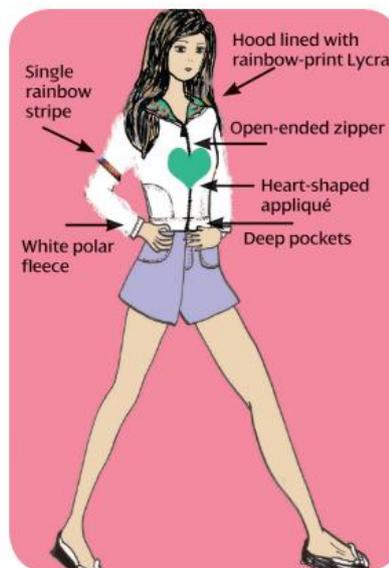
3 Using the paint and fill icon in your tool box, select a colour from the colour palette and fill the background of your art board. In this screenshot the free-form shape tool was selected and a textured pattern was used to fill the star-shaped appliqué.

4 Using special-effects brushes can really enhance your rendering. There are many brushes that have been designed specifically for rendering texture. In this screenshot a feathery texture brush was selected to mimic the softness of the polar fleece which the designer intends to use for this project.



## Generating and developing ideas

When developing ideas for your hoodie it is possible to create many and varied designs in Photoshop quite quickly. Rendering a progression of design ideas means you can assess each design, evaluating the functional and aesthetic details. This will help you make your final decision about which design you want to create.



Design progression for hoodie

# Producing



After you have selected the design for your textile project you will need to purchase a commercial pattern for the knit fabric garment. Take accurate body measurements so you know what size pattern to purchase (see page 26 for instructions). Consider carefully the selection of fabric that you require to complete your project successfully. Ensure that you also check the stretch gauge so that you buy appropriate fabric for your project.

## Selecting the fabric

Selecting fabric is very satisfying; it is often the choice of fabric that adds to the success of the project. Fabric selection is a very personal choice and is often based on colour, shine, softness, **lustre** or **drape**.

The fibre content of a fabric will determine the comfort of the garment when you wear it, and how you will need to care for the garment. The fibre content should be on a swing tag at the end of the cardboard roll that the fabric is displayed on. If purchasing fabric from a website, the information should be displayed with the fabric. When you purchase fabric from a shop, ask the sales staff if they know the fabric fibre and fabric type. If you find fabric with an unknown fibre content, it can be tested by a simple burning test. See chapter 11 for information on how fibres burn. A burning test should only be attempted under supervision in a well-ventilated classroom.



The project work in this activity is a hooded jacket which can be made from polar fleece. To learn more about selecting fleece fabric, take a tour of the fleece section on the Stitch 'n Save website.

## Activity 2.11 Selecting the right fabric for your project

Prior to purchasing your fabric consider the following questions. It may be useful to make notes.

- What is the intended end purpose of your garment? Where will it be worn?
- Does the fabric have a care label on the end of the roll? Write down the fibre content and how the fabric is to be laundered.
- Examine the fabric for flaws, colour uniformity and overall quality. If the fabric has a printed surface, check that the print has been registered carefully; that is the print is aligned with the grain of the fabric.
- Look at the fashion figures on the front of the pattern envelope and decide if any of the views require drape. To test for drape in the fabric store, roll some of the fabric off and drape it over your arm to see how it falls.
- Test the fabric for excessive wrinkling by scrunching a handful of fabric. Hold it for about 30 seconds, then release the fabric to see how easily it creases.
- Pull the fabric in both directions along and across the grainline of the fabric. Does the fabric return to its original shape?

## Laying out the pattern

The guide sheet will tell you which pattern pieces you require for your design and how you should lay out the pattern pieces. Remember to pre-wash your fabric to ensure the fabric shrinks prior to sewing.

## TEENS / ADULTS

### A SWEATSHIRT

USE PIECES 1 2 3 4 5 6 7  
PIECE 8 IS OPTIONAL  
PIECE 8 IS CUT OF CONTRAST FABRIC AND INTERFACING REMNANTS  
SEE SEWING DIRECTIONS FOR CUTTING

#### Cutting Layouts

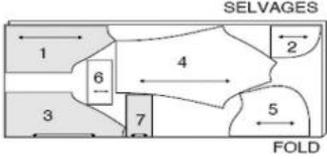
pattern printed side down

 pattern printed side up

★ See SPECIAL CUTTING NOTES

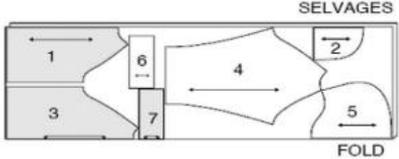
POSITION OF PATTERN PIECES MAY VARY SLIGHTLY ACCORDING TO YOUR PATTERN SIZE

**6A** 58" 60" (150CM)  
WITH NAP  
SIZES XS S M



SELVAGES  
FOLD

**6B** 58" 60" (150CM)  
WITH NAP  
SIZES L XL



SELVAGES  
FOLD

Cutting layout. Courtesy of Simplicity Pattern Co. Inc.

## Method

- 1** Identify the selvedge and the cut edge of the fabric so you know which way to fold the fabric.

**2** Cut all notches outward to ensure seams will line up.
- 3** Transfer all pattern markings, including dots and any other placement marks, with your preferred method of marking. To ensure the grain line is parallel to the selvedge, you will need to measure each end of the grain line so it is the same distance from the selvedge.
- 4** Place the pins approximately 10 cm apart, but always place pins in the corners.

**5** Using dressmaker's shears, cut around the pattern pieces.

## Constructing the hoodie

## Method

- 1** Begin with the appliqué. Apply a fusible interfacing remnant to the wrong side of an appliqué fabric remnant, following the manufacturer's directions.



Applying interfacing to fabric for appliqué
- 2** Cut the appliqué tissue block from the pattern along the outer solid line. Pin the pattern piece to the right side of the prepared fabric remnant.
- 3** Cut out the appliqué pattern from the prepared fabric. Transfer the markings from the pattern to the right side of the appliqué using your preferred method.



Applying the design
- 4** Pin the wrong side of the appliqué to the right side of each matching small dot on the front section of the jacket panels, keeping the raw edges even. Zigzag stitch along the outer raw edges with SL 3 and SW 3. **Baste** the inner raw edges.
- 

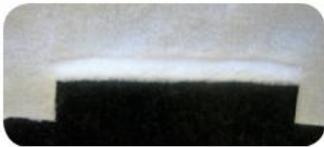
Stitching the design

**5** To reinforce the side edges of the front section between the large dots, stitch 1.5 cm from the raw edge for about 2.5 cm beyond large dots, stitching through the large dots as shown in the pattern. Clip to stitching at reinforced large dots.



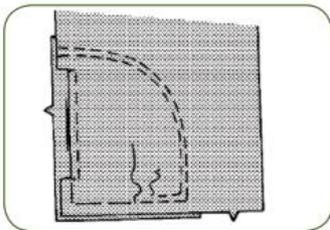
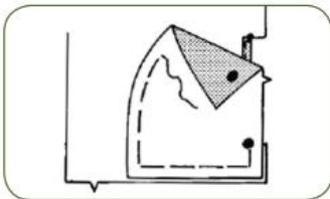
Clipped edges for pocket opening

- 6** To form the pocket opening, press the clipped section of the side edges to the inside along the stitching. You will need to press 6 mm of fabric under on the raw edge. On the outside, topstitch 6 mm from the finished edge.



Topstitched pocket opening

- 7** Pin the right side of the pocket to the wrong side of the front, matching the large dots and keeping the raw edges even. Baste the pocket in place 1.5 cm from the side and curved edges, as shown. Baste close to lower edge of pocket.
- 8** On the outside, top-stitch around the curved edge along the line of basting and then stitch another line 6 mm away.



- 9** Sew the side seams.

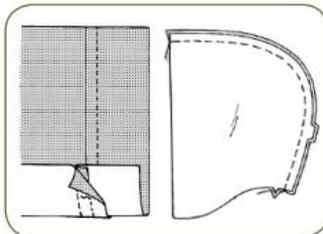
- 10** Stitch the underarm seams.

- 11** Turn the first sleeve right side out. Hold the garment wrong side out with the armhole toward you. With the right sides together, pin the sleeve to the edge of the armhole, matching the underarm seams.



- 12** Stitch the centre back seam of the hood in a welt seam. This type of seam is decorative and is good for heavyweight fabrics to reduce bulk and hold seam allowances flat. Stitch a plain seam and press both seam allowances to one side. Trim the underneath seam allowance so it is barely 6 mm wide. From the outside, top-stitch 6 mm from the seam line, catching the untrimmed seam allowance on the underside.

- 13** Stitch the hood facing in the same manner as the hood. Pin the hood to the facing with right sides together, matching the seams and keeping the raw edges even. Stitch the outer edge and trim the seam.



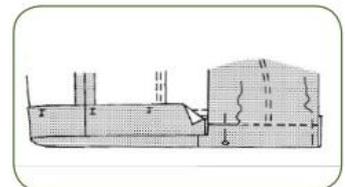
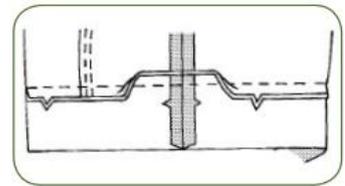
- 14** Turn the hood to the right side and press. Baste the raw edges. Top-stitch 6 mm away from the finished edge of the hood.

- 15** With the right sides together, pin the hood to the neck edge of the garment, matching centre backs, placing the ends of the hood at

the large dots on the garment and keeping the raw edges even. Stitch.



- 16** Stitch the front band to the back band at the side seams. With right sides together, pin the band to the lower edge of the garment, matching the centres and keeping the raw edges even. Stitch, stretching the band to fit. Press the seam toward the band. Fold the band along the fold line with the wrong sides together. On the inside, pin the band over the seam, placing pins on the outside.



- 17** On the outside, **stitch in the ditch** of the band seam, stretching the band to fit and removing pins as you come to them. Baste the raw edges.



Ditch stitching the band

**18** On the outside of the garment, pin the closed zipper to the right front section, with the zipper face down. Place the zipper tape about 6 mm from the edge of the front and taper the upper end of the zipper at the large dot, as shown in the pattern. Using an adjustable zipper foot, machine-stitch the zipper in place, sewing 1.5 cm from the front edge. **Tip:** To avoid bumpy stitching around the tab and slider, stop stitching just before you get to the slider. Leaving the needle in the fabric, raise the presser foot and pull the slider down below the needle. Then lower the presser foot and continue stitching.



Zipper placement

**19** Unzip the zipper and place the remaining half of the zipper face down on the remaining front section. Place the zipper tape about 6 mm from the edge of the garment and taper the upper end of the zipper at the large

dot, as shown. Make sure that both sides of zipper are aligned. Using an adjustable zipper foot, stitch the zipper in place, sewing 1.5 cm from the front edge.



Zipper insertion

**20** Turn the zipper and the zipper tape to the inside. Baste close to the remaining edge.

**21** On the outside of the garment, top-stitch as basted. Stitch the twill tape to the remaining half of the zipper in the same manner.

**22** On the inside of the hood, pin the inner edge of the twill tape along the stitching over the hood seam allowance. Turn the ends of the tape under at the front opening edge. Stitch the inner edge in place, as shown. Trim the seam allowance on the hood and neck edge, being careful not to trim the tape.



Attaching twill tape

**23** Turn the twill tape over the neck seam and press, pressing the hood out. Baste close to the remaining edge of the tape, ending at the front opening. On the outside of the garment, top-stitch as basted.



Finished hoodie

## Care Labelling

You invest a great deal of time and money in creating your textile projects, so it is only fitting that you spend time researching the best way to care for your garments. Activity 2.12 (on page 46) will help you to begin to understand the importance of garment care.



To find out more about fabric care, go to the fabric care section of the Fabriclink website. You can also visit the laundry section of the Soap and Detergent Association website.



Fabric care symbols and their meanings

## Activity 2.12 Creating a swing tag and care label



- 1 Write a brief description of your project and give your project work a name or label. You may like to call it after yourself or make up a new fashion line name.
- 2 Identify the inspiration behind your design.
- 3 Use Photoshop to create a swing tag design based on your inspiration.
- 4 What type of fabric did you buy? What is the fibre type? Add this information to the label.
- 5 Research the care of this fabric, including laundering and pressing, and create a care label.
- 6 Identify the care symbols that will help you care for your garment. Add this information to the label.
- 7 How much did your project cost? Itemise the costing and set a price for your garment.



### Care Instructions 100% Polyester

Warm gentle machine wash  
Wash with similar colours  
Do not bleach  
Dry in shade  
Warm iron  
Drycleanable (P)

## Activity 2.13 Evaluating

- 1 Evaluate your completed project. Comment on effectiveness of the design (function and aesthetics), quality of production and suitability of the fabrics and notions.
- 2 If you were to create the project again, what modifications would you make? Why?
- 3 Take a photograph of you wearing your weekend wear.
- 4 Using the four P's – product, price, place and promotion – create an advertisement featuring your design. Include your label name, the care requirements and the price. See page 286 for more information on the four P's.
- 5 Print your advertisement and hand it in to your classroom teacher for evaluation.



Sample advertisement

## Activity 2.14 Quick quiz

- 1 Name six stretch knit fabrics.
- 2 What is a stretch gauge?
- 3 Explain the term *overlock*.
- 4 What needles are best to use when sewing knit fabrics? Why?
- 5 How can you distinguish the right and wrong sides of a jersey knit fabric?
- 6 Name two notions suitable for knit fabrics.
- 7 Name two types of seam finishes appropriate to finishing stretch knit garments.
- 8 Sketch two alternative designs for the hoodie project, mount them on presentation board and render them in Photoshop.
- 9 Describe how you would construct a welt seam.
- 10 Why is it important to know the fibre and fabric of your chosen material?

# 3

## Project work focus area: furnishings

### Outcome, knowledge and skill statement

#### Outcomes:

- 5.4.1 selects and uses appropriate technology to creatively document, communicate and present design and project work
- 5.5.1 critically selects and creatively manipulates a range of textile materials to produce quality textile items
- 5.5.2 selects appropriate techniques and uses equipment safely in the production of quality textile projects
- 5.5.3 demonstrates competence in the production of textile projects to completion
- 5.6.1 evaluates textile items to determine quality in their design and construction

#### Students learn about:



##### Designing

- Generating and developing design ideas
- Communication and presentation of design ideas



##### Producing

- Simple pattern production
- Calculating textile requirements
- Sequencing of construction for a textile item



##### Evaluating

- Evaluating the quality of textile items

## Focus area: furnishings

**Furnishings** include quilt covers, bed linen, cushions, curtains, lampshades, beanbags, table linen and chair coverings. You can purchase commercial patterns for furnishing items but often it is easier to create your own pattern to meet the specific needs of the project. Furnishing items are functional textile products, as they are used in the home or work area or on a boat to meet a particular need.



Outdoor furnishings

Bedroom furnishings

Lounge furnishings

Bathroom furnishings

## Activity 3.1 Furnishings

Observe the images above and list ten furnishing items made from textile materials. Discuss your list with another class member. If you did not identify the same items, add to your list. Next, list two textile properties that are required for each item. (Refer to chapter 13 for textile properties.)

## Project 3.1 Floor cushion

**Suggested duration:** 6 weeks

**Task:** Design, produce and evaluate a furnishing item suitable for use as a floor cushion. A simple pattern will be created using the step-by-step instructions in this chapter. Woven, medium-weight fabrics are suitable for the cushion. Drill is an excellent fabric to use as a backing fabric, as it is strong and hardwearing. Refer to chapter 13 to find out more about the properties of drill.

A number of printed or plain cotton fabrics will be required for the appliquéd circles. Before you purchase the fabrics for the circles you will work through a number of design activities to help you select the most appropriate colour scheme and design for the floor cushion.



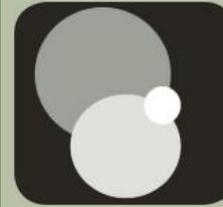
Floor cushion

# Designing



Elements of design, such as **colour**, **shape**, **line** and **texture**, will be used as a source of inspiration to develop the furnishing project.

**Colour** is one of the most important elements of design. Colours appear when light waves are reflected and absorbed by objects.

Monochromatic colour schemes use shades or tints of one colour.	Analogous or harmonious colour schemes contain colours next to each other on the colour wheel.	Complementary colour schemes are made from colours opposite each other on the colour wheel.	Triad colour schemes contain three colours that are evenly spaced on the colour wheel.	Achromatic colour schemes only use black, white and grey tones.
				
Monochromatic colour scheme	Analogous colour scheme	Complementary colour scheme	Triad colour scheme	Achromatic colour scheme

## Activity 3.2 Colour scheme

This activity can be completed using a software program, for example Photoshop or a drawing program, or using paper and coloured pencils. The advantage of computer aided design (CAD) over paper and pencil is that the computer program allows you to develop one design and then fill with different colours or patterns to create the selected colour schemes.



- 1 Draw three squares, 10 cm x 10 cm.
- 2 Draw three circles in each square, using the same layout each time. Only circular shapes will be used for this project, as they are easier to satin stitch around. You will not have to worry about turning corners accurately.
- 3 Select a different colour scheme for each design.
- 4 Evaluate each design using a PMI to select the preferred colour scheme for your floor cushion.

**Shape** is a closed line. Your floor cushion will consist of geometric shapes. The cushion back will be a square 80 cm x 80 cm and the front will consist of four squares 40 cm x 40 cm. On each of these squares there will be three circles. When you create your designs, remember that the smaller the circle is, the more difficult it will be to stitch around.

## Activity 3.3 Shape

This activity can be completed using a software program, for example Photoshop or a drawing program, or you can use paper and coloured pencils.

- 1 Draw three squares 10 cm x 10 cm.
- 2 Draw three circles in each square to create an aesthetically pleasing design. Experiment with the size and placement of the circles.
- 3 Render your designs using the selected colour scheme from activity 3.2.
- 4 Evaluate each design using a PMI to select your preferred design for each square of the floor cushion.
- 5 Complete a presentation drawing for your selected design. Label all design features and include measurements.
- 6 Justify the selection of the final design; include comments on the colour scheme selected and the design features.



The elements of **line** and **texture** will also be evident in the floor cushion. Line, in the form of satin stitch, will outline each circular shape. Lines of decorative machine stitching will be used to **quilt** the surface of the floor cushion. Texture refers to the surface characteristics of the design. The fabrics used in the floor cushion will create both visual and tactile texture. When you look at the cushion you might think the fabrics look smooth or shiny. When you feel the cushion it will create a tactile texture, especially if you fill the cushion with beanbag beans.

## Producing



### Fabric and notion requirements

- 90 cm of backing fabric (plain colour)
- 50 cm each of four different print or plain fabrics. These will be used for the four squares, and the left-over fabric will be used for the circles. If you wish to use more than four types of fabric on the cushion front you will need to buy more fabric.
- 1.6 m fabric for cushion insert; calico is suitable, as no-one sees the insert
- 80 cm paper-backed fusible web
- 80 cm iron-on tear-away stabiliser
- 80 cm iron-on **Pellon**
- polyester thread in matching colour to fabric selected
- one 40 cm zipper
- one universal machine needle, size 80
- beanbag beans or fibre fill
- rayon embroidery thread

**Note:** A cushion insert is required for safety reasons and for convenience, as you do not want the beans to fall out if you open the zipper.

## Cutting and preparation

Remember to cut all pieces on the straight grain of the fabric. The seam allowance is 1.5 cm.

### Method

- 1 Remove the selvedge before cutting the fabric pieces.
- 2 Cut two pieces of backing fabric 43 cm x 83 cm.
- 3 Cut two pieces of cushion insert fabric 80 cm x 80 cm.
- 4 Cut four pieces of cushion front fabric 43 cm x 43 cm.
- 5 Trace the circle shapes onto the paper side of the fusible web. If you do not have a large compass, use different size plates to create the circles. A dinner plate is the right size for a large circle, a bread and butter plate for a medium circle and a saucer for a small circle.

Look around the classroom; you might find other items that are suitable to use; for example, a reel of sticky tape is a circle.

- 6 Iron the fusible web circles to the wrong side of the selected fabrics and cut out the circles.



- 7 Peel off the paper backing and iron the shapes onto each of the 43 cm x 43 cm squares. Make sure all circles are at least 2 cm from the edge of the square, unless a feature of the design is sections of a circle.



- 8 Iron tear-away stabiliser to the wrong side of the square.

## Construction of the floor cushion

### Method

- 1 The first step is to satin stitch around the circle shapes. If possible select a rayon embroidery thread as it has lustre and will create a more appealing final product.



- 2 The same colour thread can be used throughout the design, or a number of colours may be used. If a similar colour to the fabric is used it will blend in and will not be so noticeable. If a contrast colour is selected it will stand out and be a feature of the final product. Never use rayon embroidery thread in a bobbin, as it is a weak yarn and too expensive for this use. Bobbin Fil is perfect to use on a bobbin, as it is a fine yarn and a greater amount can fit on the bobbin, which will not have to be wound as often.
- 3 The length of the satin stitch should be approximately 0.5 but this will depend on the sewing machine you are using. Always test the satin stitch using fabric backed with tear-away stabiliser.

You may need to reduce the stitch length to achieve a satin stitch with good coverage; this means the stitches are close together so no fabric is visible between them. The width of the satin stitch will depend on the size of the circle. For the large circle shape use a stitch width (SW) of 3, for medium circles SW 2.5 and for small circles SW 2. When you position the fabric under the presser foot, three-quarters of the width of the satin stitch should be on the circle and one-quarter should be on the backing fabric. If possible use a clear presser foot or an open-toed presser foot so you can see the edge of the circle.

- 4** Start from the circle in the background and stitch around the part of the circle that is visible. As the circles are overlapping you will not need to stitch around the entire circle. Stitch the middle circle and then the circle in the foreground. Do not reverse; leave the threads long, use a needle to pass the threads to the wrong side and tie a knot.



- 5** Remove all tear-away stabiliser from the back of the square.
- 6** Iron Pellon to the wrong side of each square.
- 7** Using rayon embroidery thread, quilt each square with three rows of decorative machine stitching. Make sure you select an open stitch. Do not select a dense stitch, such as satin stitch, as it takes too long to sew and will be difficult to stitch through the thickness of the Pellon.



- 8** Pin two squares together along one side to form a rectangle. Using polyester machine thread and straight stitch with SL 2.5 and SW 0, stitch the squares together and reverse at the ends to secure the seam. Repeat the process for the remaining two squares.



- 9** Press the seam allowance open. This is called an open seam and creates less bulk than a closed seam.



- 10** Now join the two strips together.

- 11** Press the seam allowance open.
- 12** The front of the cushion is now complete.

- 13** Overlock neatens the centre back edges of the cushion back.

- 14** Using the same zipper application as for the kit bag (steps 4 to 10, page 19), stitch the zipper to the centre back of the cushion. Remember, you will need to measure 20 cm each side of the centre as the zipper in the cushion is 40 cm long.

- 15** Open the zipper before placing the right sides of the cushion back and the cushion front together. Pin the edges together, then straight stitch around the cushion edge with SL 2.5 and SW 0. Overlock neatens the edges.

- 16** Cut across the corners to remove bulk from the seam allowance, and turn the cushion through to the right side. Push out the corners of the cushion so there is a nice sharp point.



## Construction of the floor cushion insert

### Method

- 1** Place the two sides of the cushion insert right sides together. Pin around the insert.
- 2** Using a straight stitch with SL 2.5 and SW 0, stitch around the cushion insert, leaving a 30 cm opening to fill the insert with beans or fibre fill.
- 3** Cut across the corners to remove bulk from the seam allowance and turn the insert through to the right side. Push out the corners.
- 4** With a friend's help, fill your insert with beans or fibre fill. If you fill your insert too full you will not be able to fit it in your cushion. If you wish to have a very full cushion, place the insert inside the cushion and then fill it.
- 5** Slip stitch across the opening.
- 6** Place the insert inside the floor cushion, if you have not already done so.



Finished floor cushion

# Evaluating



## Activity 3.4 Reflective journal

- 1 Name the type of colour scheme you selected for the floor cushion.
- 2 How effective was the selected colour scheme?
- 3 What improvements to the colour scheme could be made? Why?
- 4 Are you pleased with your overall design using the circle shapes? Why?
- 5 Did you have any difficulties stitching your design?
- 6 How did you incorporate the element of line into your floor cushion?
- 7 List two words which describe the texture of your floor cushion.
- 8 Final comments: Did you enjoy the project? If you completed it again, what changes (if any) would you make?

## Activity 3.5 Quick quiz

- 1 Why is drill a suitable fabric for a floor cushion?
- 2 Name four elements of design.
- 3 Define the following terms: *complementary colour scheme*, *render*, *texture* and *tactile*.
- 4 Identify four geometric shapes.
- 5 What is the function of fusible web when completing appliqué?
- 6 Why is rayon embroidery thread not suitable for use in the bobbin?
- 7 When stitching satin stitch, what percentage of the stitch is on the appliqué fabric and what percentage is on the background fabric?
- 8 What type of presser foot should you use when completing satin stitch?

## Project 3.2 Art quilt

**Suggested duration:** 6 weeks

**Task:** Design, produce and evaluate a furnishing item suitable for use as an **art quilt**.

An artist uses paint and brushes to portray an image, while a textile artist uses fibres, yarns, fabrics and a sewing machine to portray an image. An art quilt is usually hung on a wall as 'art', whereas a quilt is usually placed on a bed.

When we think of art, we usually think of something that is aesthetically pleasing. An artwork is valued, and people enjoy looking at it and admiring its qualities. An art quilt can incorporate any number of techniques, including free-motion embroidery, appliqué and beading, but to be called an art quilt it must contain a minimum of two layers, and often three: a face or front layer, a back layer and an internal layer of wadding, batting or Pellon to add dimension to the quilt.



Art quilt: *Nature's bouquet*  
Courtesy of McKenna Ryan,  
LLC, at [pineneedles.com](http://pineneedles.com)

# Designing



## Flower art quilt

### Sources of inspiration

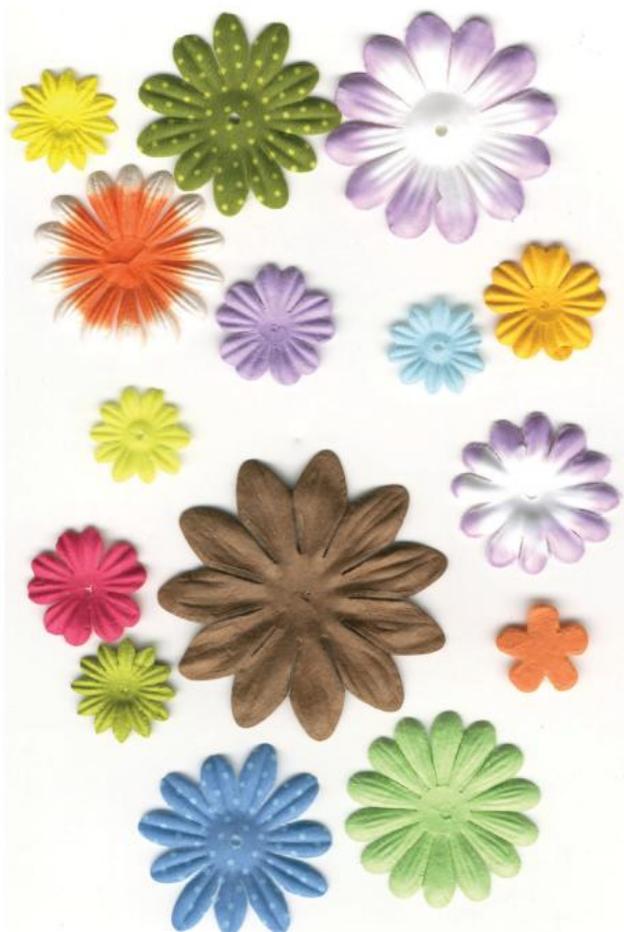
Nature provides inspiration for a diverse range of textile projects. Flowers come in many different shapes, sizes and colours. They can be used as the inspiration to create colourful and appealing art quilts. Silk or paper flowers are a quick and easy way to incorporate flower shapes into art quilts. They can be purchased at many fabric stores or scrapbooking suppliers.

Due to the detail required, an art quilt is usually small in size compared to a bed quilt. The art quilt featured in this section is 30 cm x 30 cm.

### Generating and developing ideas

In previous projects you have used pencil and paper to create design ideas. The art quilt design may evolve as you are working on the quilt; but of course you will need to first select a colour scheme, suitable fabrics, including a front fabric, backing fabric and chiffon scarf, and a range of paper or silk flowers.

Medium-weight woven fabrics are suitable for art quilts. A chiffon scarf in a similar colour to the front fabric is also required. Chiffon scarfs can be found at op shops like St Vincent de Paul, or can be purchased in a full range of colours from the Thread Studio.



Silk and paper flowers



The Thread Studio is a mail-order business that is based in Australia, but sells worldwide. They specialise in unusual and interesting embroidery threads and textile art requirements. The Thread Studio also has a gallery that features the work of textile artists from Australia. Visit their website for invaluable information and hints. They also list many art-related sites in the links.

# Producing



### Materials list

- 35 cm medium-weight cotton fabric (batik patchwork fabric was used in the project shown opposite)
- 35 cm iron-on Pellon
- 35 cm chiffon, in a matching colour to the background fabric
- an assortment of paper or silk flowers
- rayon or metallic machine embroidery thread
- 30 cm quilt hanger

## Method

- 1 Once you have selected the front fabric, cut a square 32 cm x 32 cm. This allows for the 1 cm seam allowance.
- 2 Cut a square of iron-on Pellon 32 cm x 32 cm and iron it to the wrong side of the front fabric. When you complete the free-motion stitching, the Pellon will add dimension to the art quilt.
- 3 Once the fabric is backed with Pellon you can start to experiment with the positioning of the flowers. Remember to keep the flowers at least 2 cm from the edge of the fabric. You can lay small flowers on top of large flowers to create contrasting centres.



Final placement of flowers

- 4 When you are happy with the placement of the flowers, cover them with chiffon. This will protect the flowers.



- 5 Pin or tack the flowers and scarf into position.



- 6 Use free-motion embroidery to stitch the centres of the flowers and fill the spaces between the flowers. (Detailed instructions on free-motion stitching can be found on pages 188-9.)

It is important to use the correct machine needle for the thread type. Machine embroidery needles have a slightly rounded point and a slightly larger eye to avoid damage to thread and materials. Use with metallic and other specialty threads for decorative machine stitching.



Machine embroidery needles  
Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines) [www.husqvarnaviking.com](http://www.husqvarnaviking.com) and [www.pfaff.com](http://www.pfaff.com)

Top-stitch needles have a very large eye, which makes them the ideal choice for machine embroidery with thicker machine threads.



Top-stitch needles  
Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines) [www.husqvarnaviking.com](http://www.husqvarnaviking.com) and [www.pfaff.com](http://www.pfaff.com)



- 7 Using free-motion stitching, create the centres of the flowers.



Completed flower centres



Rayon thread selection

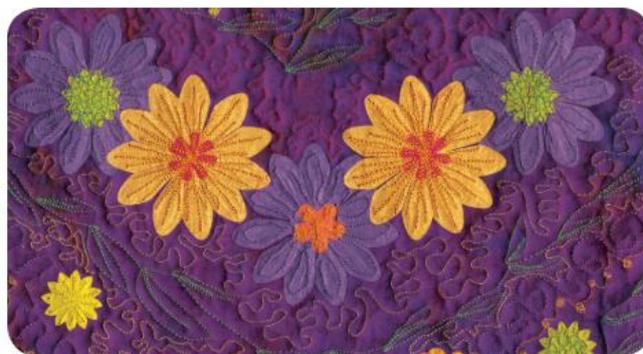
- 8 Choose a selection of metallic or rayon machine embroidery threads, and use them with free-motion stitching to fill the space between the flowers.



Detail of free-motion stitching

Once all the detail is complete, you will need to decide how you will hang the quilt. The following instructions explain two methods.

Detail of free-motion stitching



## Quilt hanger

### Method

- 1 Cut the backing fabric the same size as the art quilt front (32 cm x 32 cm).
- 2 Cut two strips 8 cm x 4 cm. These will make the fabric loops to attach the art quilt to the quilt hanger.
- 3 Fold each strip in half with the long sides together. Stitch 1 cm from the edge using straight stitch with SL 2.5 and SW 0. Reverse to secure the seam.



- 4 Using a loop turner, pull each strip through to the right side.
- 5 Press so the seam is in the middle of the underside of the loop.
- 6 Divide the top edge of the art quilt evenly into four sections.



- 7 Pin the fabric loops 1/4 and 3/4 of the way along the quilt. Stitch to the art quilt front.



- 8 With right sides together, pin the backing fabric to the art quilt front. Make sure the fabric loops are inside the two layers of the art quilt.
- 9 Stitch around the art quilt, starting from the bottom edge. (Remember that the seam allowance is 1 cm.) Leave a 10 cm opening in the centre of the bottom edge. This opening will allow you to pull the quilt through to the right side.
- 10 Cut across the corners to remove the bulk from the seam allowance, then pull the quilt through to the right side.
- 11 Press the art quilt using a warm iron.
- 12 Slip stitch across the 10 cm opening.
- 13 Wrap the fabric loops around the quilt hanger.



- 14 Cut the loops to the desired length, leaving a 2 cm hem allowance.
- 15 Fold over the raw edge of the fabric loop and hand stitch into place.



Finished quilt and hanger

## Casing

### Method

- 1 Cut the backing fabric the same size as the art quilt front (32 cm x 32 cm).
- 2 Cut a fabric strip 6 cm wide and 28 cm long. This strip will be used to create the casing.
- 3 Press over 1 cm on each of the short edges of the fabric strip. Using straight stitch with SL 3 and SW 0, stitch close to the folded edge.
- 4 Lay the casing strip 4 cm from the top edge of the fabric backing. Measure carefully to ensure the casing is placed an even distance from the sides of the art quilt.



- 5 Stitch along the casing fabric using a 1 cm seam allowance. Reverse to secure the seam.
- 6 Fold the casing over and press into place. The casing edge should now be in line with the top edge of the backing fabric. Stitch in place.
- 7 With right sides together, pin the backing fabric to the art quilt front.
- 8 Stitch around the art quilt, starting from the bottom edge. (Remember that the seam allowance is 1 cm.) Leave a 10 cm opening in the centre of the bottom edge. This will allow you to pull the quilt through to the right side.



- 9 Cut across the corners of the seam allowance to remove the bulk, then pull the quilt through to the right side.
- 10 Press the art quilt using a warm iron.
- 11 Slip stitch across the 10 cm opening.

Congratulations! You now have a beautiful art quilt to hang on your wall.



## Designing



### Leaf art quilt

#### Sources of inspiration

Nature provides inspiration for a diverse range of textile projects. Leaves come in many different shapes, sizes and colours. They can be used as the inspiration to create colourful and appealing art quilts. Rubbing plates are available in a wide range of designs, including leaf patterns. They can be used with paintstiks to create patterns on fabric. Shiva Artist's Paintstiks are oil paint in a crayon form. They are made of wax and pigment, with a small amount of linseed oil. Paintstik colours are the consistency of lipstick or greasepaint. You can use the paint directly on fabric or apply the paint with a brush. The decorated fabric can then be incorporated into an art quilt.



Rubbing plate  
Image courtesy of Cedar Canyon  
Textiles, Inc. Milona, MN 56354 USA  
[www.cedarcanyontextiles.com](http://www.cedarcanyontextiles.com)



Paintstik design



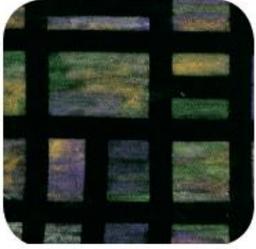
Rubbing plates and paintstiks are available from S & S Creativity Unlimited. Visit their website for more details. For more information regarding paintstiks, go to the Cedar Canyon Textiles website.

## Generating and developing ideas

To develop ideas for an art quilt you will need to experiment with a variety of fabrics and the different methods of adding paintstik colour to fabric. All fibre types can be used with paintstiks. The weight and the texture of the fabric will result in different effects. Heavy fabrics are more suitable for stencilling and **resist** work, while lighter fabrics are most suitable for use with rubbing plates. Pre-wash your fabric to remove any **sizing**.

Paintstiks are self-sealing, which means that a protective film forms over the surface of the paintstik when it is not in use. You can peel the film away with a paper towel, rub it gently on a rough surface, or carefully pare it away with a knife. Paintstik colours are permanent once they are dry so be sure to wear an apron to protect your clothing. Cover your work area with plastic or newspaper to keep your work surface free from stray paint.

Experiment with the following methods of applying paintstiks to create the desired effect for your art quilt.

<p>Place a textured object, such as a rubbing plate, under your fabric and rub the paintstik across the fabric. An image of the rubbing plate will appear.</p>			
<p>Cut a stencil using <b>freezer paper</b>. Iron the shiny side of the freezer paper to the right side of the fabric. Freezer paper stencils can be used up to three times. Lightly rub the paintstiks over the stencil. Use a number of colours to create the desired effect.</p>			
<p>Use both sections of the stencil and compare the result.</p>			
<p>Use masking tape or sticky tape to create a resist grid pattern. Apply the paintstik colour then remove the tape to expose the design.</p>			

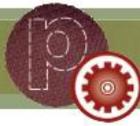
After applying paintstik colour, allow the painted fabric to dry for three to five days, and then heat-set to make the colours permanent. Set your iron to the proper setting for the fabric. Place an old piece of fabric on your ironing board, place the fabric paint-side down and press for 10 to 15 seconds.

## Activity 3.6 Supporting documentation: designing

Complete this activity in an A3 folder.

- 1 Create an A3 storyboard for your art quilt project. Consider the placement of images, textile materials and key words. Use Blu-tack so you can position the images first and move them around to achieve the most visually appealing storyboard. Label your sources of inspiration.
- 2 Create a presentation sketch of the final design for your art quilt. This sketch should be approximately one A4 page in size. Present the sketch on an A3 page. Label the design features and the techniques you will use to complete the project.
- 3 Briefly describe how you have incorporated the elements of design to create an aesthetically pleasing art quilt.

## Producing



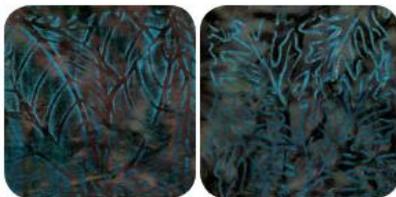
### Materials list

- 20 cm medium-weight cotton fabric (batik patchwork fabric was used in the project shown below)
- 20 cm iron-on Pellon
- Shiva Artist's Paintstiks
- leaf-rubbing plates
- 30 cm fabric for border and backing
- rayon embroidery thread in the same colour as the border
- 20 cm quilt hanger

### Method

**1** Cut four squares of medium-weight woven fabric 18 cm x 18 cm. (This includes a seam allowance of 1 cm.)

**2** Using rubbing plates and paintstiks, create a different leaf design on each of the four squares. Leave the paint to dry, then heat-set using an iron.



Squares 1-4

**3** Cut five strips of black drill 18 cm x 6 cm.

**4** Pin a fabric strip to the top and bottom of square 1, then stitch. Press the seams open.



**5** Now attach square 2 to the fabric strip attached to square 1. Continue this process until all the squares and strips are joined together.

**6** Cut two side strips 86 cm x 6 cm from the border fabric.

**7** Attach to each side of the art quilt. Press the seams open.

**8** Cut a piece of backing fabric and a piece of iron-on Pellon 86 cm x 25 cm. Iron the Pellon to the wrong side of the art quilt front fabric.

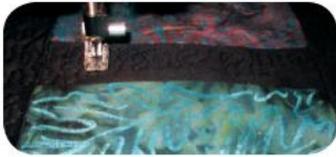
**9** With right sides together pin the backing fabric to the art quilt front.

**10** Stitch around the art quilt, starting from the bottom edge. (Remember the seam allowance is 1 cm.) Leave a 10 cm opening in the centre of the bottom edge. This opening will allow you to pull the quilt through to the right side.

**11** Cut across the corners of the seam allowance to remove the bulk, then pull the quilt through to the right side.

**12** Press the art quilt using a warm iron, then slip stitch across the 10 cm opening.

- 13** Using free-motion embroidery, **stipple** around the border of the art quilt.



- 14** Use a slip stitch to sew the quilt hanger in place.



- 15** To create tassels, select a variety of novelty yarns. Cut them to twice the desired length, plus 2 cm.



- 16** Fold the yarns in half, then tie a slip knot 1 cm from the fold of the yarns. Wrap the remaining yarn around the tassel and secure.



- 17** Trim the tassels to the desired length.



- 18** Hand stitch the tassels to the bottom corners of the art quilt.



Congratulations! You now have a beautiful art quilt to hang on your wall.



## Activity 3.7 Supporting documentation: producing and evaluating

Complete this activity in an A3 folder.

### Producing

- 1 Write a brief description of the art quilt project.
- 2 Include a fabric swatch for each fabric used in the art quilt. (Use pinking shears to trim the samples.) Name the fabrics and identify their fibre composition. What properties of the fabrics make them suitable for an art quilt?
- 3 How much fabric did you purchase?
- 4 What notions were required to make the art quilt?

- 5 How much did the art quilt project cost? Itemise the costing.
- 6 Create a flowchart to show the order of construction.

### Evaluating

- 1 Evaluate your completed textile project. Comment on the effectiveness of the design (function and aesthetics), the quality of production and the suitability of the fabrics and notions.
- 2 If you were to create the project again, what modifications would you make? Why?

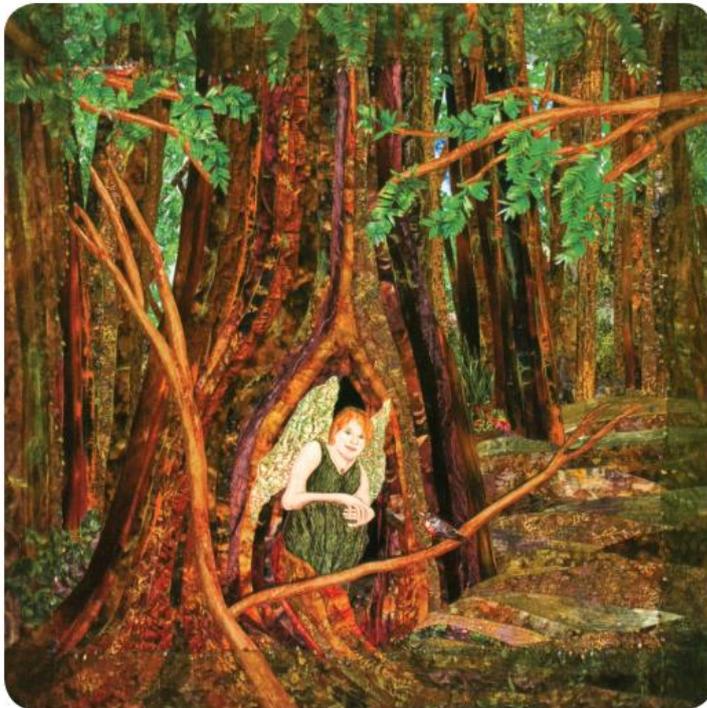
## Activity 3.8 Imagine that!

From the following images of art quilts, select two art quilts which appeal to you. These quilts are from the Husqvarna Viking Gallery of Quilt Art *Imagine that!*

Write a half-page report on each quilt. Include the following information:

- the designer's name
- their source of inspiration
- a description of the quilt
- the size of the quilt
- the textile materials used
- the techniques used
- any other interesting facts.

Create a line drawing of the quilt.



Husqvarna Viking  
*Fairies still live here* by Linda S. Schimdt,  
 Dublin, California, USA  
 Size: 130 cm x 130 cm  
 Materials: cotton, polyester, silk paints, beads  
 Techniques: hand painting, machine appliqué,  
 machine quilting, hand beading, fusing  
 Quilt photography courtesy of Jim Lincoln  
 Photography, Inc., Austin, Texas.

Here deep in Muir woods, where the redwoods are as old as time, fairies still live. They peer out from tree trunks, hover in the misty silences and remind us of a time when the world was young. You can see their fairy dust in the beams of the light that stream through the tall, tall trees, and feel their magic in the everlasting peace of this place. If you believe in fairies, clap your hands!



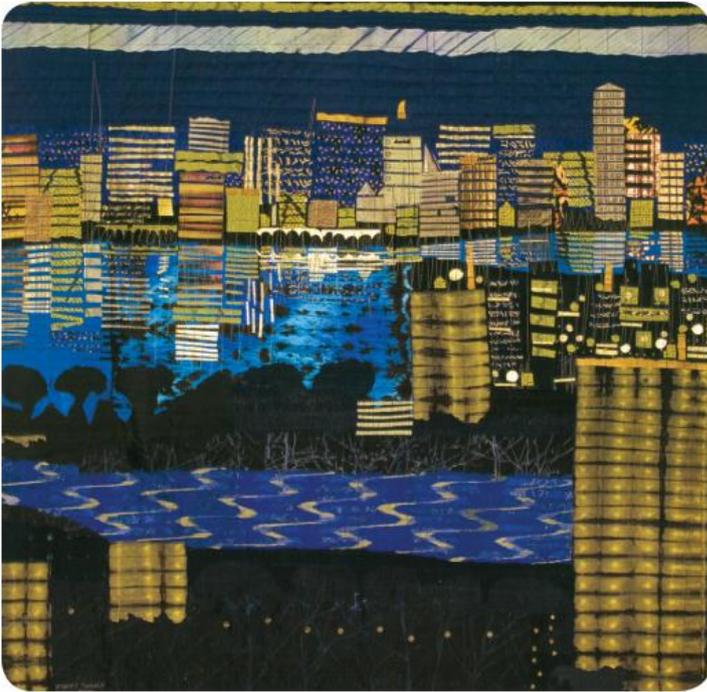
Husqvarna Viking  
*The leap* by Inge Mardal and Steen Hougs,  
 Chantilly, France  
 Size: 130 cm x 130 cm  
 Materials: cotton, batting, thread, fabric paint  
 Techniques: whole-cloth, hand painting, freehand  
 machine quilting  
 Quilt photography courtesy of Jim Lincoln  
 Photography, Inc., Austin, Texas.

The frogs can do it ... How often haven't we wished to make a real leap, in particular in the figurative sense, imagining that by achieving more, reaching further, then ...



Husqvarna Viking  
*Seven Finnish dogs at sunset* by Eva Radscheit,  
 Aachen, Germany  
 Size: 130 cm x 130 cm  
 Materials: jersey cotton velvet, cotton  
 Techniques: piecing, machine appliqué, machine  
 quilting, freehand quilting, hand piecing.  
 Quilt photography courtesy of Jim Lincoln  
 Photography, Inc., Austin, Texas.

At the age of 16, my eldest daughter spent one year as a student in Finland. The host father was a vet and there were seven dogs living with the family. My daughter told us of her experiences with this muddle of dogs and her impressions of the wonderful Finnish nature. I transferred my imagination of her stories into my quilt of seven Finnish dogs at sunset.



Husqvarna Viking  
*Sydney twinkle* by Alison Muir, Neutral Bay,  
 New South Wales, Australia  
 Size: 130 cm x 130 cm  
 Materials: silk, metallic, recycled kimono,  
 commercial cotton  
 Techniques: hand-dyed shibori, hand painting,  
 fused appliqué, machine quilting, beading  
 Quilt photography courtesy of Jim Lincoln  
 Photography, Inc., Austin, Texas.

Imagine That! – most people, when they visit Sydney in the evening for the first time, are aware of the twinkle of the lights. If you describe it to someone, they cannot imagine it – the twinkle special to Sydney, Australia. The work was made in honour of a friend, Joanie Halgreen, who died of cancer in London earlier this year. Her smile was a Sydney twinkle.



Husqvarna Viking  
*Imaginasaurus* by Helen Gordon, Latham,  
 Australian Capital Territory, Australia  
 Size: 130 cm x 130 cm  
 Materials: cotton, cotton wadding, poly-cotton  
 thread, bleach, watercolour paint  
 Techniques: free-motion machine drawing, bleach,  
 watercolour  
 Quilt photography courtesy of Jim Lincoln  
 Photography, Inc., Austin, Texas.

It's midnight and the family is sound asleep, all except young Gavin. Equipped with a torch, his favourite book and a vivid imagination, Gavin's wildest dreams come to life, emerging from the camouflage of a dense jungle, right there in his bedroom. Curiously, the prehistoric fantasies approach their young creator, oblivious but snug under his cowboy quilt. Are these creatures really there in his bedroom or are they just his Imaginasaurus?



Husqvarna Viking  
*The witches* by Junko Sugahara, Kotoh-ku,  
 Tokyo, Japan  
 Size: 130 cm x 130 cm  
 Materials: cotton  
 Techniques: machine appliqué, machine piecing,  
 fusing, machine quilting  
 Quilt photography courtesy of Jim Lincoln  
 Photography, Inc., Austin, Texas.

Since we were born as women, we hope to keep ourselves lovely and brilliant forever. We have a desire to change ourselves to be many types of ladies, for instance cute, elegant and sporty ladies. Therefore, I expressed the desire by making this quilt featuring ladies with a large variety of hairstyles.



Husqvarna Viking  
*Tatlin's tower* by Catherine Millar and Tim Millar,  
 Castle Cary, Somerset, United Kingdom  
 Size: 130 cm x 130 cm  
 Materials: hand-dyed cotton, commercial cotton,  
 batting, assorted threads, acrylic paint  
 Techniques: raw-edge appliqué, machine quilting,  
 hand painting, cold-water dyeing

Vladimir Tatlin (1855–1953) was a utopian and futuristic architect who designed a monument in steel and glass for a Congress in Moscow in 1921. It consisted of two intertwined spirals set on a skew and was to have contained three huge glass rooms, each of which would rotate at a different rate. Its construction would have consumed Russia's entire steel output for a whole year and it would have stood taller than the Eiffel Tower – comparable with the Empire State Building. But it was never built. All we have are a few grainy photographs of a large model of 1919–20, which has since been lost. We imagined the tower, rising out of a city-scape, its organic shapes a contrast to the crystalline angles of skyscrapers. Although Tatlin could not have known at the time, his spirals also anticipate the double helix of DNA – the thread of life itself.

# 4

# Project work focus area: costume

## Outcome, knowledge and skill statement

### Outcomes:

- 5.1.1 explains the properties and performance of a range of textile items
- 5.1.2 justifies the selection of textile materials for specific end uses
- 5.2.1 explains the creative process of design used in the work of textile designers
- 5.2.2 generates and develops textile design ideas
- 5.2.3 investigates and applies methods of colouration and decoration for a range of textile items
- 5.3.1 analyses the influence of historical, cultural and contemporary perspectives on textile design, construction and use
- 5.4.1 selects and uses appropriate technology to creatively document, communicate and present design and project work
- 5.5.1 critically selects and creatively manipulates a range of textile materials to produce quality textile items
- 5.5.2 selects appropriate techniques and uses equipment safely in the production of quality textile projects
- 5.5.3 demonstrates competence in the production of textile items to completion
- 5.6.1 evaluates textile items to determine quality in their design and construction

### Students learn about:



#### Designing

- Generating and developing design ideas
- Communication and presentation of design ideas



#### Producing

- Management of project work
- Advanced pattern production
- Calculating textile requirements
- Sequencing of construction for a textile item



#### Evaluating

- Evaluating the quality of textile items

# Focus area: costume

Of the value of costume in creating an artistic temperament in the audience, and producing that joy in beauty for beauty's sake, without which the great masterpieces of art can never be understood...costume is a means of displaying character without description, and producing dramatic situations and dramatic effects.

From 'The truth of masks' by Oscar Wilde

**Costume** can refer to many dimensions of dress and adornment. Costume in general is fascinating; there is a great deal to learn about historical, cultural and contemporary aspects of society through this medium of textiles and artistic self-expression.

Costume includes:

- headdresses
- theatre, stage, film, television and music television costumes
- masks
- folk and traditional costumes
- fancy-dress costumes
- dance and performance costumes.

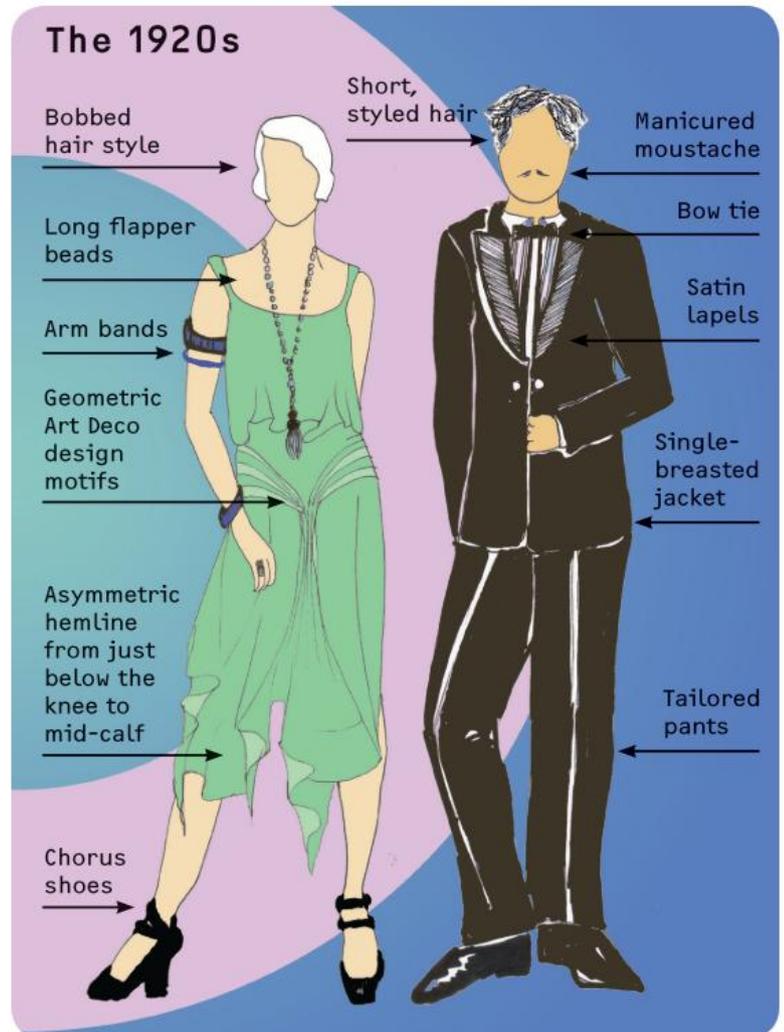
## Historical costume

Historical costume represents a time, place, social class and culture. It is usually distinctive in its appearance and easily identifiable by its common threads of imagery, use of motif, art, line, style and silhouette.

A costume from a particular era conjures up images that are associated with the time and place from which they came and can be cross-cultural; for example, some costumes from the Art Deco period in American socialite clothing incorporated Asian design features, with colours, line, shape, silhouette and decorative designs based on Chinese and Japanese culture. This reflected the inspiration of culture obtained through travel for leisure.

When designing a historical costume, you should:

- consider silhouette – the costume should be immediately recognised by an audience
- consider elements of design, primarily line, shape and colour
- consider decorative techniques, such as embroidery, beading, painting, **printing** and dyeing
- exaggerate important points of design
- create the illusion of accuracy
- create a costume that is theatrically effective
- use colour combinations that retain their brilliance under stage or film lighting.



1920s silhouette rendered in Photoshop

## Activity 4.1 Historical costume

In class, watch the opening scenes of the movies *Marie Antoinette* by Sofia Coppola (2006), *Becoming Jane* by Julia Jarrold (2007) and *Phantom of the Opera* by Joel Schumacher (2004).

- Write a paragraph explaining how the use of historical costume contributes to the success of each movie.
- Use the Fashion Era website to research historical costuming. Select one era and design, sketch and render a costume based on key features identified from your research.
- Select one movie to watch as a class or at home for homework. Select one character and undertake a character analysis of that person. Record everything you can find out about that character during the movie.
- Design, illustrate, label and render a new costume for your character, to be worn in the time period the movie portrays. Then repeat this exercise, but create the costume for the character if they were alive in the present time.
- Repeat the activity one last time, but create a costume for the character that will be worn 50 years in the future.
- Mount all three designs and present them to your class. In an oral presentation, describe your ideas in detail.



Visit the Fashion-era website to find out more about historical costumes.

## Cultural costume

Cultural costume expresses local identity and emphasises uniqueness. Culture offers a system of shared beliefs, values, customs, manners and objects that are unique and are transmitted from generation to generation. Cultural costume may be worn to express a common belief, such as a religious and/or spiritual belief. It can create a sense of belonging and may be worn at events such as ceremonial occasions, celebrations, funerals or dance festivals. Costume may even be worn to signify a national or regional identity.

Cultural costume can also be identified in subcultural groups. A subculture can be defined as a set of people who exhibit a distinct set of behaviours that differentiate the group from the larger culture to which they belong. A subculture group may be distinctive because of the age, ethnicity, social class or gender of its members. The diversity may come about via religious, aesthetic, political or personal belief statements or a combination of these factors. An example of the emergence of a subculture can be seen in the evolution of Tokyo Fruits, Goths, Surfies, Punks, Emos and so on.



Milunka is wearing a contemporary Serbian dance costume.



Subcultural industrial Cyber Punk costume designed and created by Amelia Tan

## Activity 4.2 Cultural costume

Obtain a copy of an old *National Geographic* magazine. Cut out a picture of a national or cultural costume and paste it onto a piece of A4 card. Alternatively you may sketch your own picture; if you belong to a specific cultural group you may like to use a photo of yourself or a member of your family dressed in cultural costume. Share your picture with the class.

Using all the images your class has sourced, make a collage on one of the walls in your classroom to celebrate the diversity of cultural costume.

## Contemporary costume

Contemporary costume is evident in the celebration of special events. It often draws inspiration from other aspects of costume, such as historical, cultural, subcultural and theatrical creations. It is often a reflection of a 'now' look: a modern way of expressing an idea, thought or feeling through dress and adornment. As with all aspects of costume, the contemporary ideal of a costume is inspired by such things as the music, art, dance, theatre, movies, local and world events, and social and political views of a particular group of people at a particular point in time. It is formulated as a snapshot of the time and place in which people live and is influenced by technology and the resources available. Social events such as Mardi Gras, Halloween and fancy-dress parties are examples of how contemporary costume may be used in our society.

## Theatrical costume

A theatrical costume identifies the character an actor portrays by providing an insight into the character's age, gender, role, profession, social class, personality and so on. The theatrical costume also reflects a character's journey. The costume can be designed to factually represent a character. Often theatrical costumes are stylised to exaggerate aspects of the role that is being portrayed, therefore telling the story of the character and bringing them to life.

Theatrical costumes source inspiration from all areas of historical, cultural, contemporary, subcultural, fantasy and futuristic realms. Theatrical costume enhances the dramatic performance of the artist and helps the audience connect with the character being portrayed.

It is also important to consider the functionality of the costume and the physicality of the performance, such as costumes designed for dance, circus performances and gymnastics. The costume must also be considered in relation to the set, music, scenery, lighting, interactive multimedia backdrops, make-up and entire visual impact of the show.

Theatrical costumes can be used for stage, television, film, video, music video and even some catwalk events.



Talyah wears a fancy-dress costume created for a black-and-white themed disco. It is important to ensure the correct props and accessories are used to complement your costume ideas. Research into characters is essential and attention to detail imperative.



Actor Lani Castle in the short film *Missing from Wonderland*, directed by Janice Zets and produced at UTS Sydney 2007  
Photo: Richard Hawkins © 2007. Lighting design: Sidat de Silva

## Project 4.1 Corset and vest

**Suggested duration:** 15 weeks

**Task:** Design, produce and evaluate a costume item suitable for use in a theatrical production or masquerade ball event. Designing for theatrical performance presents opportunities for you to create dynamic and inspiring costumes that connect with characters and their journeys throughout a production. By investigating historical, contemporary and cultural sources of inspiration you will engage in an extensive range of textile and design experiences.

These corset and vest projects will be documented separately, but have been designed using the same source of inspiration. Corsets and vests can form the staple costume wardrobe of many characters. It is possible to create pieces that are historical replicas, contemporary masterpieces or traditional wardrobe items. A corset and a vest, for example, could be used in a pirate-themed production, in an Edwardian-era piece or in plays and films such as *Oliver*. The choice of the fabric, the cut, and the position of seam lines, waists, pockets and decorative details will all add to the costume's appropriateness for the character.



Classic pirate costume incorporating a signature vest



Production flats are black-and-white trade sketches. They are working drawings used to create a costume layout. These production flats outline options for a girl's pirate costume, incorporating a signature corset.

## Designing



### Sources of inspiration

The page at right is from a favourite childhood storybook (*Alice in Wonderland*); it was given to me by my mother who won it at her infants school in 1947. I spent many hours looking at the colour plates in this book, which was illustrated by AH Watson.

*Sutherland Infants'  
School Club  
Popular Doll and  
Toy Show.  
Dolls Section  
First prize -  
Dorcas Hinks*

No. 4. 1947.



Colour plate by AH Watson



Visit the website of Stella and Rose's Books to find out more about AH Watson.

I particularly liked the idea of exploring Alice and her adventures in Wonderland and have been inspired by the text of Lewis Carroll. The corset and vest in this project use *Alice's Adventures in Wonderland* as inspiration. The designs will feature text from the delicate, well-read book of my mother's childhood and use the following quote from the book:

Lastly, she pictured to herself how this same little sister of hers would, in the after-time, be herself a grown woman; and how she would keep, through all her riper years, the simple loving heart of her childhood; and how she would gather about her other little children, and make their eyes bright and eager with many a strange tale, perhaps even with the dream of Wonderland of long ago; and how she would feel with all their simple sorrows, and find pleasure in all their simple joys, remembering her own child-life, and the happy summer days.

### Activity 4.3 Inspiration presentation



- 'Once upon a time...' Use this theme to share with the students in your class your favourite childhood story. Present your work in the form of a PowerPoint presentation.
- Brainstorm how inspirations derived from stories can be incorporated into costume designs suitable for a masquerade ball.
- Use Inspiration software to create a mind map of design possibilities.
- Find a quote that inspires you. The quote could be from a song, a poem, the storybook you are using for your inspiration or maybe even a quote from a family member or friend. This quote will be used to complete your inspiration storyboard for generating and developing ideas.
- Take photographs of images from your story and other items that inspire you. Place them in your PowerPoint presentation.
- Present this information to your class using PowerPoint as a visual aid for your oral presentation.

## Generating and developing ideas

### Activity 4.4 Costume design storyboard

Based on your story inspiration, design, illustrate, render and create a storyboard that features a vest, corset and mask (see project 4.2, page 80). Include front and back views and label your design ideas.

Consider the following suggestions for ideas when rendering your costume design.

<p>Use an artist's gouache or a pantone tria skin tone marker prior to drawing your features.</p>	 <p>This image, inspired by <i>Alice's Adventures in Wonderland</i>, uses Pantone TriA by Letraset 475-T and Artline 200 Fine 0.4 for features.</p>	<p>Use an artist's acrylic, water-colour, gouache or aquarelle pencil to colour or shade in skin tones and highlights.</p>	
<p>Brush in colour for the undertones of the your costume using freehand brush strokes. Building up your design from the base of colour gives your work depth and adds dimension.</p>		<p>Add hair and fabric details and your designer signature. You can use any type of mixed media to finish off your costume illustrations.</p>	 <p>This costume design, titled 'Tea with Alice', incorporates glitter, sequins and hand-drawn fabric patterns using standard texta colours.</p>

## Activity 4.5 Looking to the past

- Undertake a research assignment tracing the history of the corset. Present your research on two A3 pages. Include images where possible and don't forget to include a bibliography.
- Collect three contemporary costume images that incorporate corsetry. Place these images on three separate A4 sheets of paper and label their aesthetic and functional features. For each image, comment on whether you can see any design inspiration linked to your historical research.
- Create a historical timeline of corsetry from the 1800s to today.

## Corset (New Look pattern 6480)



*New Look*  
**6480**

Trade sketch of construction details  
Courtesy of Simplicity Pattern Co. Inc.

### Activity 4.6 Manufacturing specifications

Designers need to create a manufacturing spreadsheet or specifications sheet to gauge how resources will be used.

Create a spreadsheet containing everything you use to create your project, including the following:

- pattern
- fabrics
- threads
- notions
- resources
- equipment
- total money spent.



### Designing your own corset

Creating your own design ideas can be really inspiring, but a tip for success is to take notice of where construction lines, or seam lines, are placed. This will help you take advantage of the best features of the design.

In the New Look corset pattern 6480, there are many beautiful feature seams to take advantage of. In this project satin bias binding will be used to define the shape of the pattern and create sectioned areas in the design. Buttons, braids, ribbons, appliqué, **solv** work, embroidery, smocking, digital transfer, heat setting, hand-painting, pleating, **ruching** and fabric manipulation are just some of the techniques that are suitable for embellishing your work.



Ideas for embellishing your corset

# Producing



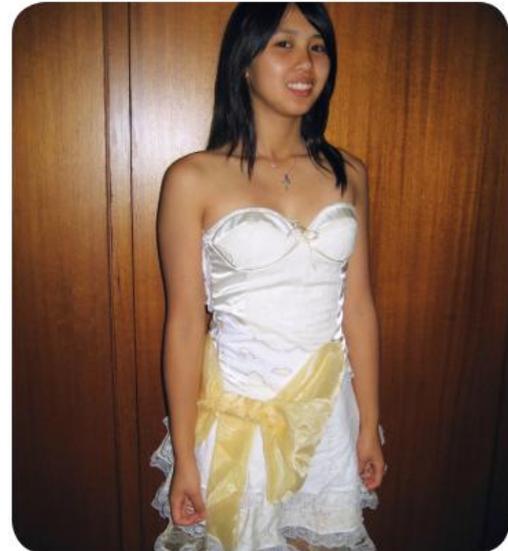
## Techniques for embellishing your project

The textile techniques suitable for a corset are only limited by your imagination. Carry out a series of experiments to achieve the desired look. The corset project in this book uses the techniques of appliqué, bias binding and digital transfer.



Close up of Karen's beaded detail

Karen modelling her corset and mask, which she created for Stage 5 Textiles Technology Studies Masquerade Ball. Karen's design features exquisite beading. The corset design was inspired by Florence Broadhurst's prints.



Vicky modelling her corset and skirt. Vicky incorporated layers of fabric, including hand-stitched ruching, sequin and bead features, ruffles, binding and textural panel features.



Lucinda rendered the designs 'One fine day in spring', front and back view, of her Stage 5 Textiles Technology Masquerade Ball corset and mask.



Close-up of details from Lucinda's corset



Lucinda modelling her corset and mask. Lucinda incorporated layering of tulle over polyester satin fabric, including hand-stitched sequin and bead features and piping to accentuate design lines.

## Creating images

If you have a bubble jet or inkjet printer you can print photos or images straight from the computer onto a transfer sheet.

### Method

**1** Ensure the image is at least 300 dpi and saved as a jpeg format. Test the image on paper and check it is the right size for your panel before printing it onto the transfer paper. Some printers allow you to select transfer; this prints your image backwards. If your printer does not have a setting for transfer you may need to flip the image in Photoshop.

**2** Invert the image and iron the transfer onto the corset panel. Use a dry iron on the highest setting and place the image on top of a wooden bread board to ensure a firm surface. Iron for at least 3 minutes.

**3** Peel the paper from the surface to reveal the heat-set transfer design.

Iron, bread board and inverted transfer



## Preparing each corset panel for assembly

When you have decided how you want each panel to look, finish the design on each panel, ready for assembly. This corset uses a fabric called delustred satin. It is a twill-weave fabric which is constructed from bulk textured **multifilament yarns**. (See chapters 12 and 13 for more information on yarns and fabrics.) The fabric surface has a soft lustre. It comes in different weights and the price varies accordingly.

Because this corset is to be quite firm, the satin has been applied to another fabric which is known as 'Shapewell'. This fabric has been cut on the bias and is a medium-weight cotton. The purpose of this fabric is to create a firm surface for embellishment and to add structure to the corset itself. Cutting the Shapewell on the bias allows the fabric to stretch with the natural give in the twill weave of the satin. Two side panels have been embellished with offcuts of appliquéd vintage ribbon, purchased from Pitt Trading.



### Materials

- 80 cm delustred satin
- 80 cm bemsilk lining
- 80 cm Shapewell or twill weave **interlining**
- 2 m assorted decorative braid and ribbon

### Notions

- 8 m of 12 mm satin bias tape
- 2 to 4 m rigid boning (the amount will depend on how many seams you wish to be rigid)
- 4 m rats tail or strong cord for lacing
- 80 cm looped braid to create loops for the lacing
- matching thread

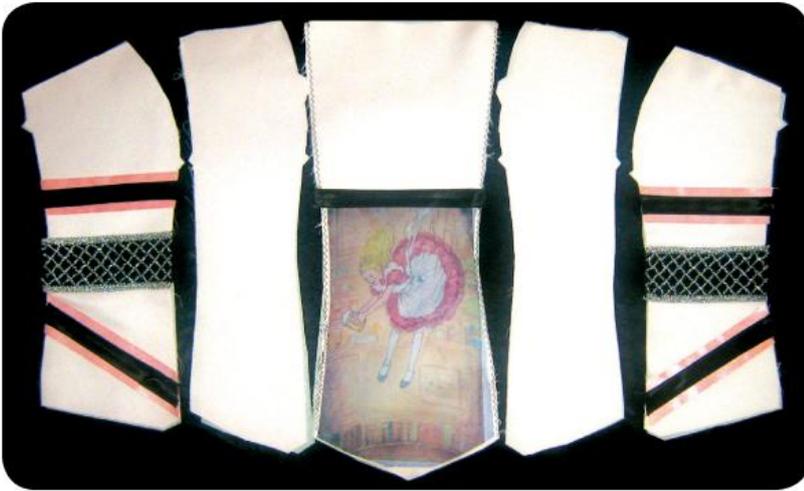
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**AUTUMN/WINTER STOCK ARRIVING NOW!**

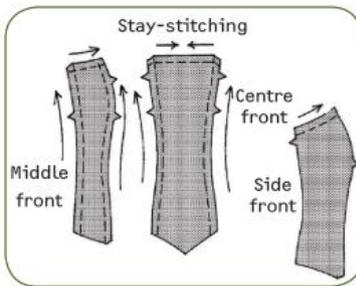
Pitt Trading stock a wide range of items for embellishing corsets, masks and vests. They attend all major craft shows and vintage textile fairs, and they have a shop front as well as trading online.



Corset panels ready for assembly

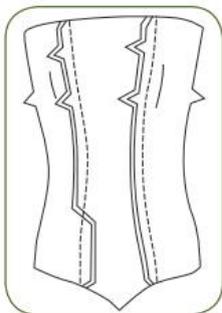
## Method

- 1 Stay-stitch** the upper and side edges of the centre front, middle front and side front.



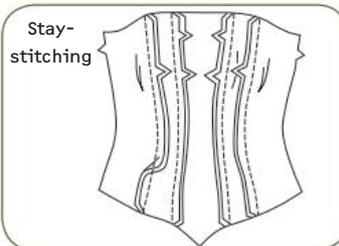
Stay-stitched pieces

- 2** Pin the centre front to the middle front sections and stitch. Press the seam toward the centre front.



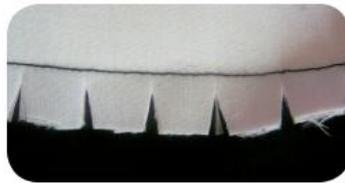
Carefully pressing all seams is the most important step you will perform when creating an accurate and neat corset.

- 3** Pin the side front to the middle front and stitch. Press the seams toward the front.



- 4** Stitch the centre back seam. Pin the back to the side back sections and stitch. Press the seams toward the back. Stitch the front to the back at the right-hand side seam. Press the seam toward the back. Clip all concave curves and notch all convex curves to remove bulk. Press.

- 5** Repeat this process for the lining fabric, **double stitching** lining seams so that they lie flat.



Notching convex curves removes excess fabric and allows the seam to sit better.

- 6** Stitch 12 mm satin bias binding over seams to form design lines that double as casings for the boning. Using binding is a simple way to create effective boning casings. Ensure you use a bias tape to create the casings, as it will stretch with the corset

shape. If you prefer the boning not to be seen you can sew the casings to the lining fabric or the interlining of the corset foundation.



Front of finished corset design



Back of finished corset design



Corset lining

- 7** Cut the pieces of 10 mm boning so they are about 1.5 cm smaller than the boning casings at the top and the bottom of the corset. This will allow room for the corset to be stitched together. Round the boning at each edge to ensure the edges will not poke though your stitching.



Rounded edges of boning

- 8** Position the boning carefully into the boning channels. For extra stability you can add two lots of rigid boning.



Inserting the boning into the boning channels created by sewing the satin bias tape onto the corset front

- 9** Pin the layers of your corset foundations together, matching the seam points. Ensure that you trim back any excess fabric from the edges and cut off any loose threads for a general tidy up.



Trim excess and loose threads.

- 10** Once you have inserted the boning and finished trimming your corset layers, finish the back seam edges of your corset. You can use many options to finish your corset, including rouleau loops, eyelets, hooks and eyes, corset stays, ribbon ties, press studs and open-ended zippers. Your choice of closure will determine how you need to finish the back seam edges of your corset. Ask your teacher which method would be best for your design and follow their directions. Alternatively, you can refer to the method in your pattern instructions.



Ribbon closures



Rouleau loops



Eyelets



Zipper and faux lace-up feature

- 11** Pin the bias tape to the upper and lower edges of your corset, placing the right sides together (that is, the right side of the bias is face down on the right side of your fabric), then hand tack in place ready to sew using your sewing machine. Select a stitch length (SL) of 3 and a stitch width (SW) of 0.

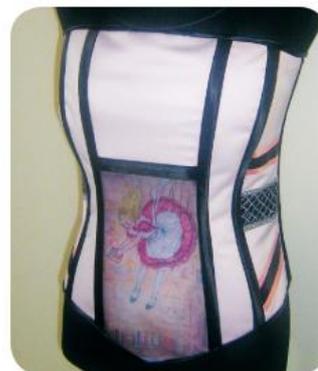


Bias tape sewn onto corset, right sides together

- 12** Turn the bias tape over the edge of your corset, pin and tack in place, then stitch in the ditch of the corset top and bias tape to attach the tape.



Ditch stitching



Finished corset

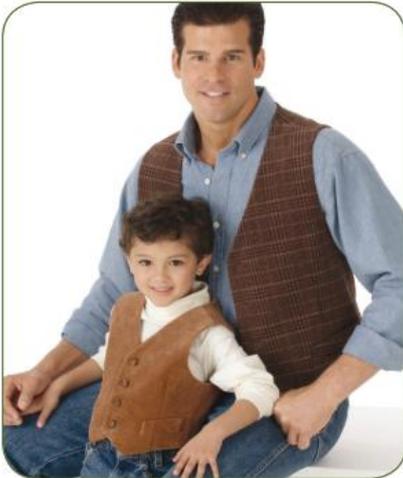


Metro Fabrics supply all types of corset closures, boning and support materials. Visit their website for more information.

# Designing



## Vest (Simplicity pattern 4762)



Courtesy of Simplicity Pattern Co. Inc.



A vest is a very versatile piece of costume for an actor's wardrobe. It can be made up to look like many different characters. Historical dress research will help you to look at the changing styles of vest silhouettes over time. Vests are sometimes known as waistcoats and are not gender specific.

Vests were traditionally made to allow more movement in the body while keeping the main body warm. They have also been used for protection in past and present times. Bullet-proof vests are used to protect police, army personnel or people in danger. Safety vests are used in industry. Folk costumes and traditional and contemporary dance costumes often incorporate a vest feature which is highly decorated with embroidery and beading. It is for this reason that vests are also a popular stage or film costume. They can portray a variety of characters as well as allow an actor ease of movement in performance.

### Activity 4.7 Designer style

Complete this activity in your A3 folder or design presentation space.

- 1 Brainstorm a variety of costumes that can incorporate a vest as part of their design.
- 2 Create three thumb sketches of costume ideas for this vest pattern. Consider the type of fabric and decoration you would use to create the costume.
- 3 Select one of your images and draw a front and back view, then colour, label and render your illustration.
- 4 Write up a character analysis for the character who would wear this costume.
- 5 In table form, list all the fabric, decorative features and notions required for your chosen vest project. Include the quantity to be purchased and the cost.
- 6 Include samples of four textile materials (fibre, yarn or fabric) which will be used in your vest project. Name the material and identify the fibre composition.
- 7 Create a swing tag that explains how your costume will be cared for.
- 8 Select two techniques that you will use on your vest and describe how you incorporated these into your design.



Contemporary cowgirl costumes, incorporating vests, used for a fancy-dress party



A Spanish bullfighter's vest is called a *traje de luces*, which means 'suit of lights'.

## Producing



### Method

**1** Cut out your pattern pieces as required in the pattern instructions. This project uses a technique known as ribbon **weaving**, where lengths of ribbon are woven together to form a patterned fabric. To allow for this, you will need to cut an extra layer of another fabric, such as calico, to create an interlining for your project. The interlining will support the ribbon weaving.

**2** Stay-stitch the front and back neck edges 1.3 cm from the cut edge in the direction of the arrows. This stitching stays in permanently and helps prevent stretching on curved edges. Do this to your main fabric, your lining and your interlining.



Direction of stay-stitching

**3** Place the interlining on an ironing board and iron on the vliesofix. This is a double-sided fusible interfacings which is used to fuse the design into place.



Vliesofix on interlining

**4** Peel back the paper on the vliesofix and lay your warp ribbons down, pinning each ribbon firmly into your ironing board foam. This is known as warping up your design.

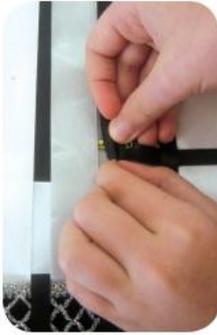


Laying down the warp ribbons ready for weaving

**5** The warp laid ribbons lay the foundation of your design so it is ready to weave the weft ribbons in the required pattern. The design can be quite structured (formal) or variable (informal) depending on your overall concept. There are no rules to pattern design: you can use plain weave or variations in your work.

**6** Use a safety pin to finish weaving your design.



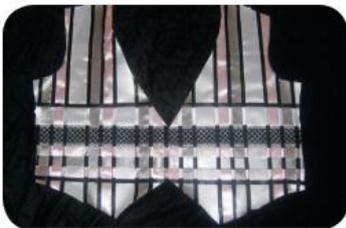


Weaving design



Close up of woven design

- 7** Now iron your ribbon weaving design onto the vliesofix. Trim the excess ribbons away from the interlining to the finished vest shape.



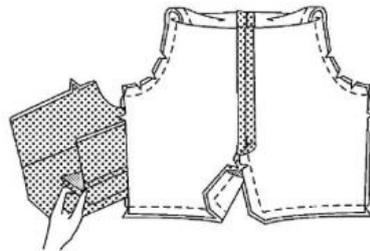
Finished front panels

- 8** Stitch the centre back seam of the vest from the small dot to the neck edge; reverse at the small dot to reinforce the seam. Then stitch the front to the back at the shoulder seams. Repeat this procedure with the lining of the vest. You will now have two vest shapes: one made from the main fabric and one from lining.



Sew back seam and shoulder seam

- 9** Stitch the lining to the vest, leaving the side seams open for turning the right side out, and breaking the stitching at the small dot at the centre back. Trim the seams and corners to remove bulk from the seam allowances. Clip the curves and clip through the seam allowance to the small dot at the centre back.



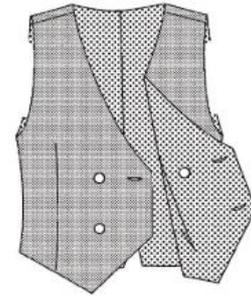
Leave side seams open

- 10** Turn the vest right side out by pulling each front piece through the shoulder and out one of the back side openings, as shown. Press.
- 11** With right sides together and raw edges even, pin the vest and the lining at the sides, matching the armhole seams and the lower seams.
- 12** To stitch, begin on the lining 2.5 cm above the armhole seam. Stitch the vest seam and end on the lining 2.5 cm below the lower seam edge. Press the seam open. Turn the in seam allowances of remaining lining edges and slipstitch together.



Sewing the vest together

- 13** Decide on the finishing closures you wish to use and then mark them in place. Add the closures to complete your vest.



The finished vest

The finished corset and vest, inspired by *Alice's Adventures in Wonderland* and modelled by Brad and Kayla

# Evaluating



## Activity 4.8 The finished costume design

- 1 Take a digital photograph of your costume being worn.
- 2 Evaluate your finished design using a PMI chart. This chart uses the headings Positive, Minus and Interesting or Improvements. Under each of these headings, record your views.
- 3 Pass your image to at least three class members and ask them to evaluate your costume using the same method.
- 4 Collate the results and comment on your overall success.

## Project 4.2 Mask

**Suggested duration:** 5 weeks

**Task:** Design, produce and evaluate a mask suitable for use in a theatrical production or masquerade ball event.

Masks can be used in cultural festivals, dances, stage productions, film, contemporary fancy dress and masquerade balls, and so on. A mask can be used as a form of disguise; it enables a wearer to take on an appearance other than that which is known as their true identity. A mask can be defined as an object that is commonly worn over or in front of the face to hide the features of a person and to establish another being with its own characteristics. This vital characteristic of concealing and revealing is an element frequently used in masks.

As cultural objects, masks have been used throughout the world in all periods of time by many different cultural groups. Mask makers design numerous varieties, including simple hand-held masks, complete head coverings and headdresses with movable parts. Mask-makers around the world have demonstrated great resourcefulness in selecting and combining available materials. Among the resources used are woods, metals, shells, fibres, felt, lace, ivory, clay, horn, stone, feathers, leather, furs, paper, cloth and corn husks.

Masks are traditionally worn with a costume or body paint. Mostly the costume completes the mask wearer's identity and finishes the illusion of the wearer's new being. Costumes, like masks, are made of a great variety of materials, all of which have a symbolic connection with the mask's total imagery. Ideally the costume should be seen with the mask while the wearer is in action. Masks have a morphological effect; they are able to transform a look. Masks often represent supernatural beings, ancestors and imaginary figures, and the mask transforms (or morphs) the natural being to a supernatural being.



Tribal painted mask



Simple 'super hero' cut mask with elastic tie



Ancient Cambodian mask



Elaborate mask



Venetian carnival mask



Japanese theatrical mask

# Designing



Designing masks is both a fun and rewarding experience. In order to begin thinking about your design ideas you will be led through a few simple design exercises to help you consider the possibilities of all the elements of design. You can draw inspiration from many areas, including natural shapes such as butterflies. Consider the notions you could use on your mask. Found objects, such as feathers, beads and scraps of fabric, are ideal items to use. Masks are great projects for using recycled objects as well as using up bits and pieces of small discarded amounts of left-over trims and braids.

## Activity 4.9 Exercises in elements of design

- 1 Research a variety of masks. Include two historical, two cultural and two contemporary designs. Mount the images on A3 cardboard and label interesting design features. Under each design explain how the mask design uses the elements of design: shape, texture, colour and line.
- 2 Select two pieces of coloured A4-size felt, fold them in half and use scissors to cut a symmetrical mask shape. Play around with the shapes, both the outside edges and the internal eye shape. Once you have cut out the outer and eye shape, find a partner to work with and take turns to place your masks over your faces. Ask your partner to critique your mask shape, and give your comments on their mask. Now turn your mask shapes upside down, so the top part of the mask covers the bottom part of your face. Turning the shape upside down changes the mask concept. It can change the character and alter your perceptions. With your partner, critique the mask shape from this new perspective.
- 3 Select one of your mask shapes and write up a character analysis for the person who would wear this mask. Mount the cut shape onto a piece of A3 cardboard. Create a list of ideas of how you could decorate this mask. Think about the colour, shape, texture and line of your project.

## Generating and developing ideas

Reverse Garbage is a great place to source bits and pieces of materials, trims and offcuts. Sometimes the objects you find first inspire the design. Reverse Garbage is a not-for-profit cooperative that sells industrial discards, offcuts and over-runs to the public for creative and practical uses, reducing the amount of waste going to landfill. Reverse Garbage are well known and respected in the education, community and arts sectors for their huge variety of materials, including perspex, cloth, ceramic tiles, closed-cell foam and foam sheeting, stickers, cardboard, wood, hessian sacks, paper rolls, bubble wrap, toys, craft supplies and dozens of other useful items.



To find out more and purchase items online, visit the Reverse Garbage website.

Recycled fabrics and yarns; designer mask idea generated by Natasha





Designer mask (mixed media) by Natasha



Designer mask and corset by Anh



Lana Winger designer beaded mask, created by needle-weaving Japanese silver-lined delica beads



Vintage mask with hand-sewn beads and sequins on upholstery fabric

Browsing the web, magazines and books can help you formulate ideas for your designs. The Creative Cocoon website is an outstanding site that sparked the idea of creating a felted mask for the mask project in this book.

Fay Wilkinson is an **expressive** arts practitioner, artist and storyteller. Her studio and expressive arts practice, The Creative Cocoon, is where she explores her creativity. A graduate of the Expressive Arts Postgraduate Program at Sir Sandford Fleming College in Canada, she studied with master mask-makers in England and renowned storytellers and voice coaches in Canada, as well as at the Sheridan School of Craft and Design.

Faye is the coordinator and instructor in the Expressive Arts Postgraduate Certificate at Sir Sandford Fleming College and is a member of Canada's Society of Arts in Healthcare and the International Expressive Arts Therapy Association. She conducts workshops and retreats nationally and internationally. Her work is in private collections in Canada, the United States, Australia and Europe.



Visit the Creative Cocoon website to find out more about Fay Wilkinson and her work.

# Producing



## Making the felt

### Materials

- coloured wool slivers or tops
- threads for machine embroidery
- feathers
- detergent
- yarns relevant to your design idea
- beads
- embellishments
- PVA glue

### Equipment

- several old towels
- nylon tulle or nylon dress net
- bubble wrap
- a squirt-style sauce bottle

### Method

**1** Creating your felt is the first step in this mask-making project. Lay out a towel on a wet-area surface, such as a sink area. This will prevent your work from slipping when you begin the felting process.

**2** Place a sheet of bubble wrap on top of the towel. Make sure the bubble wrap is larger than the piece of felt that you intend to create.

**3** Lay your wool slivers over the bubble wrap, ensuring you are overlapping the edges of fibres as you go.

**4** Add another layer of wool, placing the slivers at right angles to the first layer.

**5** Repeat this process until you have the required felt thickness. You may also add yarns or other decorative features into the felt at this stage.



Layering of wool slivers or tops

**6** Place a layer of nylon net or tulle over the top of the wool slivers.

**7** Fill a plastic bottle with liquid detergent and warm-to-hot water. Carefully shake or squeeze the soap mixture over the work (and the nylon mesh) to wet down the fleece.

**8** Work the soapy mixture into the fleece in a circular motion. Placing your hand inside a plastic bag gives a good result, but you can work directly with bare hands. Make sure all the wool is wet: dry wool will not felt.

**9** Once you feel all the wool is wet through, carefully remove the plastic mesh.

**10** Roll up your wet fleece and bubble wrap. Secure the ends with rubber bands or ties if you need to.

**11** Wrap the rolled piece in the towel you placed down earlier to prevent slippage. This will soak up any excess liquid.

**12** Roll the bubble wrap piece forward and backwards 80 to 100 times.

**13** Remove the towel and bubble wrap and re-roll the work in the opposite direction, turning it 180 degrees.

**14** Unroll the work, wet the wool with more soapy mixture and work the mixture through the wool again. Now, re-wrap the piece and roll it in the opposite direction another 80 to 100 times.

**15** Continue this process until your felt is the desired texture. The more you roll it, the finer your felt will be.

**16** Unroll your work and rinse off the excess soap in hot water; then rinse in cold water and then in hot water again.

**17** Your felt fabric is now complete. Lay it flat to dry. When partly dry, your felt can be finished with a steam iron on wool setting for a lovely smooth finish.

**18** When your felt is completely dry, embellish it with hand or machine embroidery.



Machine embroidered felt

## Constructing the mask

### Method

- 1 Make a solution of half water and half PVA glue and mix it to a paste.



Prepared materials

- 2 Dip your felt in the paste mix, submerging the whole felt until it is soaked.



Submerged felt

- 3 Place the soaked felt over a mask shape. Cut out eye holes and use your hand to form the features.



Sculpting features

- 4 Leave to dry overnight.  
Your mask is now finished!



Finished mask 'Soul of the ice' by Christine Castle



Finished mask by 'Winter sunset' by Lynda Peters

## Activity 4.10 Quick quiz

- 1 List six types of costumes.
- 2 Define *subcultural*.
- 3 What is the primary function of inserting boning into a corset?
- 4 List three types of closure methods for corsetry.
- 5 Name three different characters you could use a vest for.
- 6 Outline the process of felting.

# 5

# Project work focus area: textile arts

## Outcome, knowledge and skill statement

### Outcomes:

- 5.4.1 selects and uses appropriate technology to creatively document, communicate and present design and project work
- 5.5.1 critically selects and creatively manipulates a range of textile materials to produce quality textile items
- 5.5.2 selects appropriate techniques and uses equipment safely in the production of quality textile projects
- 5.5.3 demonstrates competence in the production of textile projects to completion
- 5.6.1 evaluates textile items to determine quality in their design and construction

### Students learn about:



#### Designing

- Generating and developing design ideas
- Communication and presentation of design ideas



#### Producing

- Management of project work
- Simple pattern production
- Calculating textile requirements
- Sequencing of construction for a textile item



#### Evaluating

- Evaluating the quality of textile items

## Focus area: textile arts

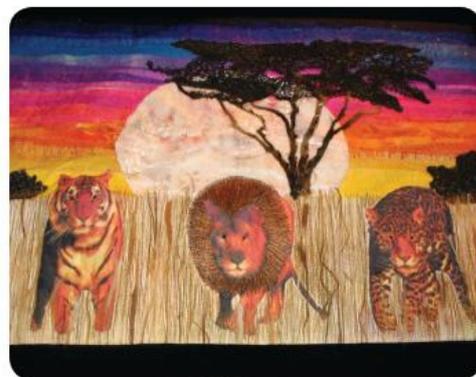
**Textile arts** projects include textile objects that are highly decorative and aesthetically pleasing. Items include wall hangings, fabric-based artworks, embroidery and wearable art. Often these projects are original items and one-off creations. They may have personal significance to the designer or the person who receives the item. Usually textile arts projects are more aesthetic than functional and allow you to develop your creativity in designing and producing. For most textile arts projects you will develop your own original patterns, although for wearable art projects you might start with a commercial pattern that you modify and embellish.



Snowgum wall hanging by Kiara Spencer-Smith



'Goldwork' by Lynda Peters



'African sunset' by Kathryn Peters

### Project 5.1 Fabric books

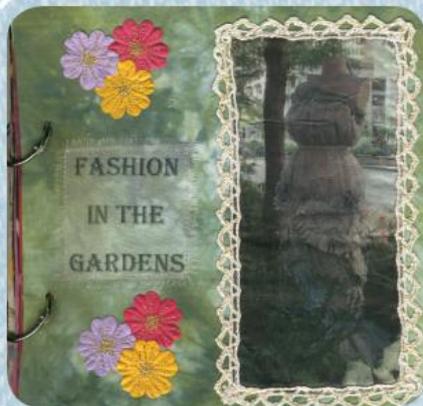
**Suggested duration:** 15 weeks

**Task:** Design, produce and evaluate a textile arts item suitable for use as a book. The purpose of a fabric book is both functional and aesthetic. A book is functional as it contains information either in a written or graphical form. The layout of a book should allow it to be easily read and understood, with appropriate choice of font. The binding must hold all the pages together and allow the book to open flat so that the pages can be viewed with ease.

Unlike a paper book, a fabric book is designed to be highly tactile. Colour and texture are very important elements, but the fabric book must still function as a book, consisting of a front and back cover and internal pages all bound together so the fabric book can open flat and be read or viewed by the reader.



'Family heirloom book' by Kathryn Peters



'Fashion in the gardens' by Lynda Peters



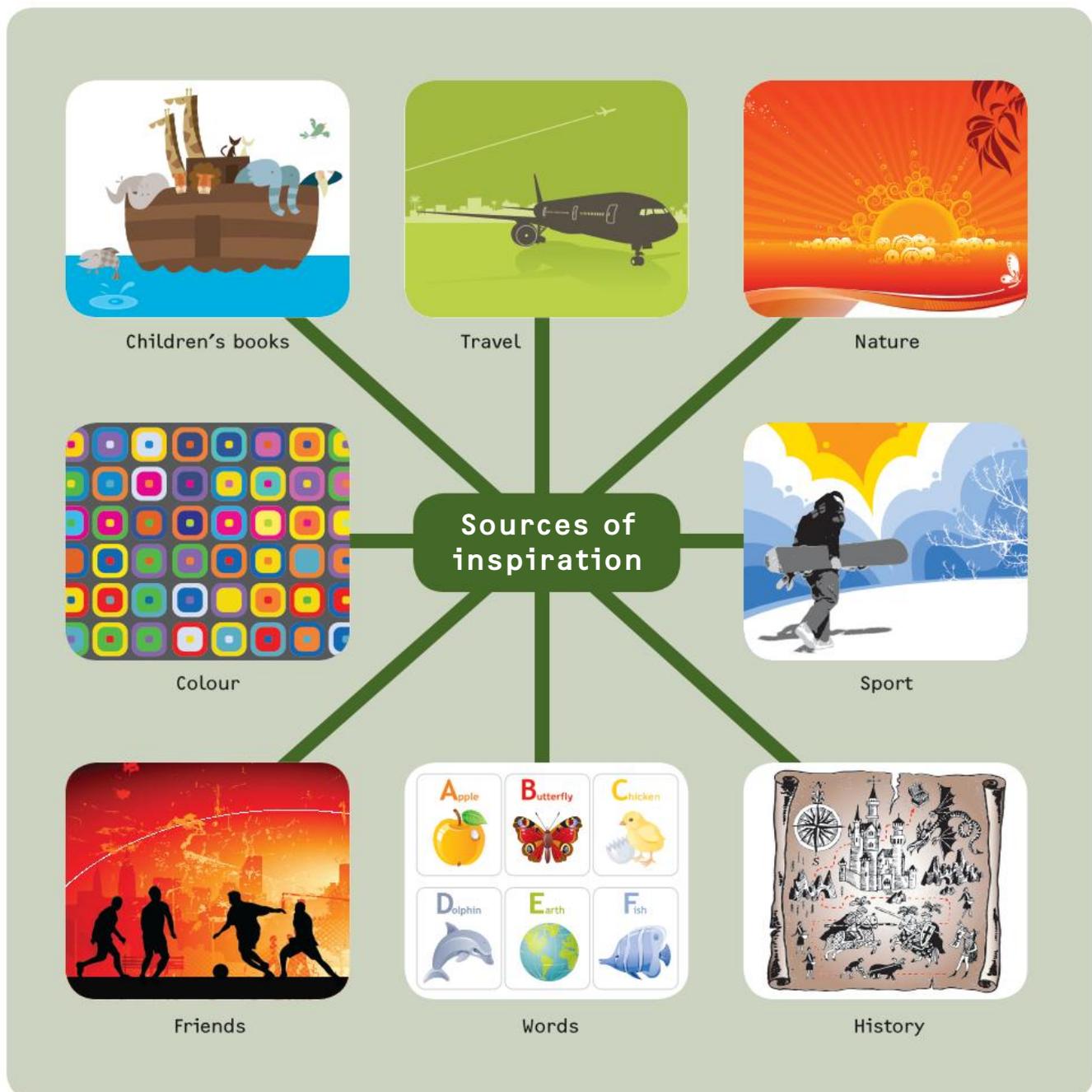
Front and back cover of fabric book by Jennifer Peters

# Designing



## Sources of inspiration

Inspiration for a fabric book can come from many sources, but most designers will be inspired by a source of personal interest or a topic of interest to the recipient of the book. The book may consist of both text and graphics or one or the other. The **target market** will help determine the requirements of the book, including the page size, the amount of text, the number of images and the suitability of embellishments. If you are creating a fabric book for young children you will need to consider the use of embellishments like buttons and beads that could be swallowed and cause choking. If the target market for the book is children under the age of three it would be best to use appliqué, digital imaging and embroidery and avoid the use of buttons, beads and sequins.



## Activity 5.1 Inspiration storyboard

Create an A3 storyboard for your fabric book project. Complete the activity in an A3 folder.

- Consider the placement of images, textile materials and key words. Use Blu-tack to position the images first and move them around to achieve the most effective storyboard.
- Label the sources of inspiration and identify whether the inspiration is historical, cultural or contemporary.
- Try to include at least four sources of inspiration on the storyboard. This will give you lots of ideas to develop a concept for your fabric book.

## Generating and developing ideas

The design of a fabric book will evolve as you are working on the project, but it is important to consider the following:

- Most books are square or rectangular, but you might create your own unique shape. When considering the page shape it is essential to plan how you will join the pages. If you use a circle, consider making one side straight so you can create a binding and the pages will lie flat when the book is opened.
- The page size will be determined by the target market and the concept of the book. Most books are no larger than 30 cm x 30 cm. When selecting the page size, consider how you will finish the edges. If the edges are left raw you will not need to add a seam allowance; otherwise add 1 cm to all edges.
- All fibres, yarns and fabrics are suitable for use in a fabric book if they create the desired effect. If the book has an antique feel, use cream fabrics and lace. Consider tea or coffee dyeing to achieve the right colour for the book. Medium-weight woven fabrics are the easiest to use but knit fabrics can be used if they are stabilised to reduce the stretch.
- Fabric books incorporate many different textile techniques. Experiment with different techniques to achieve the right look for the book.
- The design of the cover of the book is very important, as it should be highly appealing so people are enticed to pick up the book and look inside. Use pencil and paper to develop ideas for the cover. Evaluate the designs so the right cover for the book is selected.

## Activity 5.2 Design ideas

### Visual design development

- Complete six thumb sketches on an A3 page to show the design development for the front and back cover of the fabric book. Label all the design features and design inspiration, including measurements, and evaluate each design using a PMI chart.
- Complete six thumb sketches on an A3 page to show the design development for two pages of the book. Label all the design features and design inspiration and evaluate each design using a PMI chart.

### Presentation of design ideas

- Complete a final rendered drawing of the front and back cover of the fabric book on an A3 page, including the front and back views. Label all design features and design inspiration.
- Complete a final rendered drawing for two pages of the book on an A3 page, including the front and back views. Label all design features and the design inspiration.

# Producing



## Managing project work

It is very important to plan and organise the stages involved in the design and production of textile items to ensure they are completed on time and to a high standard of manufacture. Textile arts projects can be very time consuming due to the amount of detail required to create a highly aesthetic item.

### Activity 5.3 Time and action plan



In an A3 folder, create a time and action plan for the fabric book project.

- Use the computer to create a table consisting of three columns with the headings 'Time', 'Action' and 'Evaluation'.
- Decide whether to use a time length of one period or one week.
- Make sure you write a detailed explanation of the action that will be completed in each time period. It is not sufficient to write 'make the front cover'; instead, you should list all the activities that are needed to create the front cover. For example:
  - create a digital image of the cover photo
  - appliqué the image to the cover fabric
  - create a lace frame
  - use the embroidery machine to create a book title
  - decorate the page with seed beads.

It is important to evaluate your time and action plan throughout the production of the book. This will help you to identify areas of weakness and modify future project work to suit your expertise and the time available to produce the textile item.

## Making fabric pages

A book page can be made in a number of ways. Most pages will be cut from fabric, but some pages will be pieced together. An example is the patchwork frame on page 91. If the page is to be pieced together, make sure you create a template to ensure the finished size is accurate.

Before cutting the fabric, consider whether you are going to make single pages or create a double page. Also think about how the edge of the page will be finished. If the fabric page edges will be left raw, cut the fabric the same size as the finished book size. If pages are to be neatened add a 1 cm seam allowance to all edges.

Detailed page-finishing instructions can be found on pages 99 to 100.

## Simple pattern production

Use paper or cardboard to create a page template for the book. Accurate measuring is essential if the pages are going to fit together and make a functioning book. If you prefer, instead of creating a template you can use a cutting board, quilter's ruler and rotary cutter. Cut out all the pages before you start to embellish. To stiffen the book pages, iron tear-away stabiliser to the backs of all the pages. Usually stabiliser is removed after stitching, but in this case it will be left on the book pages to help stiffen the fabric.



Cutting equipment

## Fabric book techniques

The textile techniques suitable for a fabric book vary from very simple techniques, such as running stitch, to very complex techniques, such as free-motion embroidery. You will need to take time to experiment to achieve the required effect. Remember, you do not have to experiment full-scale but it is important to use the same or similar materials so you create a realistic end product that can be evaluated and used to make a decision about whether it is suitable for use in the fabric book. For more detailed instructions on textile techniques see chapter 9.

### Creating images

If you have a bubble jet or inkjet printer you can print photos or images straight from the computer onto fabric.

- Scan a photo or picture or find a suitable image on the internet. When using images from the internet be sure not to breach copyright. Also check the quality of the image. For printing purposes, the image should be at least 300 dpi and saved in a jpeg format. If you wish to use a very small image, check the quality when enlarged, as it may not be suitable for printing. Test the image on paper before printing it on fabric.
- Fabric cannot be fed through the printer without the use of a carrier paper. Prepared fabric can be purchased from fabric shops or art supply shops and costs about \$2 for an A4 sheet. A3 fabric and fabric rolls are also available. If you do not wish to buy the prepared fabric you will need to soak your fabric in a bubble jet solution to prevent the dye from running once the image is printed. When the fabric is dry, iron the shiny side of the freezer paper to the wrong side of the fabric. The freezer paper will act as a carrier paper, allowing the fabric to pass through the printer. It is best to iron the freezer paper to the fabric just before you are going to use it in the printer so the fabric is flat when fed into the printer. The freezer paper can be used up to three times as a carrier paper.
- Only lightweight fabrics are suitable for this technique, as thick fabrics will not feed through the printer. Natural fibres, including cotton and silk, work best. Cotton fabrics will result in a matt image, while silk fabric will produce an image with lustre. If you are printing a photo or image, white or cream fabric is most suitable, but text can be printed on coloured fabric.
- If you have access to a suitable software program, such as Photoshop, experiment with the different effects to create the perfect image for your book.



Colour image printed on cotton fabric



Sepia image printed on cotton fabric



Colour image printed on silk fabric



Black and white image printed on organza. The colour of the fabric page is visible through the organza.

### Picture frames

Once you have printed the images, you will need to attach them to the fabric pages. This can be done in a number of different ways.

#### Straight-stitch frame

The simplest method of attaching an image to a fabric page is to use straight stitch with SL 3 and SW 0. You can cut around the image or leave it as a rectangular shape.

## Method

- 1 Attach the image to the fabric page using fusible web.
- 2 Use either a rayon embroidery thread or a metallic thread to stitch around the image. Do not reverse; leave the threads long, pass them through to the wrong side of the fabric and tie a knot.



Image attached using straight stitch



Straight-stitch frame

## Patchwork frame

This frame creates a page 20 cm x 20 cm.

## Method



Patchwork pieces

- 1 Print a photo image 11 cm x 14 cm on your fabric. Remove the carrier paper.
- 2 Cut two rectangles 11 cm x 6 cm. Pink daisy-print fabric has been used for these in the project pictured.
- 3 Using a seam allowance of 1 cm, join a rectangle to each of the short sides of the photo. Press the seams towards the rectangles.



- 4 Cut two rectangles 7 cm x 18 cm. (This is the gerbera fabric in the project shown.)
- 5 Cut four rectangles 7 cm x 4 cm. (This is the pink spot fabric in the project shown.)
- 6 Join one of the smaller rectangles to each end of the larger rectangles. Press the seams open.



- 7 Join the side strips to the centre strip containing the photo. Press the seams towards the side strips.



- 8 Iron tear-away stabiliser to the back of the completed page.

## Lace frame

## Method

- 1 Create an image using the instructions on page 90.
- 2 Cut your fabric page to the desired size plus a 1 cm seam allowance. (A piece of fabric 22 cm x 22 cm creates a page 20 cm x 20 cm.)
- 3 Iron tear-away stabiliser to the wrong side of the fabric page.
- 4 Remove the carrier paper from image.
- 5 Iron fusible web to the wrong side of the image. Remove the paper backing from the fusible web and iron the image to the desired position on the fabric page.

- 6 Select a narrow cotton lace. Lay the lace along the edge of the image and mitre the corners by folding the corner of the lace at a 45-degree angle. Press and stitch in place.
- 7 Using straight stitch with a stitch length (SL) of 3 and a stitch width (SW) of 0, stitch the lace to the page with cream polyester machine thread.



- 8 Using gold metallic thread, embellish the lace with free-motion stitching. To prevent the gold thread from snapping, change to a metafil needle. Do not reverse when you have finished; leave the threads long, pass them through to the wrong side and tie a knot to secure.



## Fabric and buttons frame

## Method

- 1 Complete steps 1 to 3 as for the lace frame.



- 2 Iron fusible web to the wrong side of your chosen frame fabric.
- 3 Cut strips to form a frame.
- 4 Remove the paper backing from the fusible web and iron the fabric frame in place around the image.



- 5 Using gold metallic thread and free-motion stitching, stipple over the fabric frame.



- 6 Add buttons to embellish the page.



## Free-motion stitching frame

### Method

- 1 Complete steps 1 to 3 as for the lace frame.



- 2 Set the sewing machine to free-motion stitching and change the machine needle to a size 80 embroidery needle. Use rayon embroidery thread to create a decorative frame around the image.



- 3 Add fabric butterflies to embellish the page. The fabric butterflies have been attached using machine-sewn straight stitch through the centre of each butterfly.



## Braid frame

### Method

- 1 Complete steps 1 to 3 as for the lace frame.
- 2 Select a narrow braid, such as rickrack, which has a wavy decorative edge. Pin the braid in place around the image. Use straight stitch with SL 3 and SW 0 to attach the braid to the page. Use a similar colour thread to the braid unless you want the thread colour to be part of the design. Do not reverse; using a hand needle, pass the threads through to the wrong side of the fabric and tie a knot.



- 3 Add silver flower buttons to embellish the page.



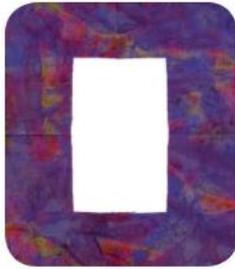
- 4 Braid can also be used to create a frame for multiple pictures.



## Window frame

### Method

- 1 Print an image onto treated fabric.
- 2 Cut your page to the desired size plus a 1 cm seam allowance. (A piece of fabric 22 cm x 22 cm creates a page 20 cm x 20 cm.)
- 3 Cut a window into the centre of the page. Your window should be 2 cm smaller than the image; for example, if the image is 11 cm x 14 cm, make the window 9 cm x 12 cm.



- 4 Lay the image behind the window frame, then attach the frame using straight stitch with SL 3 and SW 0. Stitch about 2 mm from the edge of the window frame.



- 5 Iron tear-away stabiliser to the wrong side of the page. Using metallic machine embroidery thread and a metafil needle, stipple to embellish the page.



- 6 In the window frame shown below, fabric flowers have been added for further embellishment. To create the flowers use a fabric with a flower print. Fuse felt to the back of the fabric with fusible web and cut out the flower shapes. The felt will add dimension to the shapes. Using free-motion embroidery, stitch the flowers to the corners of the frame.



## Paper frame

Pre-cut paper frames can be purchased from scrapbooking suppliers. These can be stitched to the fabric pages using straight stitch with SL 3 and SW 0.



Paper frame



Paper frame

## Adding text

Text is used throughout the fabric book to add detail or tell a story. When adding text, consider the size and style of font. Use a larger font for headings and make sure the font is not too decorative, as it may be difficult to read.



## Printing text on organza

Pretreated silk organza fabric can be purchased and used for printing text for fabric books. As the fabric sheets are A4 in size, plan the text required for the fabric book and print all the text at the same time so you do not waste any of the fabric sheet.

To create text, open a Microsoft Word document and type the required text. Experiment with different font sizes and text types. Check the rulers on the edges of the document so you can gauge the text size. Print a sample on paper before printing on the organza.



Book title printed on silk organza. Attached using straight stitch, with edges frayed to add detail.



Text on organza, used to give photo information in a family heirloom fabric book. Attached using straight stitch.



## Printing text on tape or binding

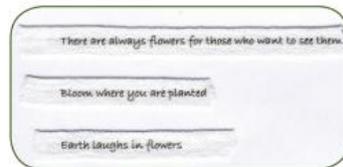
Twill tape, cotton tape and bias binding can all be used for printing text for fabric books. Make sure you soak the tape or bias binding in bubble jet solution to ensure the writing does not run after printing. If you are using a variety of tapes, treat them all at the same time, then hang them on the line to dry. Make sure you iron them flat before using them.

### Method

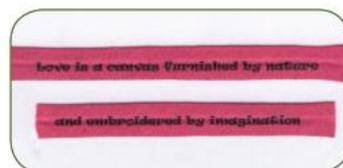
- 1 Open a Word document and type the required text. Consider the font size before printing, as it must fit onto the width of the selected tape. Also think about whether the text will fit onto one line or whether you will be creating multiple rows of text. Leave space between each row of text to allow for the width of the tape.
- 2 Print the text onto paper.
- 3 Carefully cover each line of text on the paper with double-sided sticky tape.
- 4 Position the fabric tape or bias binding on top of the sticky tape. Make sure the sides of the pieces of fabric tape which will go through the printer first are

firmly stuck down by the sticky tape. Trim any loose ends so they do not get caught in the printer.

- 5 Place the paper with the tape attached back into the printer and print the text page again. This time the text will print onto the tape or bias binding.



Text printed on cotton tape



Text printed on bias binding

- 6 Remove the printed tape and attach to the fabric page using straight stitch or satin stitch.



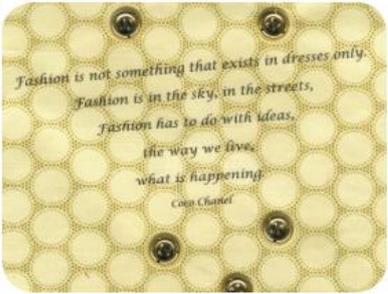
Twill tape used for book title



Bias binding used for text. Fabric page embellished with Angelina fibres and heat-distorted chocolate wrappers.

## Printing text onto fabric pages

Medium-weight dyed and printed cotton fabric can be treated with bubble jet solution so text can be printed straight onto the fabric page. You are limited to the size of an A4 page unless you have access to an A3 printer. If your fabric book page is smaller than an A4 page, cut the fabric to A4 size and then trim to the desired size after printing.

Method		
<p><b>1</b> Once the fabric has been treated and dried, iron freezer paper to the wrong side of the fabric page. The freezer paper will act as a carrier paper and allow the fabric to be fed through the printer. Make sure there are no loose threads that can get caught in the printer.</p>	<p><b>2</b> Open a Microsoft Word document and type the text. Select a suitable font and size.</p> <p><b>3</b> Place the fabric page into the printer and print the text. Remove the carrier paper.</p>	 <p style="font-size: small; text-align: center;">Text printed onto fabric page and embellished with buttons</p>

## Creating text using a sewing machine

Some sewing machines have the ability to stitch text. A variety of different font styles are available to choose from.



Sewing machine text used to create author's name

## Text on metal embellishments or buttons

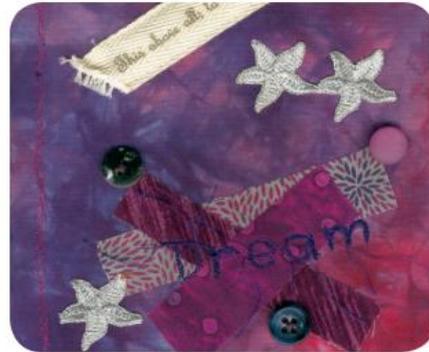
Text can be purchased on a variety of embellishments or as letters on buttons which can be stitched together to create words.



Metal motifs with text hand-stitched to fabric page

## Creating text using free-motion stitching

With practice you will be able to create your own font using free-motion stitching. Make sure you stabilise the fabric before stitching. You may find it easier to place the fabric into an embroidery hoop to help keep it flat.



Dream text created using free-motion stitching. Threads left long as a feature.

## Creating text using hand-stitching

A simple way to create text is to use hand-stitching. Backstitch is a suitable stitch (see page 190 for instructions). Experiment with different types of yarns to find the most suitable yarn for the desired look.



Text created using cotton stranded thread and backstitch

## Pockets

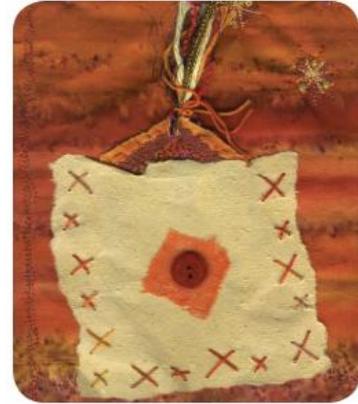
Pockets allow for extra storage space in the fabric book. They add visual appeal to a page and a sense of mystery about what can be found inside the pocket. Pockets may be used to hold fabric tags or hide an interesting feature on a fabric page.

### Paper pocket

#### Method

- 1 Tear handmade paper to the required shape for the pocket.
- 2 Place the pocket in position on the fabric page.
- 3 Using cross-stitch attach the pocket to the fabric page.

Paper pocket attached with uneven cross-stitch



### Lace pocket

#### Method

- 1 Cut two pieces of scalloped lace to the desired length.
- 2 Overlap the two straight edges of the lace and straight stitch through the two layers to create a wide piece of lace.
- 3 Lay the lace on the fabric page and pin it into position.
- 4 Using free-motion stitching, attach the pocket to the fabric page and decorate around the edges of the page.

Lace pocket



### Patch pocket

#### Method

- 1 Decide on the size of your pocket. This will be determined by what is to be stored inside. These instructions are for a pocket that is designed to hold three fabric tags.
- 2 Cut a fabric rectangle 16 cm x 8 cm for the main pocket piece and another 16 cm x 5 cm for the pocket trim. Use a different fabric for each of the rectangles.
- 3 Press the trim fabric in half lengthways, with the wrong sides together.
- 4 With right sides together, stitch the smaller rectangle to the larger rectangle along the top pocket edge. Press seam allowances towards the larger rectangle.



- 5** Top stitch through the seam allowance.



- 6** Press each side of the pocket over 1 cm towards the wrong side.

- 7** Place the pocket into position along the bottom edge of the fabric page.

- 8** Stitch around the pocket, creating a triangle shape at the top edge of the pocket to secure it.



- 9** To divide the pocket into three sections for the three fabric tags, sew rows of stitching 4.5 cm and 9 cm from the pocket edge.

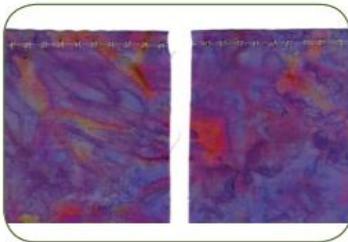


- 10** Place the tags inside the pocket.

## Zipper pocket

### Method

- 1** Cut the fabric for the pocket to the desired size.
- 2** Press a 1 cm hem along the top edge.
- 3** Using a decorative machine stitch, stitch close to the folded edge.
- 4** Cut the pocket in half lengthwise.



- 5** Open your zipper. With right sides of the pocket and zipper together, lay one side of the zipper along the edge of the pocket and then pin. Using a zipper foot, stitch the zipper in place.

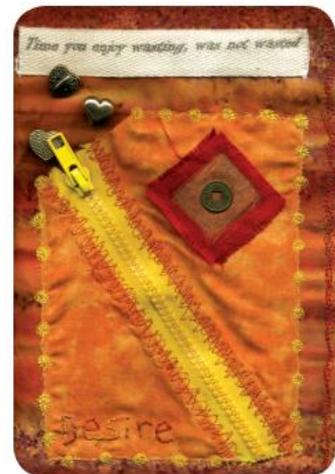


- 6** Repeat for the other side of the zipper.
- 7** Top stitch along each side of the zipper.



- 8** Using paper scissors, trim the zipper to the right length.
- 9** Lay the zipper pocket in place on the fabric page.

- 10** Using a metallic thread and free-motion stitching, attach the pocket to the fabric page.



Chunky zipper pocket

## Fabric tags

Fabric tags are interesting additions to a fabric book that allow you to add removable features. Tags can be completely hidden in a pocket on the page and the reader will only discover their presence when the zipper is opened; or they may sit partly in a pocket, adding colour and texture to the page.

Felt is a useful fabric to use when creating a tag as it creates body and makes it easier for the tag to be placed inside a pocket.



Fabric tag created using layers of fabric stitched together using free-motion stitching. Text created using backstitch.



Fabric tag created by layering fabric strips. Free-motion stitching is used to hold the layers together.

## Text tags

### Method

- 1 Follow the instructions on page 95 to print your desired text onto twill tape.
- 2 Cut felt to the required size for the tag.
- 3 Using metallic thread and free-motion stitching, attach the twill tape to the felt backing.
- 4 Trim the felt with pinking shears.
- 5 Using a hole punch, create a hole close to the end of the tag.
- 6 Create a tassel by cutting decorative yarns to twice the desired length. Fold the yarns in half and attach them to the fabric tag using a slip knot.



Text tags

## Finishing your fabric book

Now you have embellished all the pages for your fabric book, it is time to finish the pages.

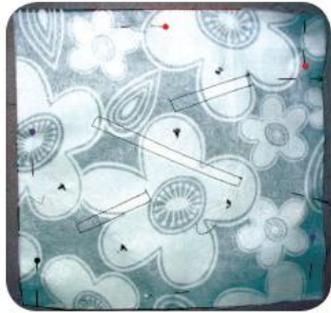
### Fabric page with neatened seam edge

### Method

- 1 Cut two pieces of fabric the size of the book page plus a 1 cm seam allowance on all sides.
- 2 Embellish each page using a variety of techniques, such as text, images, pockets and tags.
- 3 Place the completed pages right sides together and pin.



- 4 Stitch around the page, leaving a 10 cm opening in the centre of the edge that will be bound to form the book. (Remember that the seam allowance is 1 cm.) Reverse to secure the seam.

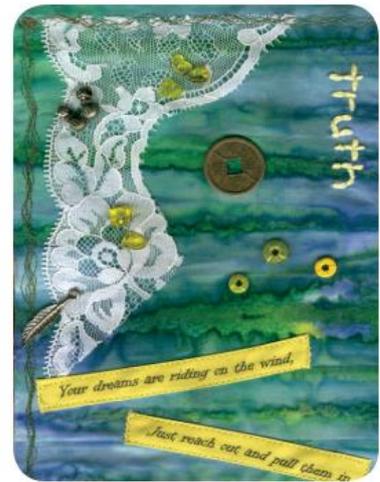


- 5 Cut across the corners of the seam allowance to remove the bulk.
- 6 Turn the page through to the right side. Push out the corners to form the correct shape, then press.
- 7 Hand-stitch across the opening using a slip stitch.
- 8 Repeat these steps until all pages are stitched together.

## Fabric page with raw edges

### Method

- 1 Cut the fabric pages the finished size. No seam allowance is required.
- 2 Embellish each page using a variety of techniques, such as text, images, pockets and tags.
- 3 Place the completed pages wrong sides together and pin.
- 4 Using free-motion stitching and rayon embroidery thread, stitch around the page. Use rayon embroidery thread in the bobbin, as the bobbin thread will be visible on the under page.



## Fabric page with lace edges

### Method

- 1 Cut the fabric pages to the finished size plus a 1 cm seam allowance.
- 2 Embellish each page using a variety of techniques, such as text, images, pockets and tags.
- 3 Select a narrow lace to trim the page. (A wide lace will not sit flat at the corners.)
- 4 Lay the lace around the three outer edges of the page; mitre at the corners. Do not place lace on the side of the page which will be bound to create the book. Remember: because you are stitching two pages together you will attach lace to every second page.
- 5 Stitch the lace in place 1 cm from the page edge, using a straight stitch with SL 2.5 and SW 0.
- 6 Laying right sides together, pin one page with lace edging to one without. Stitch around the pages, leaving a 10 cm opening in the centre of the edge which is to be bound to create the book.
- 7 Cut across the corners of the seam allowance to remove the bulk.
- 8 Pull the page through to the right side and press.
- 9 Hand-stitch across the opening.



Lace-trimmed page

## Assembling the book

### Hinged rings

Hinged rings are an easy way to join your fabric pages together to form a book. This method will also allow you to add more pages later, as the rings can be opened and new pages added. Another advantage of hinged rings is that they allow the pages to lie flat when opened.



### Method

- 1 Using a screw punch, create two holes in the left side of the page.



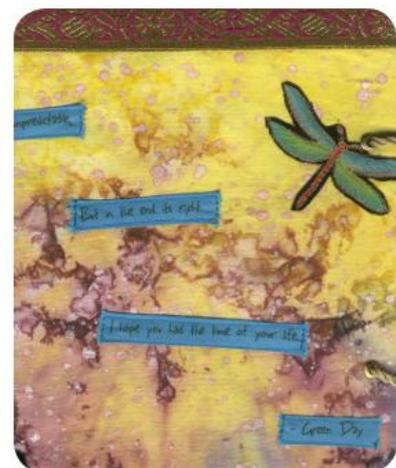
- 2 Make two holes in exactly the same place on all the fabric pages.
- 3 Lay the pages on top of each other and place a hinged ring through each set of holes.

### Eyelets

### Method

- 1 Use a screw punch to create two holes in the fabric page.
- 2 Using an eyelet tool, follow the instructions on the eyelet packet to attach the eyelets to the fabric pages.
- 3 Thread a cord through the eyelet holes and tie a bow to secure.

Fabric page with eyelets and cord on right-hand edge



## Stitched-through pages

### Method

- 1 When creating the pages, cut them to twice the finished size. With this method you will create two pages at a time.
- 2 Embellish each page using a variety of techniques, such as text, images, pockets and tags.
- 3 Attach as per the pages with raw edges (see page 100).
- 4 Lay the book pages in order on top of each other, with the cover on the bottom of the pile.
- 5 Using free-motion stitching, rayon embroidery thread and a jeans needle, stitch through the centre of the book. With this style of book the number of pages will be limited to the amount of fabric the sewing machine can stitch through without breaking a needle.



Stitched-through pages

## Evaluating



### Activity 5.4 Reflective journal

Complete the following activity in an A3 folder.

- 1 Identify the target market for your fabric book. Briefly explain why the completed book is suitable for that market.
- 2 In table form, list all the fabric and notions required for your fabric book project. Include the quantity purchased and the cost.
- 3 Include samples of four textile materials (fibre, yarn or fabric) which were used in the book. Name each material and identify its fibre composition. Justify the selection of each material, based on its textile properties.
- 4 Select two of the following techniques:
  - images
  - picture frames
  - text
  - pockets
  - fabric tags.

Describe how you incorporated these techniques into your fabric book.

- 5 Develop an evaluation sheet for your fabric book and give it to one of your peers to complete. Ask them to evaluate the quality of the fabric book in relation to design, functional requirements, aesthetic aspects, construction, fabric selection and the notions used.



## Activity 5.5 Quick quiz

- 1 List the features of a textile arts project.
- 2 What is the difference between historical, cultural and contemporary sources of inspiration?
- 3 Define the term *target market*.
- 4 Why is it important to complete a time and action plan when creating a textile arts project?

## Project 5.2 Sculptured doll

**Suggested duration:** 8 weeks

**Task:** Design, produce and evaluate a textile arts item suitable for use as a sculptured doll. The purpose of this doll is purely aesthetic.

Dolls have been a part of our history since prehistoric times, used as play objects, to represent the figures of well-known individuals or as religious symbols. Dolls have been made from every substance imaginable, including cloth, clay, rubber and celluloid.

Rag dolls were once made by mothers and grandmothers for their children. These dolls were well-loved and were often a child's first toy. Commercially produced rag dolls were first introduced in the 1850s by English and American manufacturers.

The term *rag doll* refers generically to dolls made of any fabric. The term *cloth doll* refers to a type of rag doll made of linen or cotton.



Crazy-hair art doll created by Christine Castle



Antique handmade rag doll



Upside-down doll depicting historical women during the American Civil War period

# Designing



## Sources of inspiration

The design process can be quite daunting, particularly when you set out to create a three-dimensional project such as a doll, bear or puppet. The creative process requires you to consider the most important aspects of the design. When designing a doll there are several important aspects to consider. A thematic approach is often a good way to start: considering historical, cultural, contemporary or ethereal (unreal or fantasy-based) themes will help you to consider the possibilities. After making a decision on the theme, you need to consider the shape. This is probably the single most important decision you will have to make. Once you have decided on the shape, you need to consider the mechanics of how that shape will be put together. What will connect your pieces? Will the doll move or bend, sit or stand? The mechanics of the doll are integral to the success of the project. It is then important to consider size and proportion: do you want to make a doll that is in scale to human proportions, fashion proportions or your own creative, fanciful proportions? Colour and texture will help complete your doll's theme. Lastly, it is the mood and expression of the total design concept which will capture the imagination.

### Activity 5.6 The creative design process

Complete these activities in an A3 folder.

- **Theme:** Select a theme for your project. Decide on possible colourways, decorative finishes and different design ideas. Collect pictures that support your theme and create a collage on an A3 page.
- **Shape:** Draw three body shapes to be considered for your doll. Carry out an evaluation of positive, negative and interesting facts about your shape, and select your favourite shape.
- **Mechanics:** How will the doll be put together? Will it be one piece, jointed, moveable, poseable? Consider the possibilities and draw a couple of thumb sketches to consolidate your ideas. Include ideas for joints, wires or **armatures**.
- **Size:** How big do you want your doll to be? What is the scale? Evaluate the impact of the scale.
- **Proportion:** Consider the proportions of your doll. Sketch three possible alternatives – changing the size of the head, arms and legs can give a totally different concept – and evaluate each design.
- **Expression:** Create an A3 sheet of sketches of eyes, noses, mouths and ears to see what type of expression and features you want to create for your doll. This will be very important in defining the character of your doll.
- **Decoration:** Make a list of possible decorative techniques you would like to use on your doll or its clothing. Research and record two methods of decorative textile techniques that would be suitable for use in your doll project. Create a sample of each method for your supporting documentation and write up your research with an aim, method and conclusion.

## Generating and developing ideas

Making dolls can be extremely satisfying; for some textile artists it can even be financially rewarding. It is a chance for you to use your textile skills in a creative way. You can be as conventional or as crazy as you like. You can draw inspiration from other people's work or from research on dolls. Images are always helpful in the development and generation of ideas. Using historical, cultural, contemporary or fantastical themes can be a great place to start when creating your ideas.



Doll representing the Zulu Sangoma, traditional healers. Made by Zulu mothers for their children, using plastic beads and wool.



Hand-knitted doll



Traditional American rag dolls



Japanese cultural doll



Three African rag dolls



Female and male dolls from Rajasthan in India

Designing your own pattern enables you to have full creative control over your project work. It is essential to research your options before you begin the designing process. The Cloth Doll Connection website is a great place to start and has many links to lead you closer to producing your own patterns. Some websites offer free doll patterns to get you started, which you can often download in PDF format. Once you have trialled a pattern you can alter the dimensions by changing the proportions, shape, size and so on. All the dolls shown in this chapter use the same pattern.



Visit the Cloth Doll Connection website for patterns and information about cloth dolls.

## Activity 5.7 Contemporary doll artists: research activity

Create a PowerPoint presentation that showcases a contemporary cloth doll designer. Go to the Cloth Doll Connection website (see above), click on cloth doll designers and select a designer who captures your imagination. Create PowerPoint slides with the following information:

- Slide one: Title your slide show
- Slide two: Write a paragraph outlining the designer's profile.
- Slides three, four and five: Capture three images from the internet and describe the designer's style. Comment on theme, shape, size, mechanics, proportions, expression, character and decoration.
- Slide six: Design a doll in the style of your artist. Label all features and render your design idea, then scan it into your PowerPoint presentation, ensuring you use 300 dpi resolution.
- Slide seven: Title your doll, and include a short character analysis.
- Slide eight: Record a bibliography.



# Producing

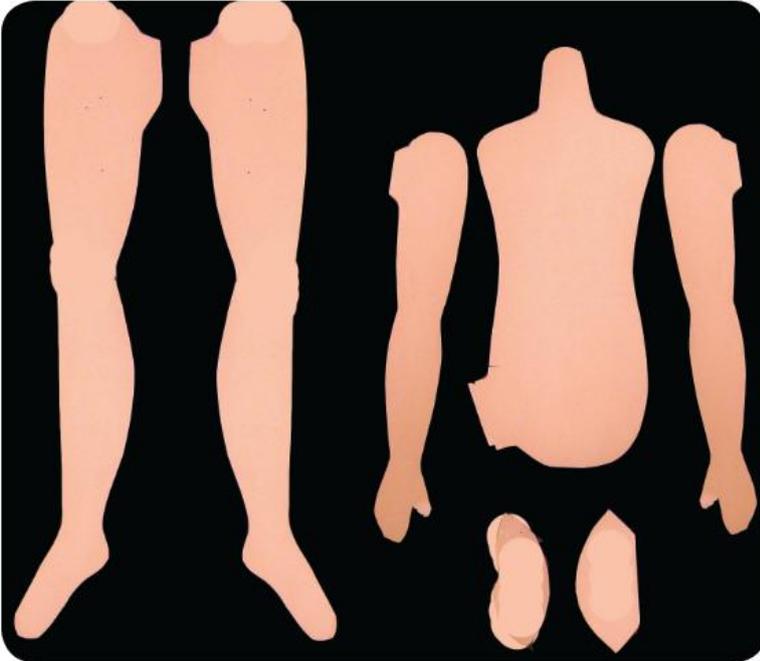


## Simple pattern production

Use paper or cardboard to create a doll template. Play around with proportion, line and shape until you are satisfied with your design ideas. Once you are happy with your shapes, you need to consider how the doll parts will be put together. The pattern that has been created for this book is very simple in plan and is meant to be used for a starting point in doll production. When you decide on a doll style, go to the shops and purchase a

doll craft pattern; alternatively, *Doll and Bear Magazine* has free patterns and instructions, and there are many websites that also have free patterns.

Remember to keep it simple for your first project. As your skills progress you can add wire armatures. Pipe cleaners make outstanding wire frames for small areas like hands, as they are padded and easy to ply. You can also sculpt faces and body shapes. Joints can also be added; wooden beads are great for doll joints at the elbow and knee points, or you can buy commercially produced joints.



Cardboard doll pattern template

### Activity 5.8 Contemporary doll construction plan

- Using Microsoft Word, write up a procedure documenting the stages for creating your doll.
- Include steps and directions for the best possible manufacturing method or order of construction.
- Keep your instructions simple; include black-and-white trade sketches to add value to your explanation.
- Once your doll has been made, design a pattern envelope for your creation. Use a photograph of your doll as the main source of visual communication.



## The essential tools for production

There are many specialist pieces of equipment that can help you create your doll more efficiently. You can buy these items from most craft stores, and they are valuable tools if you are going to make many doll and bear projects.

Doll needles are very strong and very long; they are an essential part of a doll-maker's kit, as they enable a textile artist to sew through body and limb parts, thus connecting the parts of the doll. Circular needles are brilliant for hair or tricky pattern work; they make some sewing jobs a great deal easier.

A stuffing stick or stuffing fork helps you stuff the fibre fill into extremities, reaching down to the base of feet, hands and other hard-to-reach places. If you don't have a stuffing stick, a simple chopstick makes a great alternative.

Waxed beading thread such as NYMO is great for attaching limbs. It has to be a strong thread to hold the limbs in place. Another option is using dental floss, as thread this works well and is very strong and quite affordable.

## Creating your doll

### Materials

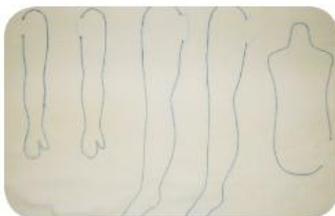
- 1 m calico
- thread to match
- doll needles
- waxed thread
- chopstick or stuffing stick
- fibre fill
- 4 buttons
- yarn for hair
- Angelina fibres
- mulberry bark
- fabrics to suit the design theme of your doll's clothes



Mulberry bark is available from the Thread Studio. Visit their website for more information.

### Method

- 1 Cut out your cardboard template. Fold the calico in half and place the template pieces on the double layer of fabric. Trace around the outside of your design with tailor's chalk. *Do not cut the shapes out.* Ensure you leave at least 3 cm between each pattern piece and include an opening on each section. The opening will be used for stuffing or filling the doll later, so it is essential that you leave a good fabric allowance at the opening. In this project polyester fibre fill has been used to stuff the component shapes of the doll.



Transferred design shape

- 2 Once your design has been transferred, set your sewing machine to SW 0 and SL 0.5. These small stitches will ensure no stuffing will poke through your design seam lines. For this cloth doll project, plain calico has been used. The stitches have been done in black so you can see them against the fabric. When you create your project you should use matching thread. Stitch the layers together, leaving the openings free.



Stitched arm piece. Note the stitches have been done in black to show contrast.

- 3 Cut around all the pattern pieces. Wherever you have an opening, cut out a 3 cm seam allowance, as shown in the photograph above. This will leave room for turning the opening, folding, tucking and slip stitching later. Leave a 1 cm seam allowance for the rest of the doll.
- 4 Sew the doll together, then clip and notch the seam allowance where appropriate.



Trim the seam allowance, notch convex curves and clip concave curves

- 5 Turn the pieces inside out and stuff each piece using a chopstick or stuffing stick. Do not rush this activity, as smaller pieces of stuffing and tighter packing of the fibre fill will guarantee that you create a much smoother appearance. Areas such as necks must be very firm; this enables the head to have greater stability.



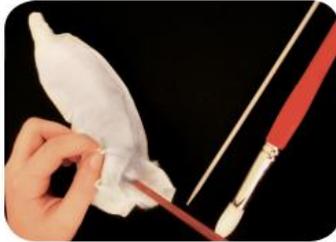
Turn the project inside out.



Tease the fibre fill apart.



Use fibre fill to stuff the doll project firmly.



You can buy a stuffing stick to stuff your doll. Paintbrushes, knitting needles and chopsticks are also great to use.



Fibre fill inside calico limb

- 6** Once all your pieces are stuffed, use slipstitch to close the openings on all limbs. Leave the head open at the base and place the head on the neck.



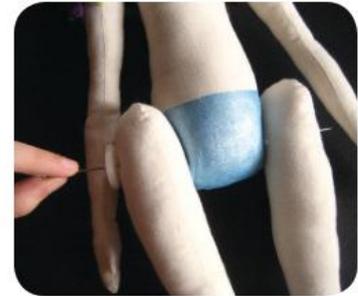
Pin the openings closed and finish the seam with an invisible slipstitch.

- 7** Turn the openings under and pin them in place, then slip stitch the head to the neck.

- 8** It is now time to assemble your creation. Using a doll needle, attach your limbs. This simple project uses buttons to hold arms onto shoulders and legs onto hips. It is best to use waxed quilter's thread or dental floss for strength.



Stuffed pieces ready for assembly



Use buttons and a doll needle to attach your doll's arms and legs.

## Making your project come to life

It is now time to decorate your project. A great place to start is the hair because once the hair is in place you can determine where the doll's facial features should be placed.

### Clothing

There are two main ways you can dress your doll.

Firstly you can create miniature pattern shapes to the doll's proportions. This method is known as flat pattern-making and is the best method for making clothing that can be removed from your doll. If you are creating clothing in this manner, you should allow for the three-dimensional qualities of the stuffed body. Trace your doll's stuffed and assembled body to get the dimensions. The technique of flat pattern-making has been used to create the clothing for the crazy hair doll and Indian sari doll at the end of this chapter.

The second type of pattern-making is known as moulagé. It is based on the French technique of draping the body, securing the shapes, and cutting and stitching them in place. This technique is great for dolls, particularly if you do not need the clothing to be removed. The technique of moulagé has been used to create the clothing for the fairy queen doll at the end of this chapter.

### Hair

Hair style and type adds a unique feature to your design work. It is possible to buy wigs for dolls; they are, however, quite expensive. You can also buy faux hair to sew on the scalp of the doll in segmented strands. Many other alternatives are possible and you are really only limited by your imagination. Ribbon, braid, fancy yarns, twill tape, wool, steel wool, pot scourers, silk flowers, ribbon roses, feathers and so on are all viable possibilities. In this project I have used a hand-spun wool which was created by using a simple drop spindle.

## Hand-spinning

The art of spinning wool and other materials into a thread has been practised for thousands of years. By following the instructions below you can try spinning for yourself. If your first attempts look uneven, don't be concerned, as this can add to the character of your doll.

A drop spindle is an inexpensive piece of equipment which is quite easy to use. A drop spindle has three parts: the stick is called the spindle; the disc on bottom of the stick is called the whorl; and the hook is simply called the hook.



The Joy of Handspinning website has each step of the spinning process captured on a short video.



Parts of the drop spindle

## Method

- 1 Card and comb your wool slivers, then take a handful and tease them out until they are free from lumps or tangles.



Carded and combed slivers

- 2 Draw a few fibres out from the wool and twist in a clockwise direction to make a thread about 15 cm in length.
- 3 Attach a leader yarn, using a piece of yarn about 50 cm long. This length of yarn is attached to the spindle to help begin the spinning process. Tie it onto the shaft underneath the whorl, then

take it over the side of the whorl and secure the end onto the hook.



Threaded drop spindle

- 4 Pick up the spindle and attach the sliver to the leader yarn.
- 5 Holding the slivers in one hand and the spindle in the other, twist the spindle in a clockwise direction. As the spindle is spinning, pull out more fibres from the wool. Allow the twist to run up the fibres to produce a yarn.

- 6 Continue spinning the spindle and drawing out the fibres as the spindle drops. Wind the spun yarn around the spindle as you go.

- 7 Repeat the whole process, adding more wool in your hand as required, until the spindle is full of spun yarn.

- 8 Wind the yarn off the spindle into a hank.



Spun yarns

To attach the hair to your doll, cut lengths of your spun fibre into hair strands and sew onto the top of the scalp, using a circular needle. Always cut the strands twice as long as you need them, as they will be connected through the middle of the strand



Cut lengths of hair, ready to be attached



Attaching the hair to the scalp

## Facial features

Creating a face for the doll is one of the tasks that most people find quite hard. It is the doll's face which will hold its character and capture the attention of the viewer. Facial features can be added using many techniques.



Samples for achieving expression in eyes

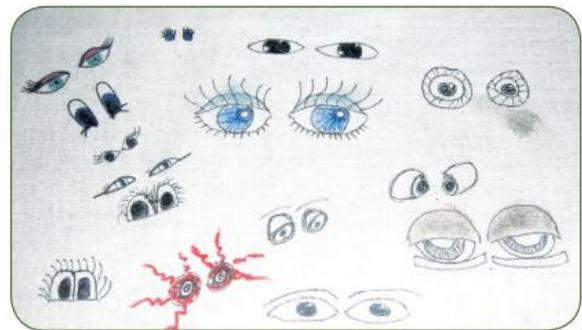


A vintage brooch collection offers inspiration for a variety of facial expressions.

- You can use pigment pens especially formulated for marking on cloth. This is a simple process and is the method that has been used on this project. To gain success with this method, practise your skills on a piece of calico until you decide the style and shape that you want to create. Carefully mark in balance points and reproduce your design. These pens are permanent, so you need to be confident and well rehearsed before you add your final touches.
- Some dolls remain faceless as a feature.
- Hand embroidery is another method for adding your character's features. It is a more controlled method and can add texture to the doll and help sculpt the face. If you make a mistake it can be carefully unpicked.
- You can hand-paint your features using fabric paints. Texture can be added by using puff, slick or glitter fabric paints.
- Commercially produced faces can be transferred onto your doll. There are also doll face stamps available, and you can buy features such as glass eyes or use beads.
- You can also use a combination of pigment inks, paints, make-up and freehand embroidery stitches, such as chain stitch, stem stitch and backstitch.



Pigment pens and specialist tools to use for creating your features



A variety of facial expressions created using pigment pens

The alternatives are many and varied. Methods can be combined or you may invent your own original method.



Drawing eyes with Pigma pens



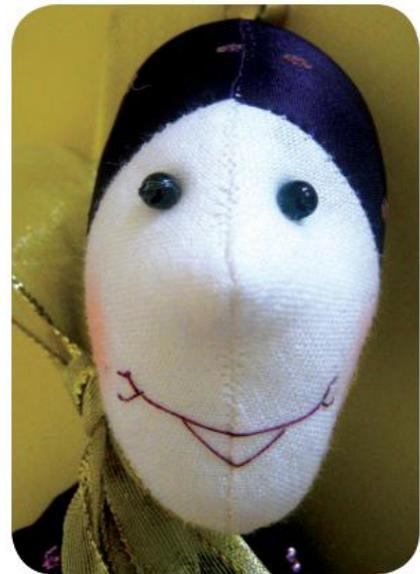
Hand-painting



Eye detail



Glass google eyes



Hand painting, chain stitch, stem stitch, backstitch and beaded eye detail

## Finishing and attaching the head

### Method

- 1 Attach the fringe by hand-stitching it in place.



- 2 Machine stitch the head and notch the seam allowance.



- 3 Stitch through the nose to create soft, sculpted facial features.



Finished head

## Accessories or embellishments

This project uses ribbon roses, tulle, beading, antique buttons and hand-dyed mulberry bark and Angelina fibres to create wings.

### Ribbon roses

It is easy to obtain small amounts of beautiful ribbons. The assortment is extensive, from sheer organza, wired edge, silk and satin to embroidered brocades. There are many types of methods to create ribbon roses and flowers.



To research the different methods of creating ribbon roses, visit the Offray website and follow the how-to tutorials, which show you how to create different types of flowers.

The following technique was used to create the roses on this doll project.

### Method

- |  |  |   |
|--|--|---|
| <p><b>1</b> Place the ribbon under the sewing machine and run a row of gathering stitch along one edge. Gathering stitch consists of two rows of stitching 0.5 cm apart and 1 cm from the cut edge of the fabric. Use SL 4 and SW 0, and only backstitch on one end of the ribbon.</p> | <p><b>2</b> When the stitching is finished, gently gather the ribbon by pulling the unsecured thread end.</p> <p><b>3</b> To form the rose, hold the secured end in one hand and begin to spiral the gathered ribbon loosely around the knot with your other hand.</p> | <p><b>4</b> Wrap it tightly at first to form a 'bud', then continue wrapping more loosely so that it flares out and acquires an open rose effect.</p> <p>Secure the rose in place by hand-stitching the base.</p> |
|--|--|---|

### Beading

Beads add a three-dimensional quality to a textile arts piece. Beading is quite time-consuming and can be expensive. As it takes up a great deal of time, it is advisable to use quality components that will stand up to time and use. Strong beading thread is essential, as is a beading needle which is very long and fine compared to conventional embroidery needles or sharps.

There are many types of beads on the marketplace so it should not be too hard to source something you like and will fit the theme of your project.



Simple backstitch was used to secure these seed beads in place.

## Activity 5.9 Bead research

- Write two to three paragraphs outlining the history of beads and bead trading in society.
- Outline six different types of beads (for example seed beads, bugle beads, lamp work, sequins, crystal beads and wooden beads) and explain how you would attach each type of bead to a textile arts item such as a doll. Ensure that the method includes sewing and not gluing in place.
- Outline the difference between a beading needle and a conventional sharp needle.
- Explain the importance of using beading thread when working with beads.

## Angelina-fibre wings

Angelina fibres are polyester textile fibres. They can be spun, woven, layered, trapped and bonded.

There are two types of Angelina fibres: hot fix and standard. The Angelina fibres used in this project are hot fix. They are soft, lustrous fibres that will bond to each other at relatively low temperatures to produce a non-woven type of fabric. Bonding occurs when the hot fix Angelina fibres soften and fuse together.

To bond, place the fibres between two sheets of baking paper. Use an iron on the 'silk' setting and gently move the iron back and forth over the surface of the baking paper. The fibres bond quite quickly, so keep checking your Angelina fibres to monitor the progress. Too much heat or pressure can change the original qualities of the fibre so that it becomes quite dull and takes on a matt appearance.

After bonding has occurred you are left with a sheet of webbed, non-woven sparkling fabric that is easily peeled from the baking paper. Angelina fibres can then be pleated, crimped or heat-set into formations. If you do not have access to Angelina fibres you can use Crystal Shred, which is available in most dollar-stretcher type shops (for example the Reject Shop). It has a coarser finish and is not soft or as fine as Angelina fibres. It does, however, still bond and is quite useable on this type of project.



Angelina fibres



Angelina fibres can be purchased through the Thread Studio website.

## Method

- 1 Prepare the shape of the wings using the Angelina fibres.



- 2 Lay out the design for the wings, and attach it to the mulberry bark.



- 3 Bond the fibres to the hand-dyed mulberry bark with vliesofix, making sure the iron is on a synthetic setting.





Fairy queen doll



Indian sari doll



Crazy hair doll

## Evaluating



### Activity 5.10 Evaluation

Take a photograph of your doll and write a paragraph evaluating the success of the project, referring mainly to the aesthetic features. Include comments on the choice of features you selected, such as hair, clothing and facial expression. Hand in your evaluation to your teacher with your completed doll project.

### Activity 5.11 Quick quiz

- 1 Name three essential tools for cloth doll making.
- 2 Explain the process of drop spinning.
- 3 Outline the difference between using a beading needle and a conventional sharp needle.
- 4 What are Angelina fibres? Name three ways you could use Angelina fibres in a textile arts project.

# 6

# Project work focus area: non-apparel

## Outcome, knowledge and skill statement

### Outcomes:

- 5.4.1 selects and uses appropriate technology to creatively document, communicate and present design and project work
- 5.5.1 critically selects and creatively manipulates a range of textile materials to produce quality textile items
- 5.5.2 selects appropriate techniques and uses equipment safely in the production of quality textile projects
- 5.5.3 demonstrates competence in the production of textile projects to completion
- 5.6.1 evaluates textile items to determine quality in their design and construction

### Students learn about:



#### Designing

- Generating and developing design ideas
- Communication and presentation of design ideas



#### Producing

- Management of project work
- Simple pattern production
- Calculating textile requirements
- Sequencing of construction for a textile item



#### Evaluating

- Evaluating the quality of textile items

# Focus area: non-apparel

**Non-apparel** items are functional textile items and include projects such as toys, bags, umbrellas, tents, backpacks and sleeping bags. Commercial patterns can be purchased for non-apparel items, but once you are an experienced pattern-maker you will find it quite easy to create patterns for these projects. As non-apparel items are usually more functional than aesthetic, you will need to consider the end use of the item to ensure the techniques selected allow the item to function for its intended purpose. For example, if you are making a backpack, you will need to select a strong nylon fabric which will not be damaged through wear and tear. Extra stitching will be required to reinforce the straps so they do not come apart when the bag is filled with heavy items.



## Project 6.1 Christmas stocking

**Suggested duration:** 6 weeks

**Task:** Design, produce and evaluate a non-apparel item suitable for use as a Christmas stocking. A Christmas stocking must meet both functional and aesthetic **performance criteria**. A stocking is functional, as it must be able to hold Christmas gifts, but is also aesthetic, as it will be used to decorate the house before Christmas and create a festive feel.

The Christmas stocking featured in this chapter will be constructed using the crazy patchwork technique. This technique incorporates irregular shapes stitched together. The shapes are first decorated using different textile techniques and then joined together to form the front of the stocking.



Red Christmas stocking



Purple Christmas stocking



Crazy patchwork

# Designing



## Sources of inspiration

Inspiration for Christmas stockings may come from many sources, including images of Christmas, colours which represent Christmas and textile techniques. The meaning of Christmas varies around the world.



Sources of inspiration

### Activity 6.1 Christmas

As a class, share your experiences of Christmas. In an A3 folder, write down words or create quick thumb sketches that reflect the class's experiences. Use this collage to inspire your Christmas stocking.

### Activity 6.2 Design inspiration

Using A3 paper, cut out the shape of a Christmas stocking and paste it into your A3 folder. Cover the stocking shape with images of Christmas and text or quotes and textile techniques which are suitable for a Christmas stocking. You might also add Christmas fabrics and notions. Label your sources of inspiration.



Simple Christmas stocking shapes

## Generating and developing ideas

Designing a Christmas stocking is easy. A sample shape is included in this chapter, but you can easily design your own. Before you start designing your stocking, consider the following:

- If you are just learning to sew, select a simple shape; but if you are more experienced, design a jester stocking or a stocking with a heel. But remember: the more intricate the shape, the more difficult it will be to stitch around and create an accurate shape.

- The stocking size will be determined by what you intend to place in it and where you plan to hang it. By using paper and a photocopier or overhead projector you can accurately enlarge patterns to the required size.
- Many different fabrics are suitable for a Christmas stocking. If you intend to use the crazy patchwork technique you will only need very small fabric pieces. You may even be able to make the stocking from fabric pieces left over from other projects. Medium-weight woven fabrics are the easiest to use, but knit fabrics can be used if they are stabilised to reduce the stretch. If you are making the stocking as a gift, use silk or satin fabrics to create a stocking with lustre. The addition of braids and yarns, and the use of rayon and metallic embroidery threads will also add lustre to the stocking.
- The techniques selected for the Christmas stocking will depend on your level of expertise and the equipment available. If you do not have an embroidery machine to create text, use hand embroidery or digital imaging. Machine or hand **couching** can be used instead of embellishing. When designing crazy patchwork stockings plan the placement of techniques on paper before creating the stocking. Do not place two pieces with similar embellishment together.



Knitted Christmas stockings



Patchwork Christmas stockings



Embroidered Christmas stocking



Felt Christmas stockings embellished with appliqué

## Activity 6.3 Design ideas

### Visual design development

- 1 Complete three thumb sketches on an A3 page to show the design development for the Christmas stocking.
- 2 Label all design features and design inspiration; include measurements.
- 3 Evaluate each design using a PMI chart.

### Presentation of design ideas

- 1 Complete a final rendered drawing of the Christmas stocking on an A3 page, including the front and back view.
- 2 Label all design features and design inspirations.

# Producing



## Managing project work

It is very important to plan and organise the stages involved in the design and production of your Christmas stocking to ensure it is completed on time and to a high standard of manufacture. The time allowed for the project will determine the amount of detail that can be incorporated into the stocking.

### Activity 6.4 Gantt chart

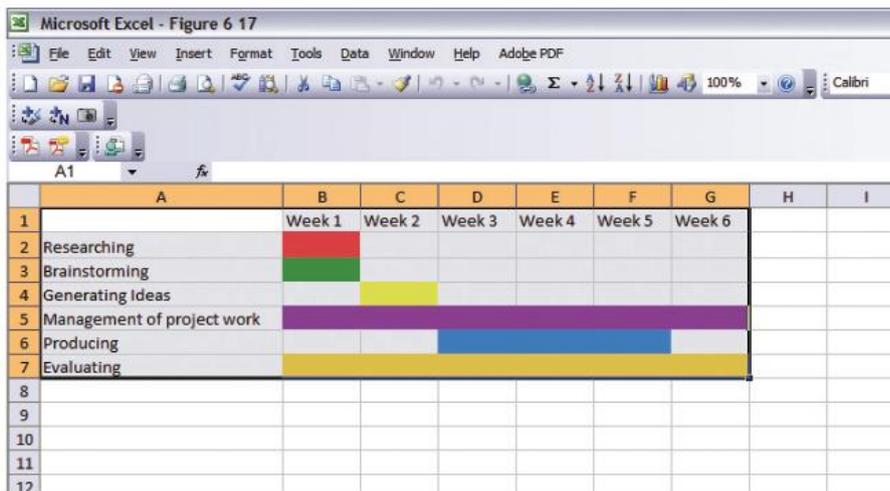


Create a Gantt chart for your Christmas stocking project using Microsoft Excel. A Gantt chart shows the timing and duration of each step in a planned activity.

- 1 Open a new spreadsheet.
- 2 Name the spreadsheet 'Gantt chart Christmas stocking' and save it to your home directory or thumb drive.
- 3 Type the following text into the required cells.

Cell	Text	Cell	Text
A2	Researching	BI	Week 1
A3	Brainstorming	CI	Week 2
A4	Generating ideas	DI	Week 3
A5	Management of project work	EI	Week 4
A6	Producing	FI	Week 5
A7	Evaluating	GI	Week 6

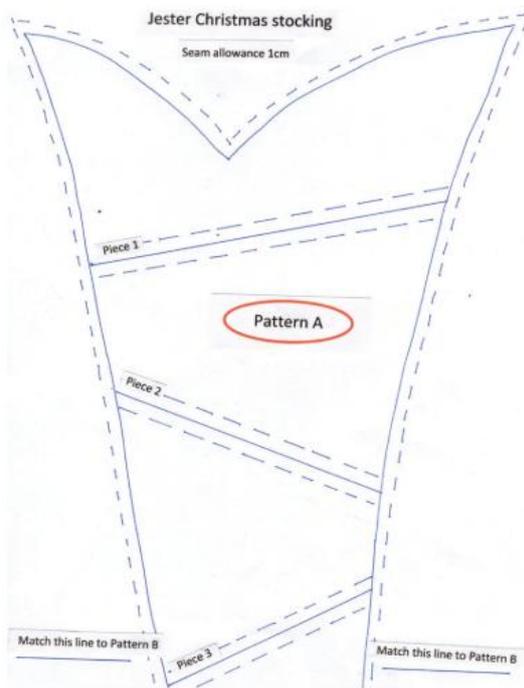
- 4 Using the fill tool, select a colour for each of the steps in the process and fill the weeks when you will complete each step. If you right click on the cell and select format cells from the drop down menu, you will be able to add patterns and coloured designs to the cells.
- 5 When the Gantt chart is complete, save it and then print it and place it in your A3 folder.



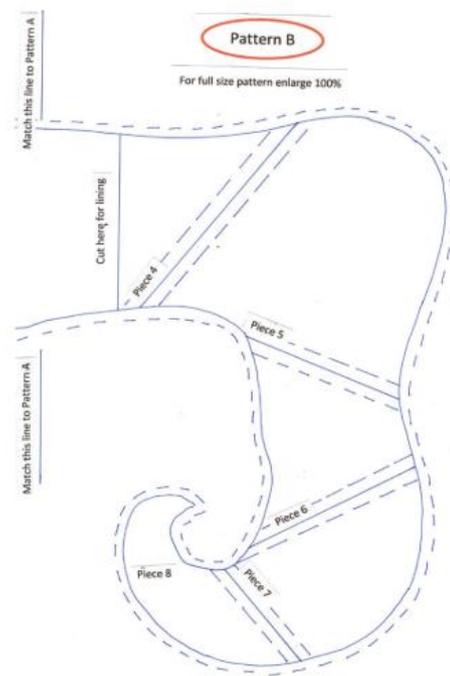
Sample Gantt chart for the Christmas stocking project

## Simple pattern production

Use paper or cardboard to create a template for the Christmas stocking. The pattern must be enlarged to A3 size using the photocopier if you wish to make it the same size as the sample in the textbook.



Template jester stocking pattern A



Template jester stocking pattern B

Jester Christmas stockings designed by Aurora Davison, Chatswood Sewing Centre, NSW.



Visit the Textiles Technology website ([www.nelsonsecondary.com.au/textilestech/](http://www.nelsonsecondary.com.au/textilestech/)) for an A4 version of these patterns.

Before you start to produce the pieces for the stocking, you will need to plan where each decoration technique will go on the crazy patchwork stocking. The position on the stocking will determine the size for each piece. Always create the embellishment on a piece of fabric that is larger than the required piece and then cut out the pattern piece after you have completed the decoration technique.

### Materials list

- 40 cm backing fabric
- 40 cm iron-on Pellon
- tear-away stabiliser
- a variety of fabrics for front stocking pieces, e.g. satin, printed cottons, silk dupion'
- 10 cm cord or ribbon
- rayon embroidery thread
- metallic embroidery thread
- novelty yarns
- gold bell

## Christmas stocking techniques

The textile techniques suitable for a Christmas stocking include machine embroidery for text or images, twin needling, use of foil to create designs, and pleating, embellishing and heat distorting of fabrics. You might decide to create a traditional stocking in red and green or use contemporary colours, such as purple or aqua. You will find detailed instructions for the techniques used on the sample stockings on the following pages. For more examples of textile techniques see chapter 9.

## Creating images and text using the sewing machine

### Method

- 1 Decide which piece on the Christmas stocking will be used for the image or text. When cutting the fabric you must make the piece the right size for the stocking piece, but it must also be large enough to fit into the embroidery hoop on the embroidery machine.
- 2 Each embroidery machine is different, so you will need to follow the instructions in the manual to embroider your text or image. Make sure you stabilise the fabric before placing it in the embroidery hoop. Lightweight fabrics or slippery fabrics, such as satin, may work better with two layers of stabiliser.
- 3 Use Bobbin Fil in the bobbin and thread the sewing machine with rayon embroidery thread.
- 4 Create the image or text.
- 5 When the stitching is complete, trim the threads with embroidery scissors and remove the tear-away stabiliser.



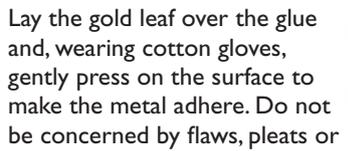
Stitching a Christmas motif



Husqvarna Viking Christmas motif embroidery designs  
Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)

## Gold leaf or schabin oro

### Method

- 1 To apply gold leaf to fabric, first paint the fabric with water-based glue designed for **découpage** on fabric. Allow the glue to dry for about 10 minutes, but make sure the glue is still tacky when you begin.
 
- 2 Lay the gold leaf over the glue and, wearing cotton gloves, gently press on the surface to make the metal adhere. Do not be concerned by flaws, pleats or puckers, as this adds character to the technique.
 
- 3 Place a piece of baking paper over the gold leaf and iron with a dry iron on the cotton setting.
 
- 4 Using free-motion stitching, embellish the gold leaf using a variegated metallic thread. Before stitching, make sure you change the machine needle to a metafil needle.
 



Gold leaf and *découpage* glue can be obtained from S & S Creativity Unlimited. Visit their website for more information.

## Foil melts

### Method

- 1 Cut out stars from foil melts.



Foil melts

- 2 Place into position on stocking piece. Remember that each pattern piece has a 1 cm seam allowance, so make sure the stars are at least 1.5 cm from the fabric edge.



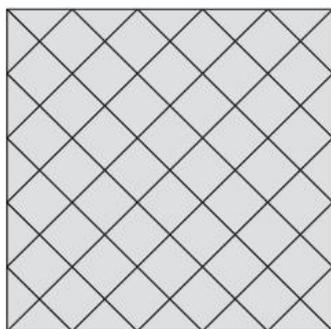
- 3 Cover the stars with an appliqué mat or baking paper and iron for a few seconds. Do not iron for too long, as the stars will lose their metallic sheen.

## Inktense pencils

Inktense pencils combine the brilliant intensity of pen and ink with the versatility of line and wash. The possibilities are endless and the results stunning. They can be used dry to create strong, vivid tones; you can then apply a light wash to achieve a translucent, ink-like effect. Once dry, the colour will not wash out and can be worked over again with both soluble and non-soluble media.

### Method

- 1 Cut fabric to the required size.
- 2 Iron Pellon to the wrong side of the fabric.
- 3 Using straight stitch with a stitch length (SL) of 3 and a stitch width (SW) of 0, quilt a grid pattern on the fabric.



Quilting grid

- 4 Paint alternate diamonds with textile medium, a product specifically designed to change ordinary acrylic paint into a fabric paint. Work a small area at a time so the medium does not dry.



- 5 Colour the painted diamonds with Inktense pencils, blending the colours.



Inktense pencils

- 6 Cover with baking paper and press the completed design to fix the colour.



Inktense pencils can be obtained from S & S Creativity Unlimited. Visit their website for more information.

## Kunin felt

Kunin felt is made from acrylic and polyester. You can create a decorative effect by using a soldering iron or creative textile tool to melt sections of the material. A creative textile tool has interchangeable heads that can be used to create different effects, such as melting and embossing.

### Method

**1** Cut the felt to the required size.

**2** Using metallic embroidery thread and free-motion stitching, create a circular pattern on the felt.

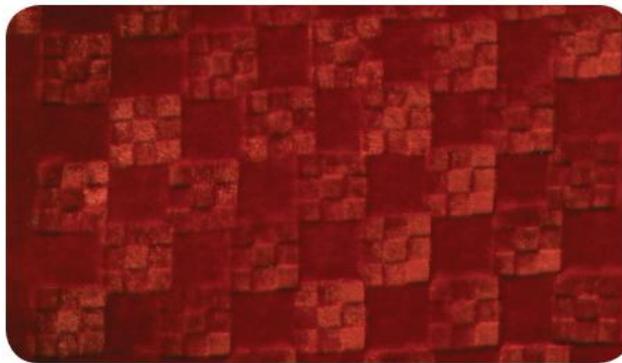


**3** Burn away sections of the felt using a soldering iron or creative textile tool to create a lace like pattern. Note: When dissolving fabrics with heat, always work in a well ventilated area. Make sure you cover the work area to prevent burn marks.



## Panne silk velvet

Using the nine-patch quilt block on the creative textile tool, emboss a pattern on the velvet.



Variegated panne velvet with embossed design

## Embellishing machine: couching

The embellishing machine has no threading, no tension and no bobbin. The fibres, yarns and fabrics are felted and meshed together by barbed needles.



Embellishing machine: Huskystar by Husqvarna Viking  
Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)

## Method

- 1 Use calico as a backing fabric and cut to the required size. Because the piece will shrink as it is embellished, make sure you cut the backing fabric larger than required.
- 2 Using **wool tops**, create a web by tiling the tops in one direction and then tiling across the first row in the opposite direction. If desired, add Angelina fibres.



- 3 As you place the web under the presser foot of the embellishing machine, adjust the height so the foot is just above the web. Embellishing is like free motion stitching: you can stitch forwards or backwards and left to right. To ensure you do not break any needles, keep to a moderate speed and make sure the web, yarns or fabrics used are not too thick.
- 4 Once you have created a web with the wool tops, lay a metallic yarn onto the web and embellish in place.



Embellished shape

## Embellishing machine: flowers

### Method

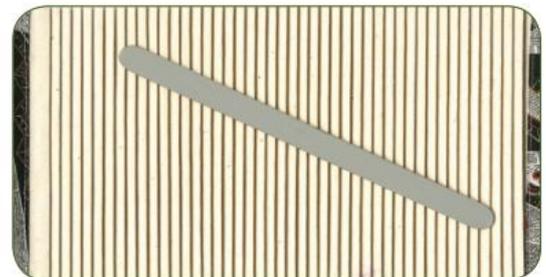
- 1 Cut out the stocking shape larger than the required size to allow for shrinkage during the embellishing process.
- 2 Cut flower shapes from a lightweight open-weave fabric. Cut three flower shapes for each flower.
- 3 Embellish two of the three shapes to the background fabric, then embellish the top flower and add a silver circle for the centre.



Embellished flowers

## Pleating

Many fabrics are suitable for pleating, but the best results will be achieved with lightweight to medium-weight fabrics. You can use a cloth pleater to create pleating for your Christmas stocking.



Cloth pleater

## Method

- 1 Cut the fabric to be pleated the same width as the cloth pleater, but at least twice the length. Press the fabric to remove any creases.
- 2 Position the pleater on the ironing board with the fold of the pleater facing away from you. Place the right side of the fabric on top of the cloth pleater.
- 3 Tuck the fabric behind each pleat by lifting the end of the pleat with the bar. Hold the pleat up with your finger; then tuck the fabric to the back of the pleater. Use the bar to ensure the fabric is in place. Repeat this step until desired length has been pleated.



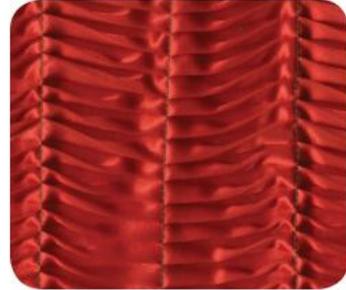
- 4 Spray the pleated fabric with iron-on starch and iron with a pressing cloth. Alternatively, you can place fusible interfacing, fusible side down, over the pleated fabric and fuse it to lock the pleats in place.



- 5 Allow the fabric to cool. Gently roll back the pleated fabric to release it from the cloth pleater.



- 6 Embellish the pleated fabric with straight stitch, SL 3 and SW 0, stitching the pleats in one direction then in the opposite direction for the next row.



- 7 Embellish pleats with decorative machine stitching.

## Decorative machine stitching

### Method

- 1 Cut the fabric to the required size for the stocking shape.
- 2 Stabilise with tear-away stabiliser.
- 3 Using rayon embroidery thread or metallic thread, stitch the piece with rows of decorative machine stitching. Do not reverse at the ends. Remember to change the machine needle to either an embroidery needle or metafil needle depending on the thread type.

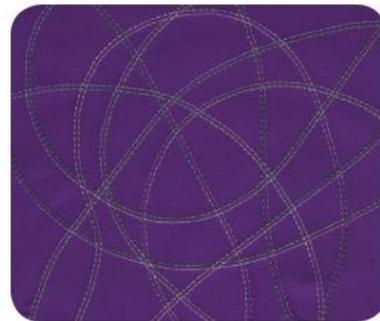


Stocking piece embellished with decorative machine stitching

## Twin needling

### Method

- 1 Insert a twin needle into the sewing machine. The sizing of the needles determines the space between them.
- 2 Always test the stitches carefully before using a twin needle, turning the hand wheel to ensure the twin needle does not hit the presser foot.
- 3 Using a rayon embroidery thread in the needles, stitch using straight stitch with SL 3 and SW 0.
- 4 Tighten the bobbin tension a little if you want to create a more raised effect on the right side.



Twin needling using variegated rayon embroidery thread

## Activity 6.5 Experimentation

The Christmas stocking is made using eight different textile techniques. Before commencing the stocking you will need to experiment to determine the most appropriate techniques for the project, taking into account your skill level and the equipment available. Read through the techniques above and look through chapter 9. Select eight techniques which appeal to you. Follow the instructions and complete a small sample of each technique. Complete a PMI chart for each sample to determine whether you will use the technique on your stocking.

Use the following format to document your experiment in your A3 folder.

- **Aim:** To determine the most appropriate techniques to use for a Christmas stocking.
- **Method:** *In this section briefly write the method you completed for each technique.*
- **Results:** *Include a neatly presented sample of each technique with a completed PMI.*
- **Conclusion:** *Write a statement explaining which techniques you will use for the Christmas stocking and why you decided to select these techniques.*

## Assembling the stocking

The next step is to cut out the patchwork pieces and join them together to form a stocking. It is important to plan your stocking so there are a variety of techniques, colours and textures throughout the stocking.

### Method

- 1 Lay the pattern pieces on the right side of the decorated fabric pieces. (A 1 cm seam allowance has been allowed on all pattern pieces.) Cut out all the stocking pieces.



Purple stocking pieces



Red stocking pieces

- 2** Pin two stocking pieces with right sides together. Due to the shape of the pieces, the point of the pattern piece will extend from the edge of the fabric to create the right shape at the side seam. Straight stitch together with SL 2.5 and SW 0. Reverse to secure the seam.



- 3** Press the seam towards the side that is less bulky.



- 4** Using straight stitch with SL 3 and SW 0, topstitch through the seam allowance approximately 3 mm from the seam edge. Do not reverse.



- 5** Repeat till all the pieces are joined.

- 6** Using the pattern, cut out the stocking back. Make sure you place the pattern on the wrong side of the backing fabric.

- 7** Cut out the stocking shape from the iron-on Pellon. Iron to the wrong side of the stocking. You can use wadding if you prefer, but you will need to zigzag around the edges to secure it to the stocking.

- 8** Pin the stocking front and back with right sides together. Stitch around the stocking, leaving the top open, using a straight stitch with SL 2.5 and SW 0. Reverse to secure the seam.

- 9** Clip around the curves and grade the seam allowances. To grade the seams, cut each layer back slightly lower than the next to reduce thickness. This helps to create an accurate shape when the stocking is pulled through to the right side.



- 10** Using the pattern, cut out the stocking lining. A Christmas print cotton fabric is ideal for the lining.

- 11** With right sides together, stitch the side seams of the lining, using a straight stitch with SL 2.5 and SW 0. Reverse to secure the seam.



- 12** Cut a 10-cm length of cord or ribbon and fold in half. Position the cord on the side seam along the top edge of the stocking. Secure using straight stitch.



- 13** With right sides together, place the stocking inside the lining piece and pin, matching the side seams.

- 14** Stitch around the top edge of the stocking, then clip and grade the seams. Pull the stocking through to the right side.



- 15** Press over a 1 cm hem on the bottom edge of the lining (wrong sides together) and stitch close to the fold, using straight stitch.



- 16** Place the stocking around the free arm on the sewing machine and top stitch around the top of the stocking.



- 17** Hand-stitch the bell to the toe of the stocking.



## Activity 6.6 Producing and evaluating

Complete the following activity in your A3 folder.

- 1 In table form, list all the fabric and notions required for the Christmas stocking project. Include the quantity purchased and the cost.
- 2 Include samples of four textile materials (fibre, yarn or fabric) which were used in the stocking. Name each material and identify the fibre composition. Justify the selection of each material, based on its textile properties.
- 3 Develop an evaluation sheet for the Christmas stocking and give it to one of your peers to complete. Ask them to evaluate the quality of the stocking in relation to design, functional requirements, aesthetic aspects, construction, fabric selection and notions used.

## Activity 6.7 Quick quiz

- 1 Identify the aesthetic and functional performance criteria for the textile materials used in the Christmas stocking.
- 2 Compare and contrast the advantages and disadvantages of creating a time and action plan using a table in Microsoft Word to creating a Gantt chart using Microsoft Excel.

## Project 6.2 Knitted bag

**Suggested duration:** 6 weeks

**Task:** Design, produce and evaluate a non-apparel item suitable for use as a shoulder bag. A bag must meet both functional and aesthetic performance criteria.

## Activity 6.8 Functional and aesthetic performance criteria

Identify the functional and aesthetic performance criteria for each of the bags pictured.



Backpack



Golf bag

# Designing



## Sources of inspiration

When you are designing a bag, inspiration may come from many different sources. These can include:

- historical sources for bag styles
- cultural motifs for decoration
- contemporary textile materials for construction.

### Activity 6.9 Design inspiration

Using A3 paper, cut out the shape of a bag and paste it into your A3 folder. Cover the bag shape with images of bags, text or quotes and textile techniques which are suitable for a bag. Also add fabrics and notions. Label the sources of inspiration.

## Generating and developing ideas

Bags can be made using lots of different textile techniques. The bag featured in this chapter has been knitted. Unless you are a very experienced knitter you would be best to follow a pattern.



The websites for the companies below have many free bag patterns which you can download.

- Knitting Pattern Central
- Garn Studio and Drops Design
- The Daily Knitter
- Lincraft

### Activity 6.10 Design ideas

#### Visual design development

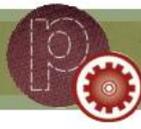
Visit the websites for the companies above and search for knitted bag patterns. Select three. Evaluate each pattern using a PMI chart, considering the following:

- degree of difficulty
- shape and size of the bag
- stitches used
- type of yarn
- your knitting expertise.

#### Presentation of design ideas

Include an image of the bag you have selected to knit. Label it, including the size of the finished bag, the stitches used and the type of yarn.

# Producing



The step-by-step instructions below explain how to cast on, knit garter stitch and stocking stitch, and cast off. These are the only knitting techniques you will require to complete the bags featured in this chapter.

Plain knitting is another term for garter stitch, which is constructed using knit stitches only. Stocking stitch is made by knitting one row and purling the next row. These rows are alternated till the desired length is reached.

Before starting your bag, it is important to practise or experiment with knitting stitches. Start with a plain yarn, not a novelty yarn. Eight ply yarn is a good thickness to practise with.

## Activity 6.11 Experimenting

Using the instructions in the 'Learn how to knit' section below, complete a sample of garter stitch and a sample of stocking stitch, each approximately 10 cm x 10 cm.

## Learn how to knit

### Casting on

Casting on is the first stage in creating a knitted item. It forms the first row of stitches, which is usually the hem or bottom of the item.

#### Easy step 1

Make a slip knot about 10 cm from the end of yarn and place it on a needle, as follows:



**A** Twist the yarns, right over left, forming a loop.



**B** Take the yarn to the back of the loop and put the point of the needle underneath the strand from the front of loop.



**C** Draw the strand up through the looped thread, forming a loop stitch on the needle.

**D** Pull the end of the thread to tighten the knot.

**E** The slip knot becomes the first stitch.

#### Easy step 2



**A** Insert the right-hand needle through the slip knot.



**B** Pass the yarn under and over the right-hand needle.

#### Easy step 3



Bring the new loop on the right-hand needle to the front under the left-hand needle.

#### Easy step 4



**A** Place this loop on the left-hand needle by inserting the needle through the stitch in the same direction as the right-hand needle.



**B** Slip the stitch off the right-hand needle.

#### Easy step 5



Insert the right-hand needle between the first two stitches on the left-hand needle.

#### Easy step 6



**A** Pass the yarn under the right-hand needle, create a loop and place it on the left-hand needle (as before).



**B** Continue in this manner until there are the required number of stitches on the left-hand needle.

## How to knit garter stitch

Garter stitch is formed by knitting each stitch of every row. It is the simplest of all knit patterns and is characterised by a looped surface that is identical on both sides.

### The first row: easy step 1



Insert the right-hand needle from front to back through the first stitch on the left-hand needle.

### Easy step 2



Beginning with the yarn at the back of the work, wind the yarn anticlockwise under and over the right hand needle creating a loop.

### Easy step 3



Bring the right-hand needle with new loop to the front under the left-hand needle.

### Easy step 4



Slip the old loop off left-hand needle. The new loop becomes a new stitch on the right-hand needle.

Repeat steps 1 to 4 until all stitches have been knitted and the knitting is now on the right-hand needle.

Congratulations! You have completed your first row.

### The second row

To begin your second row, transfer the needle with the knitting from your right hand to your left hand and repeat steps 1 to 4 (as before) until all stitches have been knitted and the knitting is on the right-hand needle once again.

## How to knit stocking stitch

Stocking stitch is created by knitting one row and purling the next. The knitted fabric has a definite right and wrong side. The right side is smooth (knitted side) and the wrong side is loopy (purl side).

### The first row: complete as for easy steps 1–4.

### Easy step 5



#### The purl row

Insert the right-hand needle from back to front through the first stitch on the left-hand needle.

### Easy step 6



Beginning with the yarn at front of work, wind the yarn anticlockwise over and under the right-hand needle, creating a loop.

### Easy step 7



Bring the right-hand needle with the new loop to the back under the left-hand needle.

### Easy step 8



Slip the old loop off the left-hand needle. The new loop becomes the new stitch on the right-hand needle.

Repeat steps 5 to 8 until all stitches have been purlled and the stitches are now on the right-hand needle.

## Cast off

### Easy step 1



Knit the first two stitches (as before).

### Easy step 2



\*Using the left hand needle, pass the first stitch over the second stitch.

### Easy step 3



**A** Slip the first stitch off the needle – one stitch is cast off. It is important to note that two stitches are required to 'cast off' one stitch.



**B** The second stitch remains on the right-hand needle.

### Easy step 4



Knit the next stitch. Repeat from \* until all the stitches have been cast off and one stitch remains on the right-hand side.

### Easy step 5



Cut the yarn, leaving an end of about 8 cm. Draw the end through the last stitch and pull to fasten off.

Steps courtesy of Patons Yarns Australia

## Skills project Prism tote bag

The prism tote bag is a simple project to make once you have learnt the skill of stocking stitch. It consists of simple knitted rectangles joined together to form a bag.

### You will need:

- 3 balls of Prism yarn by Lincraft
- 6 mm knitting needles
- yarn needle
- crochet hook for fringe

**Measurements:** approx. 32 cm wide x 27 cm high

**Tension:** 14 stitches (sts) wide x 20 rows high to a 10 cm square over stocking stitch using 6 mm knitting needles

### Method

#### Front:

- 1 Cast on 44 sts. Knit the first row and purl the second row.
- 2 Repeat these two rows four more times (i.e. eight more rows) so you have 10 rows in all.
- 3 Purl one more row, then knit the next row so you have 12 rows of knitting.
- 4 Repeat the 12 rows three more times. You should end up with 48 rows.
- 5 Cast off.

#### Back:

- 1 Cast on 44 sts.
- 2 Repeat the 12 rows as for front five times. This means the back of the bag will have one more set of 12 rows than the front, to form the flap.

#### Strap:

- 1 Cast on 12 sts.
- 2 Knit every row until the strap measures 90 cm or the length required.
- 3 Cast off.

#### To make up:

- 1 With right sides of the front and back together, sew down each side and across the bottom using the yarn needle and Prism yarn so that the back flaps over the front.
- 2 Turn the bag right side out and sew the strap to each side.
- 3 Cut lengths of yarn 15 cm long to make a fringe for the flap. Fold each one in half and, using the crochet hook, pull the folded end through the lower edge of the flap. Place the ends of the piece of yarn through the loop at the folded end and pull to make a slip knot. Continue this along the front flap to create the fringe.



Prism tote bag

## Skills project Small felted bag

### You will need:

- 4 balls of Balmoral Tweed wool by Lincraft (two in one colour and two in a complementary colour)
- 5-mm knitting needles
- a wool needle
- a button to complement the yarn

**Tension:** Unfelted: 14 sts x 18 rows gives 10 cm x 10 cm

**Note:** This work is knit with two threads of yarn together (one of each colour) at the same time to create a mottled effect.

This work consists of two pieces. The first piece forms the flap, back, base and front of the bag. The second piece forms the sides and strap.

### Method

#### Piece 1: bag

Beginning at the flap end, with two threads of yarn together (one of each colour) cast on 16 sts. **Row 1:** (RS) Knit. **Row 2:** (WS) Purl, increasing by one stitch at the beginning and end of the row (18 sts). **Row 3:** Create buttonhole. K7. Bring yarn to front, slip the next st purlwise and return the yarn to the back. \*Slip the next stitch knitwise and then on the right needle, pass the second stitch over the end stitch and drop it off the needle. Repeat from \* three times. Slip the last cast-off stitch to the left needle knitwise and turn the work. Move the yarn to the back and use cable cast on to cast on five stitches as follows: \*Insert the right needle between the first and second stitches on the left needle, draw up a loop, and place it on the left needle. Repeat from \* four times. Turn the work. With the yarn to the back, slip the first stitch from the left needle knitwise and pass the extra cast-on stitch over it to close the buttonhole. Knit to the end of the row. **Row 4:** Purl. **Row 5:** Knit, increasing by one stitch at the beginning and end of the row (20 sts). **Row 6:** Purl. Continue in stocking stitch, without increasing, knitting on the right side and purling on the wrong side, until work measures 43 cm, finishing on a purl (WS) row. Begin forming the base. **Next row:** Purl (RS)

**Next row:** Knit (WS) **Next row:** Knit (RS) **Next row:** Purl (WS). Continue in stocking stitch until work measures 52 cm from beginning, finishing on the right side. **Next row:** Knit (WS). **Next row:** Purl ((RS). **Next row:** Purl (RS). **Next row:** Knit (RS). Begin forming the back of the bag. Continue in stocking stitch until work measures 74 cm from beginning, finishing on a knit row (RS). **Next row:** Knit (WS). Cast off loosely purlwise.

#### Piece 2: strap and sides

Using two yarns together as one, cast on 12 sts. **Row 1:** Knit (RS). **Row 2:** Purl (WS). Continue in stocking stitch until work measures 23 cm. This has formed one side of the bag. Knit every following row (garter stitch) decreasing a stitch at the beginning and end of the next 2 rows (8 sts). Continue in garter stitch, without decreasing, until work measures 142 cm from the beginning, ending on the wrong side.

The following instructions form the other side of the bag. Next two rows, increase by a stitch at the beginning and end of each row (12 sts). Next row and following rows, work in stocking stitch, until work measures 168 cm, ensuring the right side (knit) corresponds with the right side (knit) at the other end of the strap. Cast off loosely.

#### Finishing

Sew in ends. Fold piece 1 at the fold lines to form base of bag. Sew the side pieces of piece 2 to make the sides of the bag, using blanket stitch on the outside of the bag. This keeps the edges of the bag sharp. When the bag is felted these stitches will blend.

#### Felting instructions

Place bag into a pillowcase and tie a knot in the end, or use a rubber band to seal it. Place the pillowcase into the washing machine with hot soapy water. Agitate in the wash until the bag is felted to the desired size and density. Check regularly, as the shrinking may happen suddenly. You can also do this by hand in a bucket if you want to conserve water and get a workout at the same time! Once the bag is felted (the stitches begin to look blended together), remove and rinse in hot water (cold water will make it shrink more). Roll in a towel, squeezing out the excess water. Shape the bag by pulling and tugging. Stuff the bag to ensure it retains the desired shape as it dries (a hand towel should do the job). It will probably take a couple of days for the bag to dry completely. When bag is dry sew on a button to correspond with the buttonhole.

**Note:** Quantities of yarn are approximate and will vary between knitters.

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www.lincraft.com.au



Lincraft small felted bag

## Activity 6.12 Producing and evaluating

Complete this activity in your A3 folder.

- 1 In table form, list the yarn required for the knitted bag project. Include a sample, and identify the fibre composition, the quantity purchased and the cost.
- 2 Evaluate your completed bag. Comment on the effectiveness of the design (function and aesthetics), quality of production and suitability of yarns.
- 3 If you were to create the project again, what modifications would you make? Why?

## Activity 6.13 Extension activity

- 1 Do a web search on the history of knitting.
- 2 Read through the information you have found.
- 3 In your own words, write a half-page report on the history of knitting. Use A4 paper.
- 4 Complete another web search, this time on textile artists who feature knitting as part of their work. Textile artists include Prudence Mapstone, Lynne Johnson, Tim Klein, Mirjam Bruck-Cohen and Althea Crome. You can also search on 'knitting textile artist'.

Include three images of knitted textile items, either apparel, textile arts or furnishings. Identify the functional and aesthetic performance criteria for each item. Comment on the features of the item that appeal to you.



## Area of study: Design

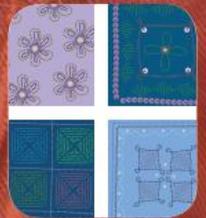
This area of study investigates the work of textile designers. By examining the practice of textile designers, you can model the work of designers in the production of your own project work.



**Chapter 7** The practice of textile designers

**Chapter 8** Elements of design

**Chapter 9** Methods of applying colour and decoration



# 7

# The practice of textile designers

## Outcome, knowledge and skill statement

### Outcomes:

- 5.2.1 explains the creative process of design used in the work of textile designers
- 5.2.2 generates and develops textile design ideas
- 5.2.3 investigates and applies methods of colouration and decoration for a range of textile items

### Students learn about:

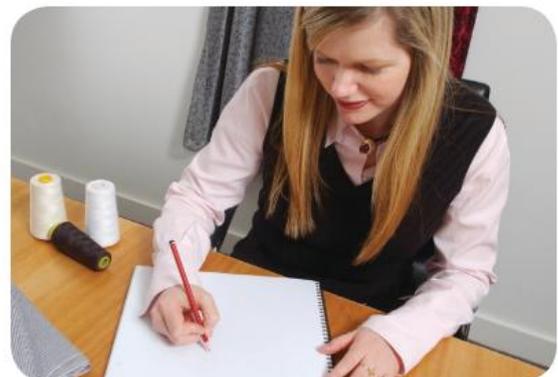
#### The practice of textile designers

- Textiles as a design medium
- Textile designers across the focus areas
- The creative process when designing with textiles
- Historical, cultural and contemporary sources of inspiration used by textile designers
- Features of design in the construction of textile items
- Elements of design
- Factors affecting design; functional requirements and aesthetic aspects

## What is design?

Design is a complex word to define. It means so many different things to different people. Design can be seen as an action that transforms a thought into a proposal for something useful, whether it is a shirt, a logo, a couch, a service or a process.

A good design is not just about aesthetics; it is also about the usefulness and purpose of the product. The success of a design usually comes down to a balance of both aesthetic and functional features. Many items in our immediate environment are designed, and those design decisions have been incorporated into products that have an impact on our lives daily. A design doesn't have to be innovative, different or impressive to be successful, as long as it's meeting the intended end use.



A designer ready to start a sketch, with fabric samples and cotton reels nearby.

## Textiles as a design medium

Textile fibres, yarns and fabrics have inspired designers for centuries. The possibilities for designing and creating products with textiles as a design medium are endless. Textile materials are featured prominently in the designs of all the focus areas: apparel, costume, furnishings, textile arts and non-apparel. Textiles, as a medium of design expression, can inspire designs ranging from the simple modest loincloths of the ancient Egyptians to amazing historical retellings such as the Bayeux Tapestry, to haute couture and runway fashion.



Traditional spinning turning fibres into yarns



Little girl learning to knit from her great-grandmother



Australian stockman's hat made from felted fibres with leather band and opal



Baroque tapestry with decorative elements

Designers have used fibres which have been felted, spun, bonded, knitted together, woven and braided in a variety of patterns and combinations to create their products. Textiles have been used for totally aesthetic features, such as fine woven silk fabrics for a traditional cheongsam, and for very functional features, such as the padding in the interior linings of snow apparel.

This type of handmade table mat was very fashionable in the 19th century. It is now typical of retro and rustic designs.



### Activity 7.1 Design survey

Survey the following interiors, or find pictures in magazines, and list the different items in these spaces that have been created using textiles as a design medium. Complete this activity in your A3 folder.

- A lounge room
- A bedroom
- A car
- A bathroom
- A movie theatre
- A museum

# Textile designers across the focus areas

## Apparel designer: Peter Alexander

Peter's first job in the fashion industry was as a shop assistant at Sportsgirl. In the beginning he had no real interest in the industry, but was soon fascinated by how it worked. The opportunity arose to apply for a cadetship with Sportsgirl. The successful applicant would be trained in all aspects of the business. Fifty people applied, but Peter was successful. The cadetship gave him a strong understanding of the fashion world. By the time he left Sportsgirl at the age of 21 to start his own business, Peter was the state visual merchandiser for Victoria. This involved developing floor plans and three-dimensional presentations of goods and services in order to maximise sales, including window areas, interior point-of-sale displays and special promotions.

Peter's first business venture was a range of umbrellas called Storm Sticks. Peter purchased the umbrellas wholesale and printed quirky phrases on them. Although the umbrellas sold well, he started to wonder what he could do through the summer.

## The development of peteralexander

Peter was on a holiday to Hong Kong when he purchased a pair of cream-and-black spotted pyjamas from a department store. On returning to Australia, Peter researched the sleepwear market and found very little available in fashion pyjamas. He asked his female friends and discovered many bought men's pyjamas to wear to bed with a T-shirt. Peter's new business idea was born: he would design and create sleepwear for girls in their late teens and twenties.

The only problem was that Peter had no experience in manufacturing. A friend took him to a fabric shop, where he selected suitable fabrics; then he took the cream-and-black spotted pyjamas to a pattern-maker to create a pattern. This is basically the same pattern that is used today. With a loan of \$3000 from his father, Peter had the first garments made. He decided to call his label peteralexander and include the brand name on the outside of the garment instead of the inside.

Peter's first pyjamas were purchased by Myer and were sold within two days. Myer ordered more; soon David Jones also wanted to stock them. The business started to grow because it had the right product at the right time. Myer ordered 2000 pairs of spotted pyjamas but, due to delays in shipment from China, Myer pulled out and Peter was left with 2000 pairs of spotted pyjamas. The decision was made to place an advertisement in *Cleo* and the response was huge. A mail-order business was born.

The catalogue is an essential part of a mail-order business. The first peteralexander catalogue was four pages; today it is up to 52 pages in length.

Peteralexander is a boutique, personality-based brand; it is not mass market or fashion focussed. It has grown from its mail-order beginnings to feature concept stores which bring the catalogue alive. The stores involve more than clothes hanging on racks; they are a memorable experience that engages people's senses on all levels.

peteralexander

Peteralexander logo



Peteralexander concept store



Visit the peteralexander website to find out more and see Peter's designs.

Peter now designs tracksuits, bed linen and underwear, but with the same trademark quality, affordability and service.

Peter believes establishing a successful brand is like baking the perfect cake. The basic ingredients include:

- a sound financial plan
- market intelligence
- personal drive
- commitment and energy
- good old-fashioned marketing.

However, there must be a need for the product, so market research is essential, the timing is critical and you need lots of luck!

## The designer's creative process

### Sources of inspiration

When Peter designs a new collection, his source of inspiration is developed into a story or theme which influences all aspects of the range. The theme for the 2008 winter collection is African Dreams, Winter Wilderness. The collection is inspired by the story of a countess who left England in the 1920s and moved to Tanzania for an adventure.

### Visualising, generating and developing ideas

Peter works as part of a team when he is designing a new nightwear range. Once he has decided on a theme, he looks through magazines and collects images which match the theme. These are used to create a storyboard with colour swatches, shapes, patterns and so on. The actual cut of the pyjamas changes little from collection to collection, but the colours and prints vary with each collection and so do the accessories.

A colour palette is then chosen for the theme and Peter works with an in-house fabric designer, brainstorming appropriate fabric designs (for example checks or printed motifs). Then the concept goes to production to look at what fabrics to use, and especially what fabrics the design would look good on. Swatches are then made, and then samples of the whole garments.

At this stage the design team gets back together to consider what trims would look good, what colour drawstrings to use, where the labels will be attached and how to embroider the logo. Then they organise a photoshoot of the samples. Sample garments are made for approval and quality control before the bulk order is approved for manufacture. Once the sample garments are received, market research is carried out to ensure the product meets the needs of the target market.

Sometimes things change halfway through the process. Occasionally, it becomes obvious during a photoshoot that the top and bottom don't go together, so the design is modified. For example, a pyjama top may be changed into a nightie if it does not go with the pyjama pants.

At all stages, Peter is open to input from different people in the process, and can modify the design if there is a better idea.

### Design features and use of the elements of design

Design features are the parts of the design which make the textile item function for its intended end use. When Peter Alexander designs sleepwear he must ensure the textile items will be comfortable to sleep in and easy to care for. He must also include features such as openings and closures so they can be worn. Although Peter designs a new collection of sleepwear each season the design features are often similar.



Peteralexander 2008 winter collection



Peteralexander 2008 winter collection



Design features of peteralexander pyjamas pictured:

- yoke on pyjama top
- slip-front neck opening
- front gathering to attach to yoke
- knit fabric used in pyjama top
- drawstring pyjama pants
- flannelette pyjama pants.

### Elements of design: pyjamas

<b>Line</b>	<ul style="list-style-type: none"> <li>• The yoke creates a line dividing the front pyjama top, creating uneven balance.</li> <li>• The casing stitching creates a horizontal line around the top of the pyjama pants.</li> <li>• The hem stitching creates a horizontal line around both the pyjama top and pants.</li> </ul>
<b>Direction</b>	<ul style="list-style-type: none"> <li>• The positioning of the red flowers down the pyjama pants leads the eye from the top of the pants to the hemline.</li> </ul>
<b>Shape</b>	<ul style="list-style-type: none"> <li>• Flower and leaf shapes add contrast and interest to the design.</li> </ul>
<b>Size</b>	<ul style="list-style-type: none"> <li>• The flower shapes are the same size, but create contrast with the size of the leaf shapes.</li> </ul>
<b>Colour</b>	<ul style="list-style-type: none"> <li>• The colours in the pyjama pants are bright, whereas the pyjama top is black, allowing the outfit to create unity.</li> </ul>
<b>Value</b>	<ul style="list-style-type: none"> <li>• A variety of light and dark colours are used to create the pyjamas.</li> </ul>
<b>Texture</b>	<ul style="list-style-type: none"> <li>• The interlock in the pyjama top is soft and smooth. The flannelette pants are soft and fluffy.</li> </ul>

## Activity 7.2 Peteralexander

Using the image to the right, explain how the elements of design – line, **direction**, shape, size, colour, **value** and texture – have been used by Peter Alexander to create the desired effect for his sleepwear products. Describe how the pyjamas have been coloured or decorated.

Detailed information of the elements of design can be found in chapter 8.



## Costume designer: Catherine Martin

Catherine Martin has established herself as one of Australia's most talented costume and set designers. She was born in Sydney and attended North Sydney Girls High School; as a teenager, she was interested in fashion design and later fine arts. She began to study at Sydney College of the Arts, but decided to change direction and went on to work for a small fashion-design house in Sydney called Jaoquin, as well as design costumes for a small theatre company in Sydney. Catherine also auditioned for the National Institute of Dramatic Art (NIDA) and gained a place. Here she met and began collaborating with Angus Strathie, and was later introduced to Baz Luhrmann who came looking for a designer. Catherine later married Baz Luhrmann, with whom she co-founded their Sydney-based production company, Bazmark Inq. She also continued working closely with Angus Strathie.

Catherine collaborated with Luhrmann on the films *Strictly Ballroom*, *Romeo + Juliet*, *Moulin Rouge!* and *Australia*, while Strathie was co-costume designer on *Strictly Ballroom*, *Moulin Rouge!* and the Broadway production of *La Boheme*. Catherine went on to win two Academy Awards for *Moulin Rouge!*: Best Art Direction and Best Costume Design. She also won a Tony Award for Best Scenic Design of a Musical for *La Boheme*.



Catherine Martin (centre) at work on the set of *Australia*. *Australia* is an epic movie which features a stellar cast of Australian actors directed by Baz Luhrmann.

## The designer's creative process

### Researching

Catherine Martin says researching often begins with a collection of inspirational ideas from a wide variety of sources. Her research stems from the initial consultations with the director and reading the script, and gathers momentum as the project evolves. Each costume project begins its own journey through a creative brief from

the director (direction), the designer's own ideas and thoughts (self-direction) and collaboration to create a workable and appropriate product that connects with the audience and provides an authentic voice to the character. Catherine believes it is imperative that the costume closely aligns itself with the character, story and original ideas that the director has envisaged. She takes many steps to ensure her research is accurate and detailed, as she feels a sense of responsibility as a designer to be as prepared as possible and produce a body of work that will be an asset to the actors and director.

To research, Catherine uses combinations of library references, old books, photographic collections, illustrations, mail-order catalogues, periodicals, patterns and pattern books, travel, visits to museums to view collections, interviews, note-taking and extensive use of the internet. Research for the *Moulin Rouge!* included a visit to the Metropolitan Museum



Nicole Kidman wearing the iconic Red-room gown with bustle in *Moulin Rouge!*. The dress is made from satin and features a stunning corset. It was featured in the 'Spectacular Spectacular' exhibition at the Powerhouse Museum in Sydney. The costume epitomises Catherine Martin's attention to detail: it aligns with the character, Satine, and portrays the structural elegance and exquisite finishing details of fashion in 1890s Paris.

of Art in New York to view pieces from the museum's collection. Some of the costumes Catherine viewed had colour combinations that seem strange today, but were actually used in the late 19th century. These included olive greens with fluorescent blue trims, and combinations of oranges with vivid purples. The colour combinations were inspirational in building a colour palette for the costume designs in *Moulin Rouge!*

Research for *Australia* took a very different focus, as historical accuracy underpinned and accentuated the storyline of this epic film. As always, Catherine's attention to fine detail led her to pose such questions as, 'Did Aboriginal stockmen wear socks?'. To find out all she could, Catherine conducted extensive internet research and used photographic collections such as Picture Australia and the Thomson Collection, which features photographs showing the Aboriginal people of Arnhem Land in the 1930s. This research was necessary to give an authentic portrayal of the many Indigenous characters featured in *Australia*.



The Picture Australia website allows you to view online collections from Australian museums and libraries, including paintings, drawings, prints, posters, photographs and objects such as sculpture, scrimshaw, bark, costumes and weapons.

The Australian Stockman's Hall of Fame was another important source for Catherine when she was researching *Australia*. Visit their website for more information.

## Observation

Catherine Martin observes that the creative process in costume, set and production design can be quite overwhelming and scary. She believes it is imperative to keep the process ordered by creating manageable steps that are reviewed. This often includes time to absorb the ideas and self-critique. Catherine says that walking away from the project then revisiting it with fresh eyes will often give you a chance to reflect and help create a workable, appropriate product. This process, she believes, helps to reaffirm or change creative design ideas.

Catherine also believes that the actors bring alchemy between the clothes and the characters: 'Clothes maketh the man, but actors maketh the costume' and 'Nicole maketh the costume'. The actors' workshops feed into the design, and their insights into the characters help the designer understand the characters' nuances.

## Brainstorming and sharing ideas

Catherine Martin feels that collaboration, brainstorming and sharing of ideas are imperative to the creative design process. She finds it helpful to have three or four trusted friends look at her work, and invites them to ask questions based on their observations. The connection of costume and set design to the audience is essential. Director Baz Luhrmann and the creative design teams collaborate both on and off the set and are always committed to re-examining the design direction. An example of this includes the sharing of ideas for *Moulin Rouge!*. Although the costumes for *Moulin Rouge!* were based on rigorous historical research, the creative team decided it was more important to convey the story, the characters and the exuberant world of the Moulin Rouge than to have strict historical accuracy. Angus Strathie and Catherine Martin visualised the designs through research, meetings and consultation with Baz Luhrmann. Brainstorming and sharing of ideas continued throughout the process. On set Catherine and Angus worked with costume supervisor Julie Barton and costume-makers Phillip Moore and Rosie Boylan; a team of three people made 120 hats. Director of photography Don McAlpine collaborated and heightened the value that cinematography and light play on the costumes and sets by using more dramatic and intense colour blends. This can be seen when Nicole Kidman and Ewan McGregor are singing the 'elephant love melody' duet in the elephant house. The cinematic lighting is intensified to include a vivid blue light which transforms the night scene into a magical moonlit visual fantasy. The play of light, costume, music and drama is accentuated by the primary colour palette used by Catherine Martin in her costume designs.

## Visualising, generating and developing ideas

Collaboration is the key to success in visualising, generating and developing ideas. Catherine works closely with the director and all the others who have creative roles. Each story has its own process, and detail is extremely important. Visualising a colour palette for the costumes for *Australia* is a clear example. The film has the backdrop of the vast Australian outdoors, big crowds and large areas of space to cover. There are between 1800 and 2000 costumes, 400 of which are uniforms. Each uniform had to use colours that emphasised the story, denoted the different military roles and gave insight into each soldier's journey. To add to the authenticity of the uniforms, different khaki dye lots were used to signify different uniform issue dates for the Australian army actors. The military costumes, boots, shirts and so on were all designed and conceptualised nine months prior to filming.

In a way Catherine sees the colour palette of the film as a unifier. She believes colour formalises the thoughts and provides a broad picture of the overall design concept. The formal colour palettes were developed in consultation with Baz Luhrmann and the director of photography, Mandy Walker. Ultimately it is the role of the director to ensure the focus remains on the collaboration of crew, artists, designers, actors and so on, and that the production is aligned with the director's vision.

## Historical, cultural and contemporary sources of inspiration

Catherine Martin embraces all forms of inspiration. She steers away from other people's interpretations of design, preferring to rely on her own creative talents. She researches thoroughly for historical accuracy and uses the research in a variety of ways. She creates historically accurate costumes when the director requires authenticity, such as in the military costumes portrayed in *Australia*. This is in stark comparison to the costumes of *Moulin Rouge!* where the historical inspiration was used as a reference point to create a variety of spectacular costumes that reflect the characters. Catherine researches and acknowledges cultural

aspects, with designs inspired by traditional cultural ideas, such as her interpretation of the traditional Chinese cheongsam featured in *Australia*. Contemporary interpretation and ideals are also used in her costume design work. For example, the character Satie, the avant-garde composer, was given sunglasses to wear as part of his costume. Sunglasses are clearly not from the *Moulin Rouge* era, but rather signified Satie's alternative rock star status. This provided a link and identification for the audience, helping them to understand his character.



Nicole Kidman plays Lady Sarah Ashley in *Australia* and is featured in this photo wearing the costume known as the 'arrival suit'. Consultation and collaboration with experts showcased this suit, tailored by talented Australian Cheryl Pike.

## Design features and use of the elements of design



Design features of Catherine Martin's cheongsam costume:

- mandarin collar
- sheer organza overlay featuring Asiatic-inspired floral print
- darts for shaping bust area
- French seams
- red fitted satin undergarment.

Nicole Kidman wearing a red cheongsam on the set of *Australia*.

Elements of design: cheongsam costume	
<b>Line</b>	<ul style="list-style-type: none"> <li>• Contrasting fabric textures are used to create converging lines that complement the shape of the dress and accentuate the curves of the female form.</li> <li>• The Asian-style high neckline featuring mandarin collar emphasises the line and length of the torso.</li> <li>• The stitching of the French seams accentuates the sheer fabric and defines the signature lines in the design.</li> </ul>
<b>Shape</b>	<ul style="list-style-type: none"> <li>• The dress has an hourglass shape, which is complemented by internal shapes and the cut-out design feature at the front of the dress.</li> </ul>
<b>Size</b>	<ul style="list-style-type: none"> <li>• The size of the print accentuates the elegance of the fabric design and its harmony with the overall design concept.</li> </ul>
<b>Colour</b>	<ul style="list-style-type: none"> <li>• The red and gold harmonious colours complement and contrast with the main colours of the sheer floral feature fabric. The bright red satin serves as a unifier to the overall design concept.</li> </ul>
<b>Value</b>	<ul style="list-style-type: none"> <li>• A variety of light and dark harmonious colours are used to create balance in the design. The intensity of hue has a high saturation; it is the fabric weight that changes the value of the key.</li> </ul>
<b>Texture</b>	<ul style="list-style-type: none"> <li>• The sheer print and solid sheen of the satin add textural interest and quality to the garment.</li> </ul>



The black diamond costume worn by Nicole Kidman when playing the role of Satine in *Moulin Rouge!*. This image truly sums up Catherine Martin's quote, 'Clothes maketh the man, but actors maketh the costume... Nicole maketh the costume.'

## Functional and aesthetic factors affecting design

Every costume has its own journey, and so as each project evolves the balance between aesthetic and functional features of the costume arises. An excellent example of this is demonstrated in the overwhelmingly beautiful can-can dancers' skirts from *Moulin Rouge!*. The skirts are visually stimulating, but need to function as a dance costume as well. They allow freedom of movement for the dance; however an obstacle had to be overcome to make the skirts functional on the set. In the book which she co-authored about the production of *Moulin Rouge!*, Catherine wrote, 'The can-can ruffles underwent many processes before being sewn onto the skirt's interior; dyeing, pleating, embroidering, ribboning, braiding. Not only this, but there were five or six layers of ruffles per skirt. It took one person a week to gather them onto a can-can skirt – and there were 30 can-can dancers. Besides being extremely beautiful artefacts, the completed can-can skirts were heavy to wear. Caroline O'Connor, playing Nini Legs-in-the-air, wore braces on her shoulders to help support the weight that strained her hips as she danced.'

### Activity 7.3 Catherine Martin

Using the image above, explain how the elements of design – line, direction, shape, size, colour, value and texture – have been used by Catherine Martin to create the desired effect for this stunning showgirl-style costume. Describe how the costume has been decorated, and analyse its aesthetic and functional aspects.

Detailed information on the elements of design can be found in chapter 8.

## Furnishing designer: Freckles development team

### The development of Freckles



Freckles logo

In 2003, Kids at Home was founded by two former home fashions executives when they set out to find high-quality, decorative bed linen for their two young children. Recognising the lack of product available in the Australian retail market, the pair set out to research what was available in the worldwide market. Using the USA and UK markets as their principal guides, they soon determined that very few quality products at affordable prices were available anywhere, unless they were sold exclusively by individual retailers.

This research, coupled with the increase in consumer spending on young children, provided the initial idea that a void existed in the worldwide market. Further research indicated that spending on young children was at an all time high and continuing to increase as, for the first time; both parents and grandparents had incomes to spend on young children.

Products in the home fashions categories of bed and bath products, along with decorating and fun accessories, were identified, designed and sourced. All of the designs were built around themes and products that both parents and children would enjoy and could live with. This replaced the licensed characters and low-cost sports themes usually available to kids. A new option for decorating children's rooms was born. These products included quilt covers, pillowcases, sheets, coverlets, decorative cushions, curtains, rugs, towels and much more. The products were sourced from top suppliers in India and China to provide the best quality at an affordable price.

Freckles initially imported its own products for resale to top national retailers and specialty stores. In 2005 the company opened its first retail store and in late 2006 it launched its online store. The aim of these outlets was to position the brand properly and to retail the brand in an environment not provided by department stores or specialty stores.

As the business grew in Australia, competition entered the market and opportunities arose overseas. The company changed its business model to a brand marketing company, which is a company that sells products manufactured under their own brand name. They then licensed the brand, or gave permission to other companies to sell the brand, in selected countries to grow sales and distribution more rapidly.

So, less than four years later the company sells its products in 19 different countries and operates its flagship store in Randwick along with its very successful store website. The company expects to double its sales in the next 18 months and expand its distribution to another six countries.

### The designers' creative process

#### Researching

The research of new ideas comes from many sources, such as books, theatre, popular culture, fashion trends, current events and history to name a few. We continually look for new popular trends, as well as more classic children's themes when developing our unique quilts and bed linen. We travel frequently to various places around the world to collect ideas that are collated into storyboards, then developed further and eventually translated into final concepts. These ideas may be colours, pictures, textiles, photos, events, signs or anything that leads us to a concept.

In the past we have spent countless hours in libraries and book stores, which we still do to some extent, but today the infinite resources available online has placed much valuable research at our fingertips.

We constantly devour the internet for what is happening in the world of children so that designs and products remain relevant to their world and interests. Young children today have a much greater knowledge of the world than their parents at a similar age. They also demand greater input into their rooms and decoration than ever before.



Visit the Freckles website  
for more information.



Hula Girl storyboard

## Observation

Children respond to many stimuli, from colour to feel to friendly characters. Mums and dads respond to tasteful decorating, functionality and of course price. Achieving a balance of these factors is paramount in creating a popular design and product. Although the children are the users, the parents are the purchasers. Freckles has attempted since its creation to be a product that both children and parents enjoy and are proud of: part of home decorating is showing off the finished result.

It is also important to keep the target age bracket in mind when we start the design process. This is an important step, as our design and colour considerations vary considerably depending whether the design is to be for younger children, ages 2 to 6, or if it may better suit a child of 6 to 10, or even older.

Most of our designs can be defined easily by 'boy' or 'girl' but we also strive to include themes that can be unisex in nature, as many parents may wish to hand these down to the next child regardless of sex.

## Brainstorming

Ideas are progressed to concepts through brainstorming with our internal team of designers, marketers and retail managers. In addition we consult with our suppliers in order to discover the best possible way to realise the design, while always keeping in mind the functionality of the product, including shrinkage, colour-fastness, softness and longevity.

Through these idea sessions, storyboards and a lot of give and take, the design concept develops further identity and personality as we go. Layout and scale decisions for each design are planned based on the target age. Colour is an ongoing process and usually comes together at the end. We also consider the balance between the proposed new designs and the ongoing popular favourites. It is important to ensure that variety remains across the entire product range while still maintaining a unity to the basic colour palette that underpins the signature look of the Freckles collection.

## Sharing of ideas

The team approach to brainstorming creates both solutions and difficulties. Some solutions arise quickly and it is great fun tossing out ideas into a small group and seeing them develop into full blown commercial concepts almost within minutes. Sharing ideas has the benefit of multiplying the effectiveness of a commercial design. Bouncing ideas around the room and off of one other also builds a shared confidence in the design.

Difficulty arises when designs become 'hard work'. Days and occasionally weeks can be spent without yielding the intended result. When we cannot achieve consensus about a design, a difficult decision has to be made: whether to go forward regardless based on an individual's passion or vision, or whether it was perhaps never meant to be... Occasionally spectacular success is achieved with a spectacular risk!

Through sharing of ideas we generally get to a product that is commercially appealing, satisfies Freckles standards, and meets the intended retail price. Balancing all these important requirements is critical to the success of each design.

## Visualising, generating and developing ideas

Once we have the concept to an acceptable level, our textile designers work their magic to develop a design across many products and categories. This includes creating the proper pattern repeat and scale, selecting the final colours, developing accessories, and coordinating all these elements so that the consumer understands and desires the concept. Designs are then laid out beside each other to make sure the new range is balanced correctly and meets the defined criteria of the original range plan. Finally we assess how it should be packaged and merchandised to generate consumer appeal.

## Historical, cultural and contemporary sources of inspiration

We discover ideas for designing children's products everywhere. Inspiration can be sourced from classical children's books and stories which are then referenced against the popular culture additions to be found more recently in literature and the media. We aim to become unique by taking that popular theme, understanding its history, and then creating the Freckles version with the aim of becoming a classic interpretation in its own right. We try to be the version that others are measured against. For instance, 'pirates' is a timeless theme but may have become 'hot' again with boys for any number of reasons. There are many options for the design – the pirates can be jolly, dangerous, classical, modern or indeed a combination of all these elements. The trick to making it uniquely Freckles is to weave our understanding of all the historical, cultural and contemporary influences into the final result.

As a global business we also must take into consideration the do's and don'ts of cultures around the world. Designers quickly learn what is acceptable in many cultures through travel and research. Making sure we create a product acceptable to all cultures is again very important in achieving the right balance within our product ranges.

## Functional and aesthetic factors affecting design

Freckles' product philosophy is to use natural fibres wherever possible. Occasionally we use synthetics to create a fill or trim where no other option is viable, but the bulk of our products will always be 100 per cent natural fibres. We believe this to be an important feature and value addition to the Freckles brand.

In addition we must always consider the safety of children as our priority. All of our products, including trims, buttons and even construction methods, must pass stringent testing. Selling globally, this means our product team has to understand the various safety requirements around the world. This is a positive for us in that we can use the best thinking and safety standards from all around the world to ensure our products more than meet the local requirements.

Both safety and nurture have to constantly be in the mind of designers, and any perceived departures from this philosophy are resolved before the concept is permitted to proceed to sampling.

## Design features and use of the elements of design

Design features of Dragonfly furnishings:

- patchwork
- quilting
- appliquéd dragonfly
- tufted rug.



Freckles' Dragonfly furnishings collection

### Elements of design: Dragonfly furnishings

#### Line

- Quilting is used to create a line pattern on the quilt.
- Rickrack braid is used to create the zigzag line on the quilt.
- Horizontal lined fabric is used on the doona and curtains.

#### Direction

- Quilting creates a line which leads the eye up, down, across and around the quilt and cushion cover and suggests movement.

<b>Shape</b>	<ul style="list-style-type: none"> <li>• The dragonfly shape is the feature of the furnishing package and creates a common theme.</li> <li>• The square shape of the patchwork makes the design more detailed.</li> <li>• The circle shape of the rug creates contrast with the rectangular shape of the cushions and quilt.</li> <li>• The circles also add contrast to the curtain.</li> </ul>
<b>Size</b>	<ul style="list-style-type: none"> <li>• The square patchwork shapes on the doona and noticeboard are the same size, creating unity within the design</li> <li>• The dragonfly motif is used in different sizes depending on the type of furnishing item.</li> </ul>
<b>Colour</b>	<ul style="list-style-type: none"> <li>• An analogous colour scheme is used in shades of aqua, green and purple.</li> </ul>
<b>Value</b>	<ul style="list-style-type: none"> <li>• Bright colours are used to create an impact.</li> </ul>
<b>Texture</b>	<ul style="list-style-type: none"> <li>• A smooth texture is used for most of the furnishing items; however, quilting creates uneven texture and makes the quilt more tactile.</li> </ul>



Design features:

- quilting
- appliqué
- tufted rug
- patterned fabric.

Freckles' Motorclub furnishings collection

### Elements of design

<b>Line</b>	<ul style="list-style-type: none"> <li>• Quilting is used to create a line pattern on the quilt.</li> </ul>
<b>Direction</b>	<ul style="list-style-type: none"> <li>• The line of the quilting leads the eye across and around the quilt and suggests movement.</li> </ul>
<b>Shape</b>	<ul style="list-style-type: none"> <li>• The motorcar shape is the feature of the furnishing package and creates a common theme.</li> </ul>
<b>Size</b>	<ul style="list-style-type: none"> <li>• The motorcar motif is used in different sizes depending on the type of furnishing item.</li> </ul>
<b>Colour</b>	<ul style="list-style-type: none"> <li>• A triadic harmony colour scheme is created with shapes of red, blue and brown.</li> </ul>
<b>Value</b>	<ul style="list-style-type: none"> <li>• Dark and light colours are used to create contrast.</li> </ul>
<b>Texture</b>	<ul style="list-style-type: none"> <li>• A smooth texture is used for most of the furnishing items; however, quilting creates uneven texture and makes the quilt more tactile.</li> </ul>

## Activity 7.4 Freckles

Using the image to the right, explain how the elements of design – line, direction, shape, size, colour, value and texture – have been used by Freckles to create the desired effect for their Venus furnishing products.

Detailed information about the elements of design can be found in chapter 8.



Freckles' Venus furnishings collection

## Textile arts designer: Rowena Charlton

### The development of the machine embroidery business



Rowena Charlton

Rowena Charlton is a textile artist who creates sculptures from machine embroidery. She worked in the corporate sector for 20 years, but during this time maintained her interest in sewing, especially after the introduction of domestic computerised embroidery machines. After purchasing one of these machines and some machine embroidery 'digitising' software, which allows the designer to convert a picture into a stitch, Rowena began teaching digitising classes at her local sewing store, and eventually established her own machine embroidery business.

The equipment and software that Rowena uses is very specialised and, accordingly, is very expensive. To make her business viable, she spends most of her time creating machine embroidery designs for home sewers, teaching digitising software and writing articles for consumer magazines.

### The creative process

Every part of the creative and design process that Rowena uses involves computer technology.

### Inspiration

When selecting a theme for her work, Rowena is inspired by shapes, colours and textures that can be interpreted in machine embroidery. She is constantly on the look-out for interesting images: she keeps a file of print clippings, has a growing personal library of topical books and scours internet photo libraries for relevant material. Her collection includes diverse items, such as pictures of ironwork on church doors, books about Balinese masks, scraps of unusual fabric and even food advertisements featuring detailed photographs of fish. Rowena also carries a digital camera so that good design ideas never get away.

### Visualising, generating and developing ideas

Some of Rowena's ideas recur and evolve into projects. When visualising, generating and developing ideas, Rowena starts developing simple hand-drawn sketches of the sculpture to help define



Visit the Rowena Charlton Designs website to find out more and see Rowena's work.

the idea more clearly and to suggest how the various shapes will be created and what fabrics and threads will be used.

Rowena creates test pieces using patterns developed in Adobe Illustrator. She uses geometry to deconstruct three-dimensional objects into two-dimensional sections; if the object is irregularly shaped, she traces segments from the real item. She then converts the sections into simple outlines and saves them as picture files before importing them into digitising software. This part of the design process is the most exacting, and Rowena spends the majority of her time developing a precise pattern.



'My last supper cakes' by Rowena Charlton  
Photography by Peter Karp

embroidery, Rowena used geometry to develop patterns for more dimensional shapes, which included the apples and pears in activity 7.5. For 'My last supper' Rowena drew on the traditions of Baroque still-life painting, where artists created lavish arrangements of food and often included symbolic items to remind the viewer about the impermanence of life.

Rowena is developing her knowledge of model-making to create large but lightweight armatures for her increasingly complex machine embroidery sculptures. This has meant considerable exposure to the special effects industry, and Rowena is currently working on sculptures, based on traditional theatre masks, that require her to create face casts using special effects materials.

## Design features and use of the elements of design

Design features of 'My last supper':

- three-dimensional machine stitching
- variegated machine thread.

To test the pattern, Rowena creates the object in unembroidered calico. Complex objects can require up to 10 attempts before they are perfect. Once the pattern is complete Rowena digitises the pieces using specialised software to determine the machine stitch types, stitch angles and thread colours.

Once digitised, the information is saved to a file and transferred to an embroidery machine ready for stitching onto fabric. Prior to sewing out the entire piece, Rowena stitches small swatches to test the thread colour combinations. For particularly complex shading Rowena may stitch 10 or more samples to determine the best combination.

When all the sections are complete Rowena hand-stitches the various pieces together, fills the form with polyester fibre, and steams the object to smooth out the shape. Sometimes she sews additional cardboard, wire and plastic armatures into the object to give it structure.

## Sources of inspiration used by the designer

Rowena's inspiration is a surprising combination of traditional arts and modern technology. The fruit shown on page 152 was the result of seeing an antique hand-embroidered pin cushion in the shape of a strawberry. Having perfected this simple two-sided design in machine



'My last supper' by Rowena Charlton  
Photography by Peter Karp

### Elements of design: 'My last supper'

<b>Line</b>	<ul style="list-style-type: none"> <li>• Contrasting thread colours are used to create layers of cake.</li> <li>• Pink thread used to create zigzag icing on the doughnut.</li> <li>• Variegated thread used to create stripes on the coffee cup.</li> </ul>
<b>Direction</b>	<ul style="list-style-type: none"> <li>• Stitching on bread creates direction and leads the eye around the Nutella line.</li> </ul>
<b>Shape</b>	<ul style="list-style-type: none"> <li>• Three-dimensional shapes are used to represent food.</li> </ul>
<b>Size</b>	<ul style="list-style-type: none"> <li>• The food shapes vary in size to create a realistic supper.</li> </ul>
<b>Colour</b>	<ul style="list-style-type: none"> <li>• The thread colours are similar to the actual colours of the food items.</li> </ul>
<b>Value</b>	<ul style="list-style-type: none"> <li>• A variety of light and dark colours are used to create 'The last supper'.</li> </ul>
<b>Texture</b>	<ul style="list-style-type: none"> <li>• Machine stitching creates a smooth texture, but the food looks so real it makes you want to touch it.</li> </ul>

## Activity 7.5 Rowena Charlton

Using the image to the right, explain how the elements of design – line, direction, shape, size, colour, value and texture – have been used by Rowena Charlton to create the desired effect for the fruit products.

Detailed information about the elements of design can be found in chapter 8.

'Apple and pear'  
Photography by Express Publications



## Non-apparel designer: Kim Michaelides of Spencer & Rutherford



Spencer & Rutherford logo

### The development of Spencer & Rutherford

Like many little girls, Kim Michaelides once dreamed of buttons and bows, beautiful clothes and delicious fabrics. But unlike many others, Kim was able to turn her childhood fantasy into a globally successful reality as creative director of Spencer & Rutherford.

Kim's destiny came from a creative bloodline. She was born in Melbourne to a fashion designer mother and architect father, and was very close to her grandmother, a glamorous artist. In the same

way that some children cling to a well-worn teddy bear, Kim always had a stack of papers and a packet of coloured pens by her side. Her childhood was awash with fabrics and patterns; she played dress-ups in her grandmother's wardrobe and had afternoon teas in her mother's studio. She made her first clothes at the age of 12 for family and friends and nurtured an obsession with the colour pink, an enduring love to this day.

Like so many artistic people, Kim yearned to make use of her creativity after high school. While studying graphics, she designed clothes for a boutique and, after graduating, worked as an art director in advertising and design agencies. She met her husband Chris while working in an advertising firm, and together they started their own design agency.

One day, when a client needed a bag for a photoshoot, Kim and Chris designed it themselves. They had so many requests for more that Spencer & Rutherford was born. Chris became the company's co-founder and managing director, and Kim was the creative designer.

The company began in Australia's fashion capital, Melbourne. Along with tremendous growth within Australia, an impressive network of overseas outlets blossomed. Today, Spencer & Rutherford's designs are sold in New Zealand, France, Germany, the United Kingdom, Scandinavia, the United States and Canada.

Spencer & Rutherford, now a dynamic, successful global brand, has refined its individual design aesthetic to parade on the international stage while remaining true to its original vision.



Kim Michaelides at work in her home studio

Information courtesy of Spencer & Rutherford

## The designer's creative process

### Inspiration

To gain inspiration, Kim travels the globe, absorbing ideas from exotic cultures and sourcing products for her boutiques. Inspiration from her greatest influence, Chanel designer Karl Lagerfeld, is evident in the opulent colours and fabrics of her bags. The company's name harks back to an era of superb crafting and classic design. Kim's wish is for Spencer & Rutherford to be Australia's first truly iconic high-end accessories brand.



### Visualising, generating and developing ideas

Kim works from her home, on pure design. Surrounded by a cherished collection of teapots, vases and photo frames, Kim is back to working with what she has instinctively known from childhood is her biggest joy. She spends around nine months on each range. Inspiration is created from a variety of sources: contemporary, cultural and historical themes, such as florals and the underwater world.

Once the design line has been created Kim spends time working around the theme, sourcing fabrics and notions and developing bag designs. The bags are then produced using the signature theme, mixed media, sourced fine fabrics, trims and braids. Most of the bags are produced using a variety of sourced fibre, yarns and fabrics and significant themed braids, beads and appliques. For example, a mixed media collage may feature olive cotton/polyurethane and burgundy polyurethane/cotton in the body, polyurethane in the strap and cotton in the lining. Mostly the bags are produced offshore, in China.

### Evaluating

Evaluating the success of Spencer & Rutherford designs is quite easy, as it is evident through their sales around the world. Spencer & Rutherford products are available in David Jones and Myer and boutiques and retail stores in all Australian states and in stores worldwide.

### Historical, cultural and contemporary sources of inspiration used by the designer

Kim is inspired by a variety of sources which are evident in her body of work. The autumn/winter 2007 range 'High tea at the imperial palace' drew inspiration from the excess and glamour of 1920s Shanghai. Black

lacquered finishes, art deco motifs and wood block prints suggested a darker and more mysterious appeal.

Inspiration has also been drawn from the contrasts and serene beauty of culturally rich countries, such as Persia. India has also been a significant influence on Kim's work, with its cultural icons, such as the Taj Mahal, the fascination of Bollywood movies and the eternal inspiration from its contrasts: classic simplicity combined with the intense colours of vivid silk saris. Spencer & Rutherford's autumn/winter 2008 collection was inspired by the elegant mystique of Kashmir and Jaipur together with the vibrancy and exuberance of a Mumbai wedding.

The Spring/Summer 07/08 collection 'Ocean of dreams' celebrated the beguiling beauty of treasures in the underwater world. Entrancing sculptural shapes, curving silhouettes and exquisite textures culminate with whimsical motifs from secret sea gardens.



Natasha sea star



Birgitte cherry blossom

## Functional and aesthetic factors affecting design

Kim Michaelides' designs achieve the perfect balance of aesthetic and functional features. All bags serve a functional purpose; that is, to discreetly and safely carry personal effects. The main functional feature of a bag is containment, and Kim artistically designs these bags around themes. The closure is always carefully considered in the design for both aesthetic and functional reasons in a Spencer & Rutherford creation.

## Design features and use of the elements of design

Design features of Birgitte cherry blossom bag:

- elegant patchwork vase-shaped bag
- gold leather fold-over closure catch and lock feature
- genuine leather sturdy riveted straps.

### Elements of design: Birgitte cherry blossom

<b>Line</b>	<ul style="list-style-type: none"> <li>• Contrasting panel colours are used to create converging lines that complement the shape of the bag.</li> <li>• Antique-style cotton lace is used to emphasise the line.</li> <li>• Striking red leather trim outlines and defines the line of the bag.</li> </ul>
<b>Direction</b>	<ul style="list-style-type: none"> <li>• Stitching and lace features create direction and lead the eye around the shape of the bag.</li> </ul>
<b>Shape</b>	<ul style="list-style-type: none"> <li>• The bag has a vase shape that is complemented by internal shapes.</li> </ul>
<b>Size</b>	<ul style="list-style-type: none"> <li>• The size of the bag is functional and makes effective use of internal shape.</li> </ul>

<b>Colour</b>	<ul style="list-style-type: none"> <li>• The thread colours complement and contrast with the main colours of the floral panel features. The bright red serves to unify the overall design concept.</li> <li>• The gold leather features complement the locking system and rivets on the handle. The gold colour also suggests opulence.</li> </ul>
<b>Value</b>	<ul style="list-style-type: none"> <li>• A variety of light and dark colours are used to create Birgitte cherry blossom.</li> </ul>
<b>Texture</b>	<ul style="list-style-type: none"> <li>• The suede, leather, machine embroidery and antique-style lace add textural quality to the patchwork bag.</li> </ul>

## Activity 7.6 Kim Michaelides

Using the image at right, explain how the elements of design have been used by Kim Michaelides to create the desired effect in this elegant bag.

Detailed information on the elements of design can be found in chapter 8.



Scarlet wishing well

## Activity 7.7 Case study review questions and activities

Visit the Spencer & Rutherford website, then complete the following activities in your A3 folder.

- 1 Describe the target market for Spencer & Rutherford products by using the following formula:
  - Product: describe the range of products available.
  - Price: record the price ranges of the products.
  - Promotion: explain how Spencer & Rutherford promote their products.
  - Placement: where can you purchase Spencer & Rutherford products?
- 2 Describe one of the current Spencer & Rutherford ranges.
- 3 Outline two sources of inspiration Kim Michaelides has used in her designs.
- 4 Sketch and render your favourite bag design and label the features.
- 5 Decide on a theme and design a range of three bags. Consider shape, colour, texture and line.
- 6 Mount your designs on A3 card. Title your designs and write a short paragraph describing your range. Use descriptive language similar to the storyboards used by Spencer & Rutherford.

# 8

## Elements of design

### Outcome, knowledge and skill statement

#### Outcomes:

- 5.2.1 explains the creative process of design used in the work of textile designers
- 5.2.2 generates and develops textile design ideas
- 5.2.3 investigates and applies methods of colouration and decoration for a range of textile items

#### Students learn about:

##### Elements of design

- Line
- Direction
- Shape
- Size
- Colour
- Value
- Texture

##### Factors affecting design

- Functional requirements
- Aesthetic aspects

The elements of design are the tools a textile artist uses to communicate feelings and ideas visually. Each element can be isolated as a component of the design work and used to analyse the visual design. Each element can also be combined with a number of other elements to create a successful textile project. The way in which elements of design are used can change the emphasis of the design point or feature. An example of this might be combining different lines to create texture and pattern.

Textile designers combine many different elements of design to add aesthetic appeal to their work.

A variety of bag designs demonstrating colour, line, texture, form and direction





The elements of design can work in combination to achieve outstanding textile project design. These three tailored winter coats demonstrate excellent balance of colour, line, shape and texture.

This canary yellow dress demonstrates the visual elements of colour and line. The deep silver V-shape ensures interest is generated as the eye is drawn to this focal design point.

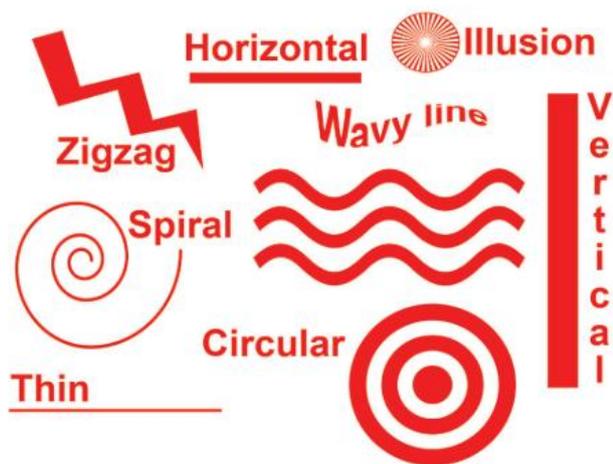


## Line

Line is one of the building blocks of design. Line can be defined as an element which leads the eye around a design, shape or form. Line can form contours and outlines and create shapes and patterns. It may be continuous or implied by the edges of shapes and forms. As an element of design, lines can stand alone or be part of another graphic element. Lines can define, organise, emphasise and divide areas of a textile project. Line expresses the mood, feeling and emotion of a project design.

Characteristics of line include:

- **width:** thick, thin, solid, dashed, tapering, uneven
- **length:** long, short, continuous, broken
- **focus:** textured, hazy, sharp, blurry, fuzzy, choppy, variable
- **feeling:** elegant, flourished, sharp, jagged, graceful, smooth, spiky.



Types of line and direction



The line in this traditional handmade *kente* cloth from Ghana demonstrates pattern, definition, division and organisation as design elements.

## Activity 8.1 Line

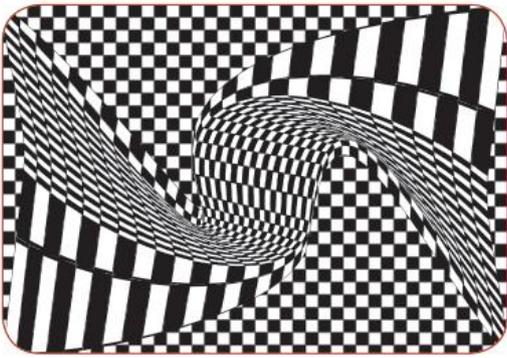
Complete the following table by identifying the type of line used in each textile item shown and explaining how the line affects the design of the item.

	Textile item	Type of line	How does the line affect the design of the item?
			
			
			

## Direction

While line is one of the most important aspects of design, it is the direction of the line which leads the eye up, down, across and around the design and suggests movement. In most designs there is a sense of movement in a direction across the design. Good designs lead the eye through the design in a deliberate fashion so that the viewer sees what the designer wants.

Characteristics of direction include straight, curved, wavy, horizontal, vertical, diagonal, curved, perpendicular, oblique, parallel, radial, zigzag, converging and spiral.



The direction of line leads the eye around the design.



The direction of line changes the depths and proportions of the design, as in these gloves.

## Activity 8.2 Direction

Complete the following table by identifying the type of direction used in each textile item and identifying how the line affects the design of the item.

	Textile item	Type of direction	How does the direction affect the design of the textile item?
			
			
			

# Shape

Shape can be defined as a line that intersects with other lines to enclose a space. Shapes are the result of closed lines. Shape is two-dimensional, as it has width and height, but no depth. (An enclosed three-dimensional space is called a form.) Shapes often make spaces in a design, and designers use these shapes and spaces to create new designs and sometimes illusions. Shape and space play an important role in defining a design arrangement.

Types and examples of shapes include the following:

<p><b>Geometric:</b> circles, squares, rectangles and triangles</p>	<p><b>Organic or natural:</b> butterflies, leaves, seashells, flowers</p>	<p><b>Free-form, non-objective:</b> a paint splash</p>	<p><b>Positive:</b> a regular drawn shape placed on a background</p> <p><b>Negative:</b> a space where a shape is suggested by a background that is filled with colour, texture, line, pattern, etc.</p>
			
<p>Geometric shapes</p>	<p>Organic shapes</p>	<p>Free-form, non-objective shapes</p>	<p>Positive and negative shape suggestions</p>

## Activity 8.3 Shape

Complete the following table by identifying the type of shape used in each textile item and identifying how the shape affects the design of the item.

	Textile item	Type of shape	How does the shape affect the design of the item?
			

# Size

Size is another of the basic elements of design. It refers to variations in the proportions of objects, lines or shapes. There is a variation of sizes in objects, either real or imagined. Each design you create has a physical mass. Additionally, each element within the design, such as graphics, photo prints, lines, text and shapes, has its own size relative to the whole project piece.



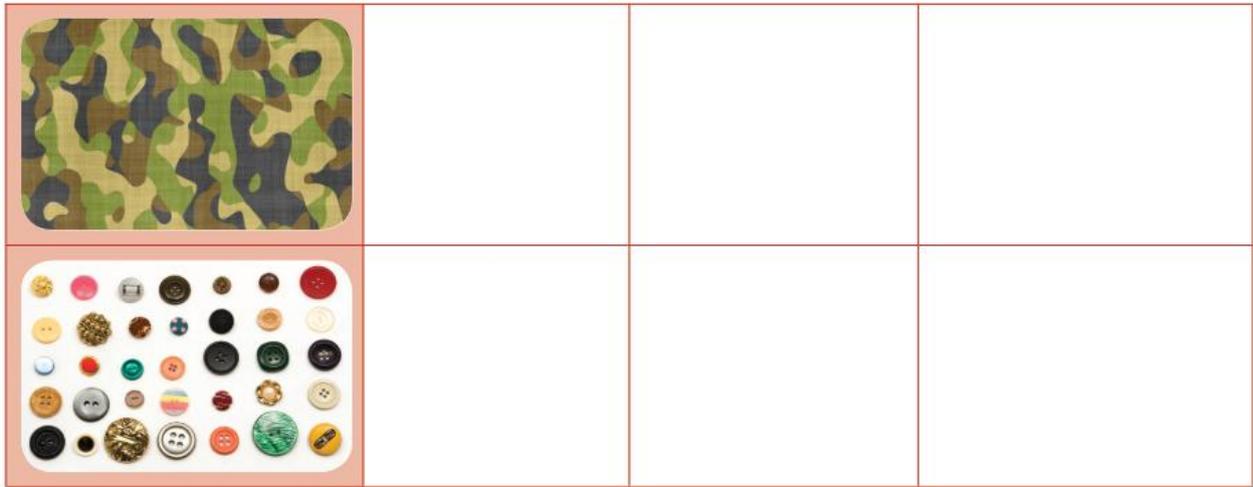
Size

## Activity 8.4 Size

Complete the following table by identifying the type of size used in each textile item and identifying how the size affects the design of the item.

	Textile item	Size of item, shape or notion	How does the size of the shape in pattern, placement or notion affect the overall design of the item?
			

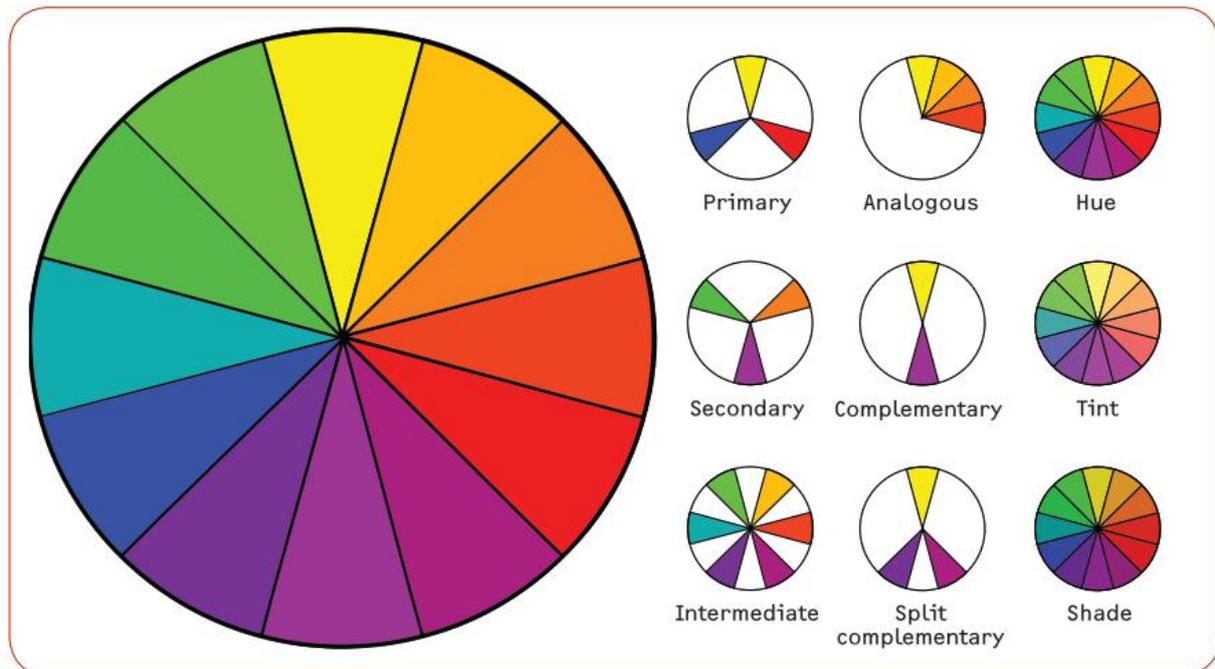
Continued overleaf



## Colour

Colour is probably the most important of the elements of design. Colour is often one of the first elements to draw us in. We respond to colour physically, emotionally and psychologically.

The colour wheel is a tool that designers use for creating different colours and colour schemes.



The colour wheel

Types of colours include:

- **primary colours:** red, yellow and blue
- **secondary colours:** orange, purple, green.

Primary colours cannot be mixed or created from other colours; they must be bought in some form. Secondary colours can be created by mixing two primary colours.

## Activity 8.5 Colour

Complete the following table by designing one T-shirt and copying the design three times. Colour your T-shirt using three different colour schemes. You can use the primary and secondary colour wheel to help you with your colour schemes.

T-shirt design	Colour scheme	Describe how changing the colour scheme affects the design.
	Primary	
	Secondary	
	Any combination of primary and secondary colours	



Primary and secondary colours



## Colour schemes

Colour schemes are achieved when colour combinations are used to create a special effect. Types of colour schemes include the following:

<p><b>Analogous colour schemes</b> use colours that are next to each other on the colour wheel; for example, blue, blue-green, and green.</p>	<p><b>Triadic harmony colour schemes</b> use three equally spaced colours on the colour wheel; for example, yellow, red and blue.</p>	<p><b>Monochromatic colour schemes</b> only use one colour, but in different values and intensities.</p>	<p><b>Warm colour schemes</b> use colours from the red side of the colour wheel. They give the feeling of warmth; for example, red, orange and yellow are the colours of fire.</p>	<p><b>Cool colour schemes</b> use colours from the blue side of the colour wheel. They give the feeling of coolness; for example, blue is the colour of cool water and frozen ice lakes.</p>
				
<p>Indian sari: analogous colour scheme</p>	<p>Clown costume: triadic colour scheme</p>	<p>Shoe design: monochromatic colour scheme</p>	<p>Venetian carnival costume and mask: warm colour scheme</p>	<p>Blue and green patchwork quilt: cool colour scheme</p>

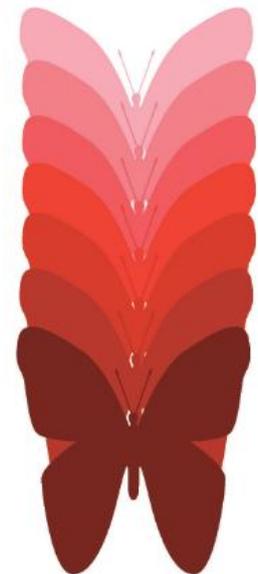
## Value

Value is the range of lightness and darkness within a picture. It is created by a light source that shines on an object, creating highlights and shadows. Value creates depth within a picture, making an object look three-dimensional.

Characteristics of value include:

- **Tint:** the amount of white in a colour; more white creates lighter values, such as light blue or pink.
- **Shade:** the amount of black in a colour; more black creates darker values, such as dark blue or dark red.
- **High-key:** used to describe an image with mostly light values.
- **Low-key:** used to describe an image with mostly dark values.
- **Value contrast:** placement of light values next to dark values to create contrast or strong differences.

A value scale is a scale that shows gradual change in value from the lightest value (white) to the darkest value (black).



Value scale

## Texture

Texture is the surface quality of an object; it describes the way something feels or looks. For example, a piece of silk may be soft and smooth, and a school bag may feel rough.

Texture can add a three-dimensional quality to a design. It is also used to create interest points and contour in a surface design and can be used to create illusions, for example in an animal print design such as faux fur print. Texture can be real or simulated.

Types of texture include:

- **real texture:** This is the actual texture of an object. A textile designer may create real texture in a textile project to give it visual interest or evoke a feeling, for example by combining denim and lace.

- **simulated texture:** When texture is simulated, a two-dimensional piece of work is made to look like it has a certain texture, even though it is in fact just a smooth piece of fabric, for example a snakeskin or animal-print pattern on polyester satin fabric.



A leopard's fur is the inspiration behind a range of textured and simulated texture fabrics.



Real texture: faux leopard-print fur



Simulated texture: leopard print on smooth face polyester satin



Leopard-print shoes, handbag, couch and slippers

## Factors affecting design

Design is usually a balance of aesthetic and functional components. Rarely does a design exist that is purely made up of one of these components. Successful design balances the right amount of aesthetic value with functional requirements. For example, a functional invisible zipper used in the construction of a year 10 formal dress is usually also chosen for aesthetic reasons; that is, to conceal unsightly zipper teeth and to match the colour of the dress fabric. Functional and aesthetic design can have the same value. For example in pattern-making the construction techniques and pattern shapes chosen are both functional and aesthetic.

### Aesthetic design

Aesthetic design relates to the visual appeal of an item. The elements of design – colour, line, direction, shape, size and texture – all work together to create a final vision. This can incorporate a surface decoration or a design that enhances the appearance of the textile item. The design can be simple or complex.

An individual's judgements about aesthetic design value are often a reflection of personal taste. Aesthetic design judgements can be based on the senses, the emotions or intellectual opinions. They can be affected by desire, culture, preferences, education, history, values, beliefs, fads and fashions. An aesthetic design can be successful because it closely follows the design protocols and keeps the design elements in harmony, or it can be successful because the design elements are in complete discord. Good aesthetic design is usually interesting and stimulating at the same time.

Examples of aesthetic design used in textile items include:

- **colour:** dyeing
- **line and direction:** printing patterns and designs
- **shape and size:** pattern-making decisions, such as the silhouette
- **texture:** embroidery and beading.

## Functional design

Functional design relates to items designed for a specific end-use or purpose. Functional design judgements are based on the way in which the item performs its required task. The value of functional design often determines the success of a textile product in the marketplace.

Examples of functional design in textile items include:

- pattern-making, which includes functional features such as seams and places for closures
- construction techniques, such as seams, which join areas of pattern design (for example patchwork) and areas of garments (for example shoulder seams and pockets)
- closures, such as zippers and other fastenings.

## Design case study: puppetry

This case study looks at Kim Carpenter's Theatre of Image (ToI) and, in particular, the ToI production *The Happy Prince*.

*The Happy Prince* deals with the vulnerability and struggle of life and death. It is a moving tale, embracing themes of:

- love and sacrifice
- pride
- indifference
- concern for others
- the timeless value of love and beauty.



Kim Carpenter, founder and artistic director of Theatre of Image



Scene from *The Happy Prince*

## The designer

Founder and artistic director of Theatre of Image, Kim Carpenter is one of Australia's leading theatre innovators. A graduate of NIDA and the English National Opera School of Design, he is a former co-artistic director of Nimrod Theatre and former head of design at NIDA.

Kim is also an artistic consultant to Disney Live, where his latest venture is *Pixel and Friends*. The colour production has been showcased at the Powerhouse Museum, where 62 original colour drawings from the visual script for *Pixel and Friends* were displayed in April 2008.



Visit the TOI website to investigate Kim's work. You can also view the company montage on YouTube.

## The production

In the ToI production of *The Happy Prince*, the story is presented by four angels who have come down from the spires and turrets of the London skyline to act out life's dramas with both tiny and large puppets and dolls. Their constant presence suggests good and evil fates toying with the fragile lives of human beings. The central characters, the Prince and the Swallow, are played by actors, but all the other characters are represented by puppets or objects manipulated by the four visiting angels.

## The characters

Trapped inside a flattering gold statue of himself as a young man lives the soul of the Happy Prince, seen as a beautiful old man. The dignity, wisdom and experience of the Prince contrast with the young Swallow's rough, streetwise understanding of the ways of the world. The Swallow provides a quirky humour and quicksilver speed in contrast to the stillness and nobility of the old Prince. In contrast to the gentle subtlety and lyricism of the play are the bureaucratic Mayor and the City Council – treated as satirical buffoons through puppetry.

## Functional requirements of the puppet designs

This production almost runs the full gamut of puppetry techniques: from black cut-out shadow puppets (the building and destruction of the statue of the Happy Prince); rod and **soft-sculpture** (the piggy City Councillors, the life-size sensuous reed that the Swallow falls in love with); and Bread and Puppet heads, which is a type of theatre that uses giant puppets to carry out a political or idealistic message (parodying the ruling class, the Mayor and the Lady-in-Waiting).

The puppets must function effectively throughout the story to ensure the connection between the story and the audience. The elements and principles of design must work together to complete the puppet.

- Rods must support the soft-sculpture structures of Kim's designs.
- Joints must move freely to allow the expression of each character's journey.
- Line, shape, size, colour and texture must be considered when representing the characters' feelings, emotions and moods.
- Outside materials must be suitable to support the design ideas, such as embellishments, embroidery and painting.
- Foam, padding, wadding and so on must stand up to repeated use.
- Puppeteers need to be able to work the puppet in seamless transition of movements.
- The puppets must work in harmony and/or contrast with the other dynamic designs in the production, such as costumes, sets, props, digital animation and lighting.

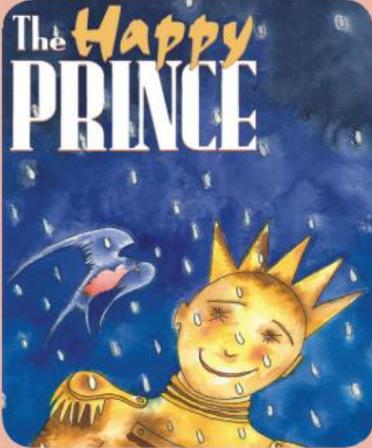
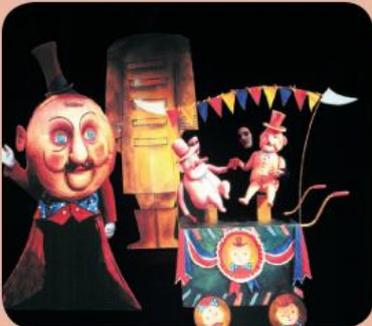
## Aesthetic requirements of the puppet designs

Puppetry captures the imagination of audiences through visual and textile arts as a form of communication. All of the elements of design must be considered when creating puppetry for stage performances. Because visual communication is very important the aesthetics of the design are essentially a design priority. The puppets need to help tell the story, so must be an integral part of the aesthetic harmony of the whole production design.

To critique the aesthetic design of the piece, you can use each element – line, direction, colour, shape, size, texture or value – or combinations of these elements to analyse the visual communication of the puppet design.

## Activity 8.6 Aesthetic and functional features of puppetry design

Complete the following table by analysing the aesthetic and functional features of each of Kim Carpenter's puppet designs from *The Happy Prince*.

Puppet design	Functional features	Aesthetic features
		
		
		

# 9

# Methods of applying colour and decoration

## Outcome, knowledge and skill statement

### Outcomes:

- 5.2.3 investigates and applies methods of colouration and decoration for a range of textile items

### Students learn about:

Methods of applying colour and decoration

- Dyeing
- Beading
- Printing
- Appliqué
- Quilting
- Embroidery
- Hand-painting

Textile designers use many different methods of colour and decoration to add aesthetic appeal to their work. These methods include the following techniques:



Dyeing



Beading



Printing



Appliqué



Quilting



Embroidery



Hand-painting

In this chapter you will have the opportunity to investigate and experiment with methods of colouration and decoration. Each method has its own appeal and is suitable for different textile end uses. Dyeing creates a fabric that is the same colour both sides; printing and hand-painting add colour and design to only one side of the fabric. Beading, appliqué, quilting and embroidery add dimension as well as embellishment to textile products. The functional requirements of the textile product will determine which method of colouration and/or decoration is most suitable.

## Activity 9.1 Colour and decoration

Complete the following table by identifying the functional requirements of the textile item and identifying how the textile item was coloured or decorated.

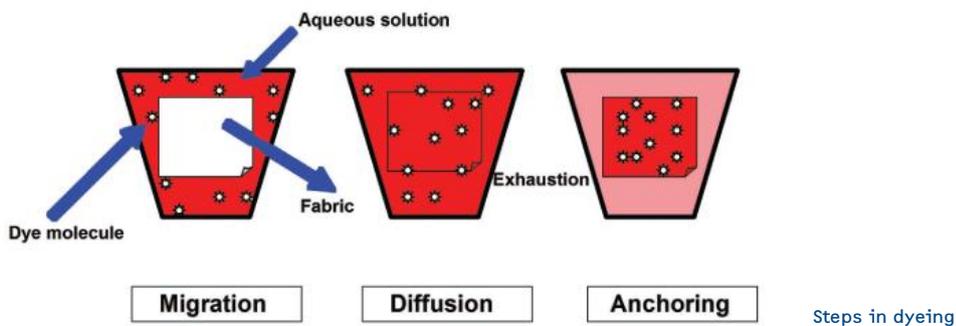
	Textile item	Functional requirements	Method of colouration or decoration
			
			
			

## Method of colouration: dyeing

Dyeing is the process of applying colour to fibres, yarn or fabric by immersing the textile in a dye bath or solution. Although there are many different methods of dyeing, the basic steps or principles are the same.

## Method

- |   |   |  |
|---|---|--|
| <p><b>1</b> Dissolve the dye stuff in a medium, usually water, to create a dye bath.</p> <p><b>2</b> Wet the fibre, yarn or fabric. This causes the fibres to swell, allowing a more even uptake of dye into the fibres.</p> <p><b>3</b> Immerse the fibre, yarn or fabric in the dye bath.</p> | <p><b>4</b> Agitate the fibre, yarn or fabric to improve the dye uptake. The process of dye molecules moving to the fibre, yarn or fabric is called migration. <b>Exhaustion</b> happens when the dye bath loses its colour as the textile is dyed.</p> <p><b>5</b> Diffusion is the movement of suspended or dissolved particles of dyestuff from a more concentrated to a less concentrated area. It occurs as the dye molecules move into the textile; this process can be improved by heating the dye bath.</p> | <p><b>6</b> The dye must be anchored to the textile to ensure it is colourfast. This occurs as the water temperature is gradually reduced. <b>Mordants</b> are chemicals used to fix dyestuffs into fabric during the dyeing process. They are also used to improve the fixation of the dye. These include chemicals such as alum or sodium chloride for synthetic dyeing, or household products such as vinegar and bicarbonate of soda for natural dyeing.</p> |
|---|---|--|



## Types of dyeing

Natural dyeing has been carried out in India and the Middle East for thousands of years. Most natural dyes come from plants or animals. Experimentation is required to select the right natural material to produce the desired colour. Natural dyes include onion skins, which produce an orange colour; tea leaves, which dye textiles a brown colour; and raspberries, which create a pink colour.

Synthetic dyes have only been produced since the mid-1880s. Today, most dyes used commercially are produced from coal- or petroleum-based compounds. Manufacturers now have the knowledge to produce the exact colour required by the textile designer.

## Occupational health and safety

Regardless of the type of dyeing you intend to undertake, you must implement the following safe work practices.

- Always wear rubber gloves and protective clothing, for example an apron or old shirt.
- Work in a well-ventilated area.
- Do not consume food in the dyeing area.
- Avoid inhaling the dust from dry dye powders.
- Avoid inhaling vapours from dye pots.
- Store dyes in a suitable place and in a suitable container.
- When mixing dyes with water, always add the dye to the water rather than adding the water to the dye.
- Use dyeing containers and equipment only for dyeing.
- Dispose of dyes carefully, considering environmental hazards, such as the possibility of polluting waterways or soil beds.

## Natural dyes from the Australian bush

The images and information regarding natural dyeing have been supplied by mixed-media artist Kath Wilkinson.

Dyes, oxides and stains collected from an Australian bush garden can be used to colour textile materials.

Examples of natural dyes include the following:



Visit Kath Wilkinson's website to find out more about this artist.



*Eucalyptus oreades* leaves



Tea-tree



Devil's twine



Soil



Wattle



Banksia



Fabric can also be buried to create colour.

### Occupational health and safety

Although you are using natural dye stuffs, you must still take into account safe work practices. Always work in a well-ventilated area, and do not use equipment that is used for any other purpose, for example food utensils.

### Collection of materials

If the dye materials are collected when the weather is hot and dry, the dyed colour is generally more intense. Weaker colours result when materials such as leaves and bark are collected in wet weather. If you are not using materials straight away, make sure that they are dried out of direct sunlight and rain and that there is plenty of ventilation to prevent the materials from becoming mouldy. Spread the material out on old screen doors or newspaper, or put it loosely into large paper bags. Material that has mould will still give colour, but it will corrupt the dye bath and the colour will not be as bright.

### Method

#### Preparation of materials

- 1 If using leaves, chop, tear or bruise them.
- 2 Chop bark and boil until the colour has leached from it. Leave the bark in the water until it has cooled, then remove.

- 3 If using roots, grind, grate or pulverise them.
- 4 Store collected dye material in cardboard boxes or large paper bags until you are ready to use it. Allow some air flow so that it does not become mouldy.

Bag the material into lots of 250 g. You can use old nylon stockings or small bags made from old net curtains. This makes straining the dye bath much easier, as the material is contained.

**Steps for natural dyeing**

- 5** To create the dye bath, either cover the collected material (dye stuff) with water and boil for 30 minutes, or soak the dye materials for a minimum of two weeks in water.
- 6** Strain off the dye solution or remove the bagged material.
- 7** Thoroughly wet the fibre, yarn or fabric to be dyed prior to immersion in the dye bath.
- 8** Boil for 10 minutes to 1 hour depending on the required intensity of colour.
- 9** Remove the textile, allow it to rest for 10 minutes and then dry.
- 10** Once dry, rinse the fabric in cold water, then dry it again.
- 11** For a deeper shade of colour, repeat the process in the same dye bath.
- 12** Label the textile to identify the dye stuff used.

**Disposal of the dye bath**

There are a number of ways to dispose of the dye bath in an environmentally friendly way. You can boil the dye bath until it reduces and forms a thick liquid, then dispose of the liquid in the garden. The dye bath can also be used again until it is exhausted and clear in colour. Empty the exhausted dye bath into the garden.

**Examples of naturally dyed fabrics**

*Eucalyptus oreades*, with alum and iron used as a mordant.



Tea-tree (*Leptospermum polygalifolium*) with copper mordant, then overdyed with iron mordant. For best results with this dye, make sure colours are completely washed and dried between dye baths.



Tea-tree with alum used as a mordant gives a greenish colour.



Tea-tree with copper used as a mordant gives a brown colour.



Marks on cloth created with Devil's Twine (*Cassythia paniculata*).



## Examples of naturally dyed fabrics

Silk fabric with soil stain	
Buried fabric	
<p>Wattle (<i>Acacia decurrens</i>)          Wattle flowers with alum as a mordant give lovely yellows.          Leaves with alum mordant also give nice yellows.          Copper mordant tends to give nice chocolate browns.          Iron mordant gives deep greys to black.</p>	
Banksia ( <i>Spinulosa</i> ) with alum as a mordant gives a very soft beige.	

## Activity 9.2 Natural dyeing

As a class, collect a small amount of different plant material or soils from the bush. Following the instructions for natural dyeing, dye 100 per cent cotton fabric and record your results. Write up this activity as an experiment, using the following headings:

- Aim
- Method
- Results
- Conclusion.

Include fabric samples in the results section.

## Synthetic dyeing

There are a range of synthetic dyes available to colour all different fibre types. Some can only be purchased for commercial use; others, like Dylon dyes, can be purchased in shops such as Spotlight.

- Basic dyes are used to colour acrylic, polyester and nylon.
- Acid dyes are used to colour wool, silk, acrylic and polyester.
- Direct dyes are used to colour cellulosic fibres, including cotton and rayon.
- Disperse dyes are used to colour polyester and nylon.
- Azoic dyes are used to colour cotton and polyesters.



Visit the Dylon website for more information.

Dylon Colourfast Dye consists of mixtures of azoic and triphenylmethane dyes which react chemically with the fibres, sodium carbonate and sodium chloride. Extra sodium chloride (table salt) is added prior to the dyeing process because it causes cellulose to swell, increasing its absorbency and uptake of dye. Salt helps 'push' dye onto fabric.

Dylon Cold Water Dye consists of mixtures of reactive azoic dyes and sodium chloride. Sodium carbonate (known as 'cold fix') is required and available separately, and the addition of salt is again required.

Dylon MultiPurpose Dye is a mixture of three types of dye: direct, acid and disperse. Direct dyes dye cellulosic fibres (such as cotton, linen and viscose); acid dyes dye wool, silk and nylon; and disperse dyes dye some synthetic polymers, such as plastic buttons. None of these dyes react with the fibre structure; their ability to dye a fabric depends on the attraction between the molecules in the fibres. Therefore, the washfastness of these dyes is poor, and with repeated washing the colour will fade.



Dylon dyes

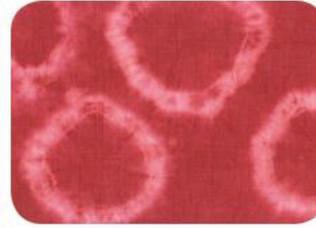
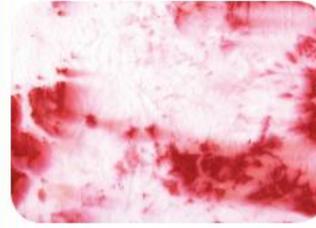
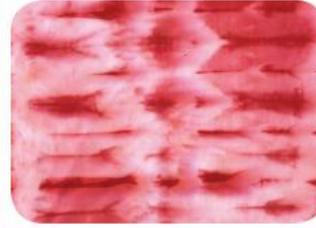
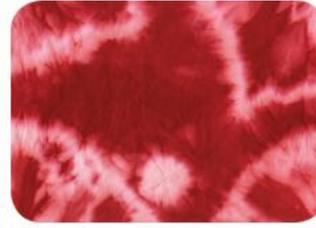
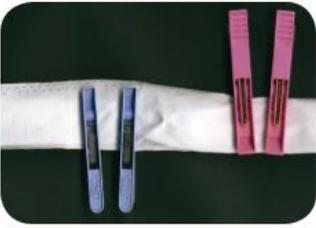
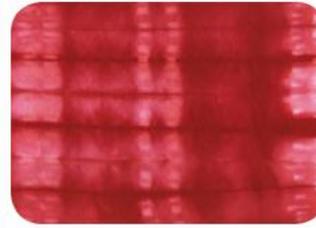
## Activity 9.3 Tie-dyeing

Tie-dyeing is an example of artistic dyeing or resist dyeing. A resist in the form of string, rubber bands or tying or twisting fabric is used to inhibit or prevent the dye from reaching certain areas of the fabric.

Using Dylon dyes and the binding instructions below, create samples of different tie-dyed patterns. Use 100 per cent cotton fabrics for the best results. A fabric square 25 cm x 25 cm is a suitable size.

Instructions	Tied fabric	Design created
<p><b>String bound</b></p> <p>Hold the fabric in the centre of the square and wrap string from top to bottom. Secure tightly. Wrap some areas with a number of rows of string to create interesting effects.</p>		
<p><b>Pleated and bound</b></p> <p>Fold the fabric into 3 cm pleats. Wrap a thick rubber band tightly around the pleated fabric approximately every 5 cm. Make sure the bands are wrapped tightly or the dye will soak under them.</p>		
<p><b>Heart</b></p> <p>Fold the fabric in half. Using a fabric marker pen, draw half a heart. Bind the fabric, following the outline of the heart exactly.</p>		

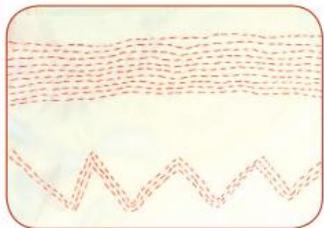
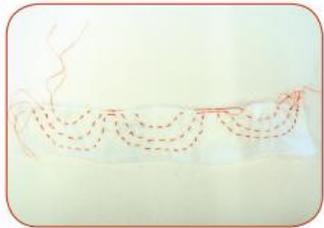
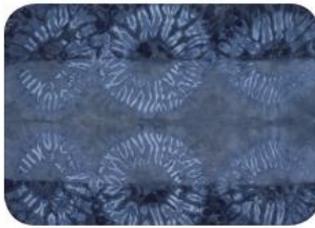
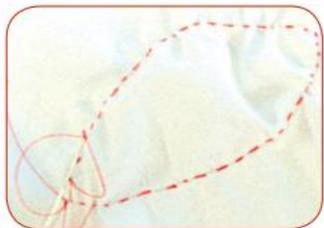
Continued overleaf

<p><b>Circles</b></p> <p>Bind small areas of fabric with rubber bands to create circles.</p>		
<p><b>Marbling</b></p> <p>Scrunch the fabric tightly into a ball and bind with rubber bands. Due to the thickness of the ball, the dye penetration will not be as strong.</p>		
<p><b>Knotted length</b></p> <p>Tie knots in the fabric approximately 7 cm apart.</p>		
<p><b>Knotted corners</b></p> <p>Tie a knot in each corner of the square.</p>		
<p><b>Pegs</b></p> <p>Fold the fabric into 3 cm pleats. Place two pegs along the edge of the fabric approximately 6 cm apart.</p>		

## Activity 9.4 Shibori

**Shibori** is an example of artistic dyeing or resist dyeing. A resist in the form of stitches is traditionally used to inhibit or prevent the dye from reaching certain areas of the fabric. In Japan, shibori is traditionally dyed onto silk fabric using indigo dye. Indigo is a natural dye extracted from the *Indigofera tinctoria* plant. Indigo was introduced to Japan in the 8th century CE from China. It was widely grown and most villages had an indigo dyer. Today, synthetic indigo is used but you can also create a similar effect using Dylon dyes and 100 per cent cotton fabric.

Using Dylon dyes and the stitching instructions on the next page, create samples of shibori patterns. Use 100 per cent cotton or silk fabrics for the best results. A fabric square 25 cm x 25 cm is a suitable size.

Instructions	Stitched fabric	Design created
<p><b>Straight stitching and zigzag</b></p> <p>Using a small running stitch and a topstitch thread, stitch parallel rows of running stitch. Secure the row with a knot or double stitch at one end. Leave a tail at the other end. Use even spacing and stitch length and move forwards. Use a separate thread for each row. When all rows are completed, pull the thread up tightly and secure.</p>		
<p><b>Circles</b></p> <p>Fold the fabric into 4-cm pleats. Using a small running stitch, create semicircles along the folded edge. When all rows are completed pull the thread up tightly and secure.</p>		
<p><b>Leaf</b></p> <p>Using a small running stitch, create leaf shapes. When all shapes are completed, pull the thread up tightly and secure.</p>		

## Activity 9.5 Research task: dyeing

Complete an internet search on shibori, plangi or bandhani dyeing, then write an A4 page report investigating the method of dyeing.

Comment on the following:

- Identify the culture which uses this method of dyeing.
- Describe the method of dyeing.
- Identify and, where possible, include images of traditional textile items dyed using this method.

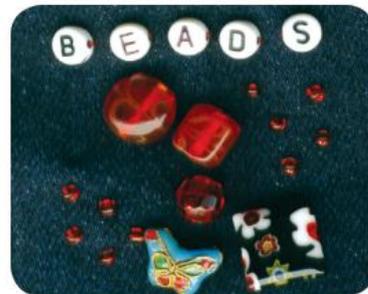
## Method of decoration: beading

Beads can be made from many different materials, including acrylic, glass, metal, pearl, wood or crystal, and many different shapes, including oval, round, alphabet, flower, tube, seed and faceted. The bead type you select will depend on the textile you are attaching it to and the end use of the textile item. For beginners, it is easier to sew beads on one by one using a very fine bead needle and a fine, strong thread. You may wish to wax the thread to give extra strength and to help prevent it from fraying when it rubs against the bead holes, which are quite often rough. Draw the bead design onto the fabric using a fabric marker pen so you have a line to follow or an area to fill in with beads.

## Attaching a single bead

### Method

- 1 Secure the thread with a knot or double stitch on the wrong side of the fabric.
- 2 Starting from the wrong side of the fabric, pass the needle through to the right side of the fabric, then through the hole of the bead, and back through to the wrong side.
- 3 Make sure the needle is taken down close to the edge of the bead so as little thread as possible is visible on either side of the bead. The bead should be lying on its side with the hole facing to the side.



Single beads

## Attaching a single bead or sequin with another bead

### Method

- 1 Secure the thread with a knot or double stitch.
- 2 Starting from the wrong side of the fabric, pass the needle through to the right side of the fabric, through the hole of the bead or sequin and then through a smaller bead. (Note that this smaller bead must still be larger than the hole in the first bead or sequin.)
- 3 Now take the needle back through the original bead or sequin and through to the wrong side of the fabric.
- 4 The bead stands with its hole facing outwards, with the smaller bead covering the hole and giving additional colour and texture.



Bead or sequin attached using another bead

## Attaching a continuous line of beads

### Method

- 1 Secure the thread with a knot or double stitch.
- 2 Starting from the wrong side of the fabric, pass the needle through to the right side.
- 3 Thread the required length of beads onto the thread, and make a stitch at the end of the line to attach the thread.
- 4 To secure the line, go back and make a small stab stitch between each bead or group of beads.
- 5 Take the thread through to the wrong side and secure by creating a double stitch.



Continuous line of beads



## Fringing

### Method

- 1 Secure the thread with a knot or double stitch.
- 2 Starting from the wrong side of the fabric, pass the needle through to the right side and thread the required number of beads onto the thread.
- 3 Use a small bead as a stopper bead to prevent the fringe coming undone, then pass the needle and thread back through the beads and secure with a backstitch.
- 4 Thread each strand of fringe in a similar manner.



Fringing

## Loops

### Method

- 1 Secure the thread with a knot or double stitch.
- 2 Starting from the wrong side of the fabric, pass the needle through to the right side and thread the required number of beads onto the thread.
- 3 Sew the thread back through the fabric in the same place.
- 4 Make loops of equal or different lengths to create embellishments on textile items.



Loops

## Attaching beads using a sewing machine

### Method

- 1 Thread the sewing machine with polyester invisible thread. Use polyester machine thread in the bobbin. Check the sewing machine instruction book to determine the correct presser foot to use.
- 2 The Husqvarna Viking sewing machine shown uses a clear embellishment foot. Select a zigzag stitch with stitch length (SL) of 4 and stitch width (SW) of 3. Place a 2 to 3 mm string of beads (pearls are used in this example) under the embellishment foot, laying them in the groove on the underside of the foot. Always complete a test sample using scrap fabric.
- 3 Embellish your textile item with the pearls, stitching slowly.



Embellishing textile items with pearls  
Image courtesy of VSM Australia  
(Husqvarna Viking and Pfaff Sewing Machines)



## Activity 9.6 Handmade beads

- 1 Thread the sewing machine with metallic thread. Using kunin or acrylic felt, stitch rows of decorative machine stitching.
- 2 Cut the felt into strips approximately 1 cm wide and 2.5 cm long.
- 3 Cut strips of brightly coloured cotton fabric approximately 1.5 cm wide and 2.5 cm long.
- 4 Fold the cotton fabric around a knitting needle and wrap the stitched felt on top. Pin together.
- 5 Using a heat gun or soldering iron, distort the felt so that it shrinks and clings to the cotton fabric. Make sure you work in a well ventilated area. The metallic stitching will remain intact, creating an interesting texture.



Handmade beads

## Method of colouration: printing

Printing is the process of applying a **viscous** paste to one side of a fabric to create a pattern. The process can be repeated to allow the use of a number of colours. Printing designs on a fabric is an economical way to colour or pattern a textile item. Yarns and finished textile items can also be printed. Although there are many different methods of printing, the basic steps or principles are the same.

### Method

- |   |   |  |
|---|---|--|
| <ol style="list-style-type: none"> <li>1 Prepare a printing bed using a soft resist, such as a towel or an old magazine, underneath a hard surface, to ensure the printed design has a cushioned impact with the printing tool.</li> <li>2 Apply a viscous printing paste to the raised surface of a print tool.</li> </ol> | <ol style="list-style-type: none"> <li>3 Press the print tool directly and firmly onto the fabric.</li> <li>4 Repeat the printed design if required. The alignment of the printed images is known as registration.</li> </ol> | <ol style="list-style-type: none"> <li>5 Heat set the printed fabric by steaming or ironing. This ensures that the print paste penetrates the fibres.</li> <li>6 Wash the printed fabric to remove any debris, residue or non-fixed colour.</li> </ol> |
|---|---|--|

## Block printing

Block printing is an example of direct printing. This means the design is directly printed on the surface of the fabric. Types of direct printing include block printing and roller printing.

Block printing is one of the oldest methods of printing patterns onto textiles. Blocks can be made from a variety of materials, including wood, foam, metal, potato or lino. They are created by carving a design into the medium. The patterns are usually hand-carved and quite unique. Block printing tends to be slow and time consuming.

### Equipment

- towel
- palette
- brayer roller
- block print
- printing paste



Foam blocks



Equipment for block printing: wood block, printing paste and brayer roller

### Method: wood block printing

- 1 Lay a folded towel on a table top. Place pre-washed and dried fabric onto the towel with the right side facing up.
- 2 Place a small amount of printing paste onto a flat palette. Ice-cream container lids, polystyrene meat trays or sheets of aluminium foil make ideal palettes. Make sure the palette is slightly wider than the roller.
- 3 Roll the brayer roller backwards and forwards through the printing paste until there is a thin, even coat of paste on the roller.



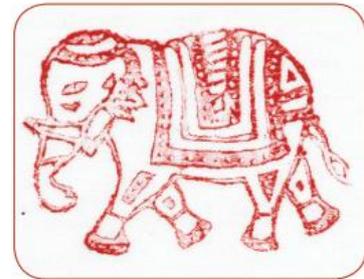
- 4 Roll the brayer roller over the wood block, making sure there is a thin, even layer on the block.



- 5 Press the wooden block onto the fabric. Be careful not to move the block backwards and forwards or the print will blur.



- 6 When the print is dry, iron to heat set.



Elephant block print

### Method: foam block printing

- 1 Complete steps 1 to 3 of the instructions for wood block printing.
- 2 Press the foam block on the palette, then press the foam block onto the fabric. Repeat until design is created.
- 3 When the print is dry, iron to heat set.



Tulip foam print

## Screen printing

Screen printing is an example of resist printing. This process uses a resist to prevent paste being applied to some parts of the fabric. Resist printing methods include batik, stencil printing, screen printing and ikat.

Screen printing can be carried out by hand or machine. A screen is made for each colour to be used in the design. The frame is then laid, or masked, down onto the printing bed and a squeegee is used to force the printing paste through the designed areas on the screen mesh.

### Equipment

- towel
- freezer paper
- screen
- squeegee
- printing paste

### Method: freezer paper resist

Freezer paper will be used as the resist for this example of screen printing.

- 1 Cut the freezer paper to the same size as the screen. Place the freezer paper onto a cutting board with the matte side facing up.
- 2 Draw your design onto the matte side of the freezer paper.
- 3 Using a craft knife, carefully cut out the design for the print. The area you cut away will be the area which is coloured by the print paste.



- 4 Using an iron set to the silk setting, carefully press the cut freezer paper to the back of the screen.



- 5 Seal the edges of the screen with masking tape to prevent any printing paste seeping through to the fabric.
- 6 Place pre-washed and dried fabric onto a folded towel, then place the screen on top of the fabric.
- 7 Spoon a small amount of print paste along one side of the screen.



- 8 Ask a class member to hold the screen firmly in position.

- 9 Pull the squeegee across the screen, creating an even film of printing paste on the surface of the screen.



- 10 Carefully lift the screen off the material.
- 11 When the design is dry, iron the print to heat set.



Maple leaf screen print

## Heat transfer printing



This method requires the use of a specially printed paper. The design is heated with a dry iron at a high temperature, and pressure is used to transfer the design to the fabric. This method of textile decoration can be done quite easily in the home using T-shirt transfer paper. You can transfer either black-and-white or colour photos onto white or light-coloured cotton or cotton-blend fabrics.

## Method

- 1 Scan your image and save it to the computer or your thumb drive. Always check the size of the image to make sure it is the correct size for the textile item you wish to apply it to.
- 2 Open up the print menu and go to Properties, then Paper type. Select T-shirt transfer. This will create a mirror image of your picture so when you iron it to the fabric it will be facing the correct way.
- 3 Print onto the unprinted side of the transfer paper. Leave the image for 5 minutes to dry before ironing to the fabric.
- 4 Prepare a heat-resistant ironing surface; an ironing board is not suitable as it is too soft to allow the image to transfer properly. Use a table, with a thin towel on top.

- 5 Preheat the iron to its highest setting. Do not use steam.
- 6 Iron the transfer paper, applying as much pressure as possible.



- 7 The transfer paper used in this example was purchased at Officeworks. It has a green circle printed on the wrong side. When the circle has changed from green to orange the transfer is ready.
- 8 To achieve a matte finish, remove the release paper while it is still hot. Peel the paper away from the fabric in a smooth, even movement, starting from one

corner. For a glossy finish, allow the transfer to cool, then peel off the release paper.



- 9 To fix the transfer, cover with a sheet of copy paper and iron for 5 to 10 seconds.



Heat transfer print

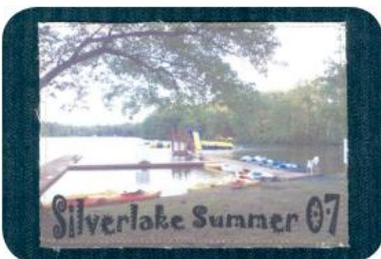
## Direct digital printing (DDP)



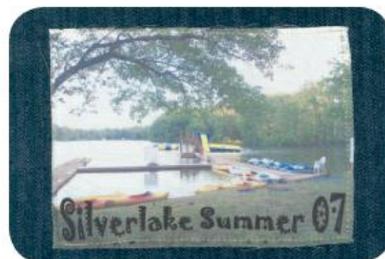
This method of printing uses inkjet technology to print directly onto the fabric. DDP designs can be printed on the home computer using either a bubblejet or inkjet printer. The fabric must first be treated with a solution so the ink will be colourfast. This process involves soaking the fabric in bubblejet solution for 10 minutes, then wringing out the excess before hanging the fabric on the line to dry. Freezer paper is then ironed to the wrong side of the fabric to act as a carrier paper so the fabric can go through the printer. Commercially prepared fabric sheets, including cotton, silk and silk organza, can also be purchased.

## Method

- 1 Scan your image and save it to the computer or your thumb drive. Always check the size of the image to make sure it is the correct size for the textile item you wish to apply it to.
- 2 Open up the Print menu and go to Properties, then Paper type. Select matte paper.
- 3 Place the pre-treated fabric in the printer and print your image.
- 4 Using appliqué technique, attach your image to the fabric.



Direct digital printing on cotton creates a matte image.



Direct digital printing on silk creates an image with lustre.



Direct digital printing on silk organza creates a transparent image.

## Activity 9.7 Research task: printing

Complete an internet search on either batik or ikat. Write an A4 page report investigating the method of printing.

Comment on the following:

- Identify the culture which uses this method of printing.
- Describe the method of printing.
- Identify and, where possible, include images of traditional textile items printed using this method.

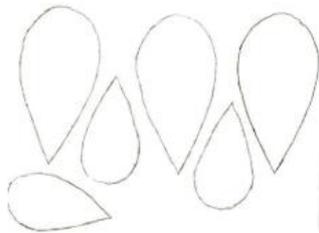
## Method of decoration: appliqué

Appliqué is a method of applying fabric shapes to a fabric background. Most fabrics are suitable for appliqué, except fabrics which have a thick pile, such as fake fur, or high-stretch fabrics, such as Lycra. If you wish to use a knit fabric as an appliqué shape you will need to stabilise it to prevent it from stretching. It is important to wash appliqué fabrics to preshrink them and to ensure the fabric is colourfast.

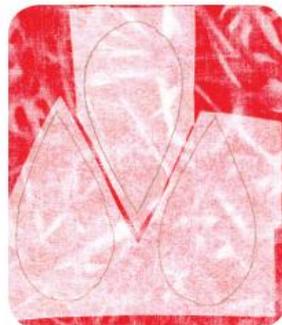
Although there are many different methods of appliqué, the basic steps are the same.

### Method

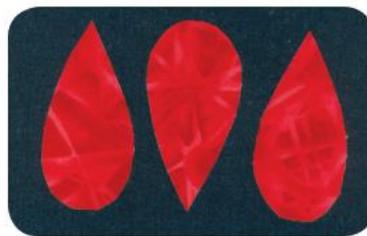
- 1 Draw the appliqué shape onto the paper side of the fusible web. Remember that the design will be in reverse when completed. If you wish to appliqué letters, draw the letter on the web side of the fusible web.



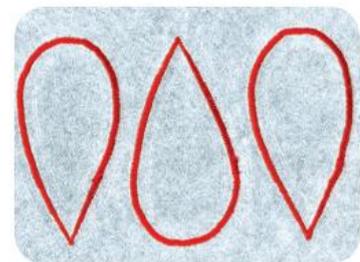
- 2 Iron the fusible web to the wrong side of the appliqué fabric. Cut out the appliqué shape.



- 3 Peel off the paper backing from the fusible web. Iron the appliqué shape to the right side of the background fabric.



- 4 Iron tear-away stabiliser to the wrong side of the backing fabric under the appliqué shape.
- 5 Stitch around the appliqué shape using straight stitch, satin stitch, free-motion stitching or blanket stitch.



## Straight-stitch appliqué

### Method

- 1 Complete steps 1 to 4 of the instructions for appliqué.
- 2 Set the machine to straight stitch, SL 3 and SVV 0. Thread the sewing machine with rayon embroidery thread and use a polyester thread in the bobbin.
- 3 Stitch 2 mm from the edge of the appliqué fabric. Do not reverse; take the threads through to the wrong side and tie the top thread and the bobbin threads together.



Use a decorative rotary cutter to create a pinked edge to the appliqué shapes.



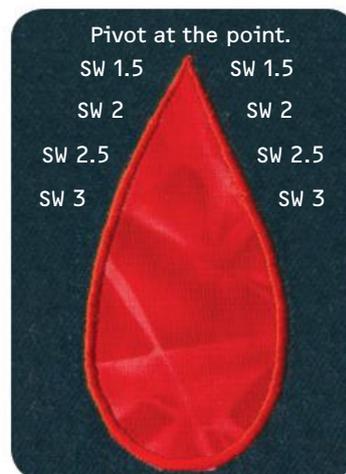
Straight-stitch appliqué

## Satin-stitch appliqué

### Method

- 1 Complete steps 1 to 4 of the instructions for appliqué.
- 2 Set the machine to satin stitch, with SL 0.5 and SW 3. Thread the sewing machine with rayon embroidery thread and use a polyester thread in the bobbin.
- 3 Stitch around the edge of the shape. Three-quarters of the satin stitch should be on the appliqué shape and one-quarter should be on the backing fabric.
- 4 Do not reverse; take the threads through to the wrong side and tie the top thread and the bobbin thread together.
- 5 To remove the bulk at a point, such as a corner, gradually reduce the stitch width as you are stitching into the point.

When you reach the point, lower the needle and pivot the fabric so you are in position to stitch down the other side. Gradually increase the stitch length as you are stitching away from the point.



Satin stitch appliqué

Stitch widths for removing bulk at a point



## Free-motion appliqué

### Method

- 1 Complete steps 1 to 4 of the instructions for appliqué.
- 2 Set the sewing machine to free-motion stitching. Thread the sewing machine with rayon embroidery thread and use polyester thread in the bobbin.
- 3 Create a decorative design on the appliqué shape. (Detailed instructions on free-motion stitching can be found on pages 188–9.)



Free-motion appliqué

## Blanket-stitch appliqué

### Method

- 1 Complete steps 1 to 3 of the instructions for appliqué.
- 2 Use blanket stitch to neaten the edge of the appliqué shape. (Detailed instructions on blanket stitch can be found on page 191.)



Blanket stitch appliqué

## Activity 9.8 Appliqué collage

Create an A3 page collage of textile images which feature appliqué. Name each textile item, and identify the focus area and the method of appliqué used.

## Method of decoration: quilting

Quilting is the method of creating a three-dimensional pattern through multiple layers of fabric. The fabric sandwich usually consists of three layers. The top layer is often dyed or printed cotton, the middle layer is wadding or Pellon and the underlayer is fine cotton fabric, such as calico or homespun.

Choosing the thread is one of the most important steps in quilting. An invisible nylon thread can be used; the advantage of this type of thread is that you can create a pattern without adding colour to the design. A quilting thread is thicker than normal polyester machine thread and is used to give both colour and design to the quilting. A decorative thread can also be used; this will create a more elaborate design.

Although there are a number of different methods of quilting, the basic steps are the same.

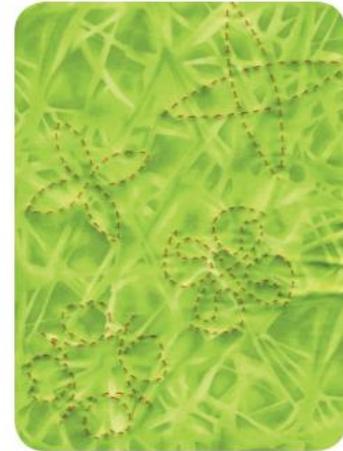
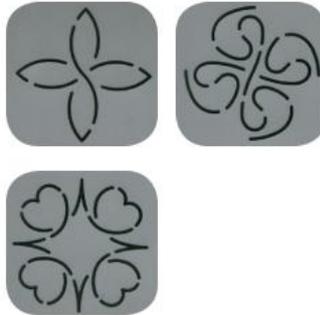
### Method

- 1** Cut the fabric to the required size. You will need to cut the fabric slightly larger than the required size, as the quilting will reduce the finished size of the design.
- 2** Iron-on Pellon is easy to use as the padding for the fabric sandwich. Iron the fusible side of the Pellon to the wrong side of the plain or printed cotton.
- 3** Place the calico or homespun under the Pellon and pin or baste the layers together. Quilting pins (extra-long pins) or safety pins are useful to hold the layers securely together.
- 4** A long straight stitch, sewn either by hand or with the sewing machine, is used to create a pattern. Always create a sample of the quilting pattern before stitching on the actual fabric sandwich.

## Hand-quilting

### Method

- 1** Complete steps 1 to 4 of the instructions for quilting. When hand-quilting, most of the quilting thread is buried between the layers of the fabric sandwich.
- 2** A quilting stencil and a fabric marker pen or tailor's chalk can be used to create a quilting pattern on the fabric.
- 3** Using a running stitch and quilting thread, stitch around the design. For a more raised design keep a tight tension on the thread.



## Machine quilting

Spiral straight stitch quilting pattern  
Image courtesy of VSM Australia  
(Husqvarna Viking and Pfaff Sewing  
Machines)



## Method

- 1 Complete steps 1 to 4 of the instructions for quilting.
- 2 Thread the sewing machine with a polyester machine thread or decorative thread, for example rayon or metallic thread. Set the sewing machine to straight stitch with SL 3 and SW 0.A longer stitch length is required for quilting as the thickness of the fabric sandwich will reduce the effective stitch length.
- 3 If you find it easier, you can use a quilting guide attachment on the sewing machine to create evenly spaced rows of quilting.

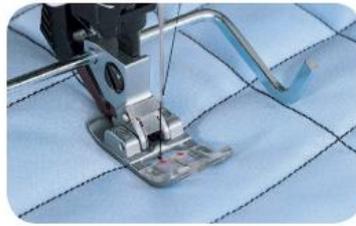


Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)

- 4 When quilting large areas, roll the excess and work a small area at a time.



Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)



Decorative machine stitches can also be used as quilting stitches. Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)



## Free-motion machine quilting

Free-motion machine stitching: landscape quilt  
Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)

## Method

- 1 Complete steps 1 to 4 of the instructions for quilting. When completing free-motion quilting it is much easier to baste the fabric sandwich than to pin it; if you pin it, you will need to stop frequently to remove pins and this will disrupt the flow of the free-motion quilting.
- 2 Free-motion stitching allows you to quilt in any direction: left to right, forward or backwards. This is only possible if you lower the drop feed on the sewing machine and attach a darning foot or free-motion foot.



Open-toe embroidery foot used for stippling. Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)

## Method

**3** The stitch length is determined by the speed of the sewing machine. The most important thing to remember is 'fast foot, slow hand'. This will ensure a consistent and short stitch length. If the machine speed is too slow the stitches formed will be too long.

**4** Stippling is a common stitch for free-motion machine quilting. Stitch in a curved motion, moving backwards and forwards over the fabric. The stitching should not overlap.



Free-motion quilting: flower quilt  
Image courtesy of VSM Australia  
(Husqvarna Viking and Pfaff Sewing Machines)

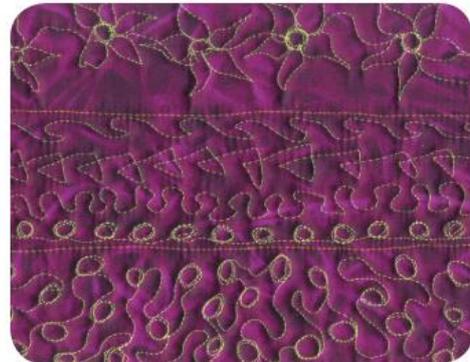


Free-motion quilting using a quilting frame. The quilting frame allows the user to quilt very large areas quickly and accurately.

Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)

## Activity 9.9 Free-motion quilting

- 1 Cut a piece of fabric the size of an A4 page.
- 2 Using a fabric marker pen, divide the fabric into three lengthwise.
- 3 Iron Pellon to the wrong side of the fabric.
- 4 Baste calico to the underside of the fabric sandwich.
- 5 Set the machine to free-motion stitching by lowering the feed dog, attaching a free-motion or darning foot and selecting straight stitch. Thread the machine with rayon embroidery thread and use either Bobbin Fil or polyester machine thread in the bobbin. If you are using a different colour thread in the bobbin, lower the top tension so the bobbin thread will not be visible on the right side of the fabric.
- 6 Create a different quilting pattern in each of the three sections of the fabric.
- 7 Once you have completed your quilting patterns, evaluate the effectiveness of each pattern. For each pattern identify a textile item that could be quilted using this method.



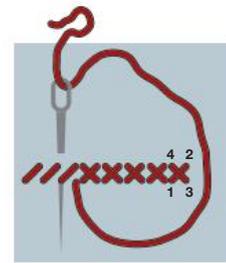
Free-motion quilting patterns



## Cross stitch

Cross stitch is often sewn on even-weave fabric, such as Aida cloth or gingham. The pattern is usually worked in rows of slanted stitches. The first row lays down half of each cross, and the second row completes the cross.

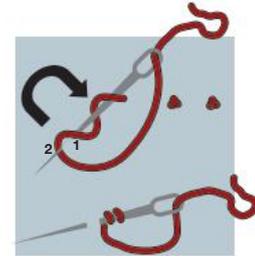
Bring the needle out at 1, then insert it at 2 and bring the needle out again at 3. To complete the cross, insert the needle at 4.



## French knot

French knot is a raised stitch used to fill in an area. The larger the number of twists, the larger the French knot.

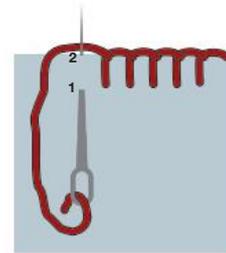
Bring the needle through the fabric at 1, as shown. Hold the thread down with your left thumb where it emerges, then twist the loose end of the thread twice around the needle. Still holding the thread firmly, insert the needle at 2, close to where the thread first emerged. Do not re-insert it in exactly the same place, or it will simply pull back through. Pull the needle through to the back, leaving a small knot on the surface as shown, or pass on to the position of the next stitch.



## Blanket stitch

Blanket stitch is used to finish edges or create a border. The stitches should be the same distance apart and the same height to ensure consistency.

Insert the needle into the fabric at 1. Bring it out at 2, making sure the thread is behind the needle. Pull up the stitch to form a loop and repeat the steps to form a blanket-stitch edging.



## Activity 9.10 Hand-embroidery sampler

Using denim as the base fabric, complete a sampler of embroidery stitches. This sample has been completed using no. 5 cotton perle thread.



## Machine embroidery

There are many computerised sewing machines on the market that create embroidery stitches and designs. Some sewing machines connect to a computer, allowing you to create your own original designs and then stitch them out on the sewing machine. As all machine brands differ, you will need to read the instruction book to learn how to embroider using the sewing machine.

Decorative embroidery stitches created with a sewing machine  
Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)



Embroidery patterns can be created on a computer before they are stitched onto fabric.  
Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)



Stitching an embroidery design using the sewing machine  
Image courtesy of VSM Australia (Husqvarna Viking and Pfaff Sewing Machines)

## Method of colouration: hand-painting

The possibilities for creating beautiful colouration and decorative techniques with hand-painted designs are endless. Hand-painting is possible for yarns, trims, fabrics and finished garments. Hand-painting allows each piece of fabric to individually suggest textures, skies, landscapes or moods, with subtle and rich colour changes. Hand-painting can produce stunning garments, outstanding art fabric for the artistic quilt-maker or beautiful backgrounds for the creative embroiderer.

### Preparing the fabric

#### Type of fabric

It is best to select absorbent fabrics for painting; cotton- and silk-based fabrics are great painting canvases. This is because other fabrics tend to repel and inhibit the paint, which makes the design more likely to be damaged or removed during washing. Use a mild fabric detergent when washing any textiles fabrics or items. Never add fabric softener to anything hand-painted or the paints will fade or peel off. It is best to air dry garments rather than using a clothes dryer.

#### Washing the fabric

Wash the fabric or textile item to be decorated before painting. Washing the fabric removes fabric finishing such as sizing, which may have been used in the final production of the fabric. If fabrics are not washed,



Colour-washed, sponge-painted background with free-motion machine embroidery butterfly

paint may not adhere to fabric. It is also necessary to iron the fabric or item of clothing to remove any wrinkles and prepare a smooth surface to design on.

## Creating the design

Many paint manufacturers make a fabric medium, which you combine with your paint to allow the paint to adhere to the fabric surface. You may also choose to use a fabric paint, which already has the fabric medium added to it.

Outline your design or pattern with disappearing ink pen or draw the image you wish to paint by freehand design. Allow the finished piece to air dry, laying it out flat for at least 16 to 72 hours before heat setting.

It is necessary to heat fix the image so the item can be washed without losing the quality of the design. Heat fixing can take many forms: you can use steam, an iron, a heat press, an oven or even a hair dryer. Heat must be applied evenly over the image and must be applied continuously for the required time.

When heat setting the image by ironing, never iron directly onto the painted surface: cover it with a protective sheet, such as a muslin cloth, a tea towel, tissues or baking paper. Be careful not to scorch or burn the image or garment.

## Equipment

When hand-painting designs onto textile items there is no limit to the type of equipment you can use or purchase.

### Paint

There are many types of textile paints on the market. Paints are available in many forms, including decanter-type pots, paint sticks, textas, pigma pens and squeezable tubes. The paints range from flat colour, pearlescent, shimmer, luminescent, glitter, slick, puff, neon and glow in the dark. There are paints that are thin, similar to dyes, and others that are thick, similar to printing pastes. Some paints add texture, define areas or add highlights or effects. You can also purchase textile mediums which allow other paints that are not traditionally textile paints to be used on textile surfaces.



A range of dimensional paint upon application and before drying



The same range of dimensional paint after drying. Glitter paints dry clear and flexible, puff paints expand upon heat application, slick paints and shiny paints appear still wet.

Most paints will require 16 to 72 hours to dry and need to be heat set to ensure the paint stays colourfast on the fabric. Dimensional paints tend to have a high proportion of adhesive in their make-up and therefore do not always require heat setting.

## Brushes and applicators

You can use anything to apply paints to fabrics. The selection of applicator such as fingers, sponges, brushes and pens will depend upon the final look you wish to achieve in your design.



## Techniques

There is a long list of painting techniques that can be used to apply colour and decoration to fabrics.

These include:

- direct application using materials and equipment such as crayons, Paintstiks, pigma pens and fabric textas
- resists, such as gutta, starch, tape or wax, which can be used to mask areas of the design
- spraying or airbrush applications
- stencilling
- printing
- marbling.

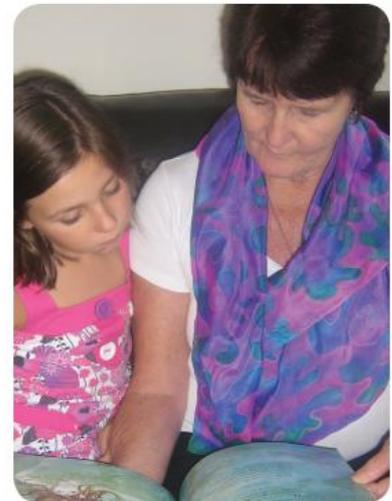
These techniques can be used individually or in combination to produce stunning creative designs. A few basic techniques that you may like to experiment with are outlined below.

## Silk painting

For silk painting, designs are formed with gutta or water-based resists. These are applied to white silk that has been pre-washed, dried and stretched onto a frame or an embroidery hoop. Once the resist has dried, it acts as a barrier for the paint. The colour is contained within the outlined areas of the design, enabling you to achieve a sharply defined border. If you do not use a resist the dye or paint flows into more of an abstract, undefined pattern. After the dye or paint has been heat set, the resist can be removed and a defining line of the colour of the original fabric remains. Coloured resists are also available; these are often metallic and are meant to remain in the fabric.

Silk paints can be applied with special silk brushes, spray guns, sponges or eye droppers. All these applicators give a different effect.

When you are designing with silk painting you can achieve watercolour effects. Salt can be added to the wet design; it will differentiate the dye uptake, causing a mottled effect. The paint can be diluted or strong colours can be used. Silk colours can be mixed to form new colours; they can be blended or washed out with water to create another effect.



Silk painting can be used to create beautiful textiles, such as this hand-painted silk scarf



### Equipment

- silk
- gutta resist
- embroidery hoop
- paint brushes
- eye dropper
- paint palette
- water
- salt

Silk painting equipment

## Technique

Various techniques can be used to create designs with silk painting. Some of the effects are listed opposite.

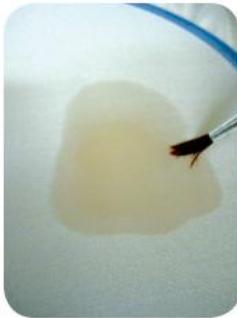
Wetting the fabric helps you to apply the silk paints smoothly to the surface of the silk, makes it easier to blend colours and stops wet edges appearing. Salt affects the rate at which the silk paint is absorbed, leaving a textural effect.

## Method

- 1** Prepare the silk for painting by stretching it out. This can be done on a special frame or in an embroidery hoop.



- 2** Next, wet the fabric to ensure that the fibres are swollen with water. This allows the dye to be taken up at a more even rate and also prevents wet edges from forming around the painted design edges.



- 3** Applying colour with paint brush application is one way to create a design. Alternatively, you can use sponges, rollers or droppers.



- 4** Blend colours with water to ensure a smooth application and prevent dry edges forming. Water can also be used to dilute the colours to achieve a more subtle or pastel look.



- 5** Add salt to create an uneven uptake of silk paints and create a mottled pattern, giving a textural appearance.



- 6** Heat set the silk painting with a steam iron on the silk setting.



An eye dropper creates a more defined edge which does not blend as well; a wet edge is created which is often darker when dried.



Combined effect created by using an eye dropper, wet fabric, brush strokes and rock salt.



Black gutta resist design, containing the colour inside the shape



Chinese hand-painted silk fan



Silk painting  
*Sea Life*



Batik is another resist technique. Batik wax can be printed, stamped or hand-painted on in the desired design motif. The fabric with its wax resist can then be dyed to create an image.

## Stencilling

A stencil is used to mask a negative image of a cut design. Paint is applied with a stencilling brush, airbrush or spray and the cut stencil is then removed to reveal the design. You can purchase pre-cut stencils or use masking tape to tape off areas. Your own designs can be drawn onto clear contact, then cut out and the contact stencil stuck to the fabric to create a closely sealed edge. When using a commercial stencil, ensure you hold the design carefully in place.



Hand stencilling



Denim makes a great surface for design. This close up shows a graffiti artist's spray-painted design on a jacket.

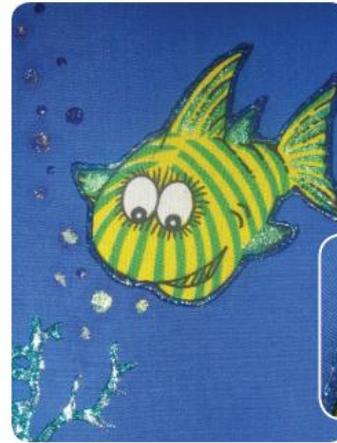


Close up of design: airbrush and hand-painted work

## Dimensional paints

Dimensional paints are easy to use and work on most fabrics due to the large amount of adhesive in the product. They come in many forms, including jewel tones, glitter, slick, puff and many others.

Dimensional paints come in their own applicator bottles. The paint dries clear and flexible, and they wash well. They can be used on shoes, T-shirts, jeans, bags, textile arts, furnishings and costumes. Dimensional paints add colour and texture to designs and may be used in conjunction with other colouration and decoration techniques. They are great to use on the outer edge of appliqué designs.



Glitter dimensional paint used on the outside of an appliqué design



Close-up of dimensional paint edge

## Combining techniques

Combining techniques can be fun and is a great way to add dimension, texture and interest to a project.

This sample uses masking tape to make a straight- and ragged-edge resist; the dimensional fabric glue is applied and then foiled to finish the design.

### Method

- 1 Use masking tape to create a resist and lay down the foundations of the pattern or design you wish to create.



- 2 Hand-paint the fabric with a paint brush, following the straight lines that have been laid down with the masking tape resist.



- 3 Masked hand-painted lines make a great framework for the patchwork pattern which is to be continued in the next step.



- 4 Put masked cross lines in place and hand-paint them to create the patch frames.



- 5 Apply hand-painted fabric glue as a base for adding fabric foil to the design. Foiling allows you to add metallic tones to your painted designs. It uses sheets of metallic chrome-like foil.



- 6 Add the fabric foils and rub them onto the fabric glue with a wooden spatula, to distribute the fabric glue evenly. This generates another design element which creates a rich surface texture.



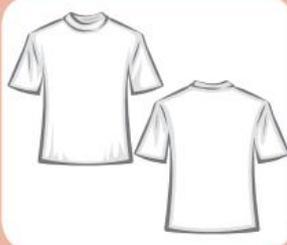
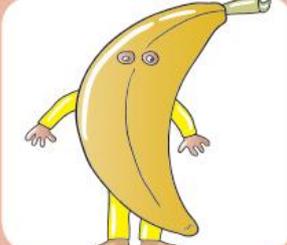
Foil close-up



Finished design

## Activity 9.11 Colour and decoration

Complete the table by identifying a suitable method of decoration or colouration for each textile item.

Focus area	Textile item	Method of colouration or decoration
Apparel		
Costume		
Furnishings		
Textile arts		
Non-apparel		

## Area of study: Properties and performance of textiles

The content in this area of study focuses on developing a basic understanding of the unique properties of a range of textiles and the ways in which they perform. By deconstructing a textile item – that is, dissecting an item into its component parts by looking at the whole item and then breaking it down progressively to its initial state – you will gain a broad understanding of how textile items are constructed.



Chapter 10 Performance of textile items

Chapter 11 Fibres

Chapter 12 Yarns

Chapter 13 Fabrics



# 10

# Performance of textile items

## Outcome, knowledge and skill statement

### Outcomes:

- 5.1.1 explains the properties and performance of a range of textile items

### Students learn about:

#### Performance of textile items

- End uses of textile items and performance criteria
- Design features of textile items
- The component parts of a variety of textile items from a range of focus areas
- Notions required for the textile items
- Sequence of construction
- Techniques of manufacture
- Pattern shapes and markings

## End use of textiles and performance criteria

End use relates to how a textile item will be used by the consumer. Every textile item is designed for a specific end use by the designer, although the consumer may decide to use the textile item for a purpose other than its intended one. For example, Asian traditional clothing is designed to be used as an apparel item, but a tourist may purchase a brocade jacket to display as a textile arts wall hanging due to its highly aesthetic features`.

Textile items are suitable for many different end uses. Some are functional, for example apparel items; some are used for their aesthetic features, for example textile arts items; and some are selected for both functional and aesthetic features, for example costumes. Industry and consumers use performance criteria to judge or decide whether a textile fulfils the requirements of its end use. Textile items which do not fulfil their performance criteria are thought of as poor quality and undesirable.



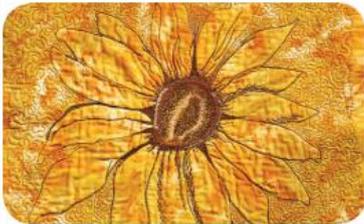
Chinese cheongsam worn as an apparel item



Chinese jacket displayed as a textile arts wall hanging

## Activity 10.1 Performance criteria mix and match

Complete the following table by matching the correct performance criteria to the textile items.

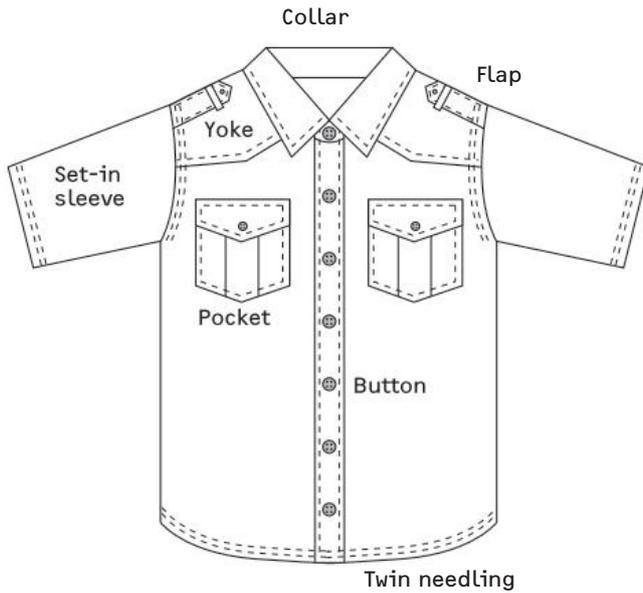
Focus area	Textile item	Performance criteria
Apparel	 <p>Jeans</p>	<ul style="list-style-type: none"> <li>• Will not fade</li> <li>• Good drape</li> <li>• Opaque</li> </ul>
Costume	 <p>Venetian carnival costume</p>	<ul style="list-style-type: none"> <li>• Hard wearing</li> <li>• Strong</li> <li>• Firm <b>handle</b></li> </ul>
Furnishings	 <p>Curtain</p>	<ul style="list-style-type: none"> <li>• Aesthetically pleasing</li> <li>• Suitable colours</li> <li>• Realistic design</li> </ul>
Textile arts	 <p>Wall hanging</p>	<ul style="list-style-type: none"> <li>• Water resistant</li> <li>• Good abrasion resistance</li> <li>• Will not fade</li> </ul>
Non-apparel	 <p>Tent</p>	<ul style="list-style-type: none"> <li>• Good lustre</li> <li>• Suitable for theme</li> <li>• Visually appealing</li> </ul>

# Design features of textile items

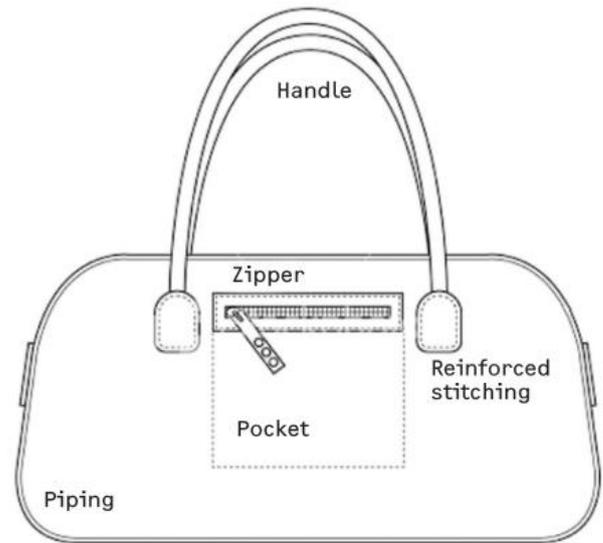
Design features are the parts or elements of the design which make the textile item function for its intended end use.

Design features include:

- seams
- openings and closures, such as zippers, buttons and velcro
- pockets
- casings.



Men's shirt



Handbag

## Activity 10.2 Design features

Identify the design features of the following textile items.



Sneakers



Baby's outfit

# Deconstruction

**Deconstruction** is an excellent way to gain an understanding of how textile items are constructed. By deconstructing textile items you will see the shape of pattern pieces and discover what textile materials and notions have been used. You will also identify techniques used to construct the item. Textile items from different focus areas require different materials, notions and techniques for construction. The following case studies will show the deconstruction of textile items from three focus areas – apparel, furnishings and non-apparel. Then you will have the opportunity to deconstruct your own textile item. You can either visit a second-hand store to purchase textile items or use unwanted items from home.

## Case study 1: deconstruction of jeans

### End use

Focus area: apparel; casual clothing suitable for all seasons

### Performance criteria: jeans

- Hard-wearing
- Good abrasion resistance
- Durable
- Firm handle
- Stretch woven to fit the shape of the body
- Easy care
- Suitable for all figure types
- Comfortable

Design features  
of denim jeans



## Design features: denim jeans

Front view	Back view
<ul style="list-style-type: none"> <li>• Top band</li> <li>• Button and buttonhole</li> <li>• Belt loops</li> <li>• Pocket</li> <li>• Flat-felled seam</li> <li>• Hem</li> <li>• Top-stitching</li> <li>• Metal studs</li> <li>• Fly zipper</li> </ul>	<ul style="list-style-type: none"> <li>• Yoke</li> <li>• Patch pockets</li> <li>• Top stitching</li> <li>• Flat-felled seam</li> <li>• Label</li> </ul>

Before starting the deconstruction process, take a digital photo of your textile item and label the design features. The labels on the jeans image have been created using Photoshop.

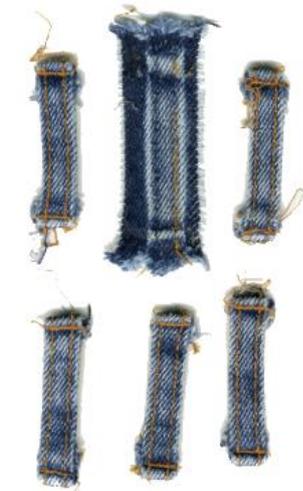
It is best to use a quik un-pick to deconstruct a textile item to its component parts. If you use scissors and cut out the pieces, the pattern shapes will not be accurate as you will lose the seam allowance. This process can be quite time consuming, especially for a complex textile item like jeans. It is a good activity to do as a group.

## Component parts of jeans

To make this pair of jeans you would need to cut out 19 pieces in denim and four pieces in cotton homespun for the front pocket sections.



Fly zipper. The metal zipper is 8 cm long.



There are six belt loops. The original pattern piece was 3 cm x 8 cm.



Deconstruction of a pair of jeans



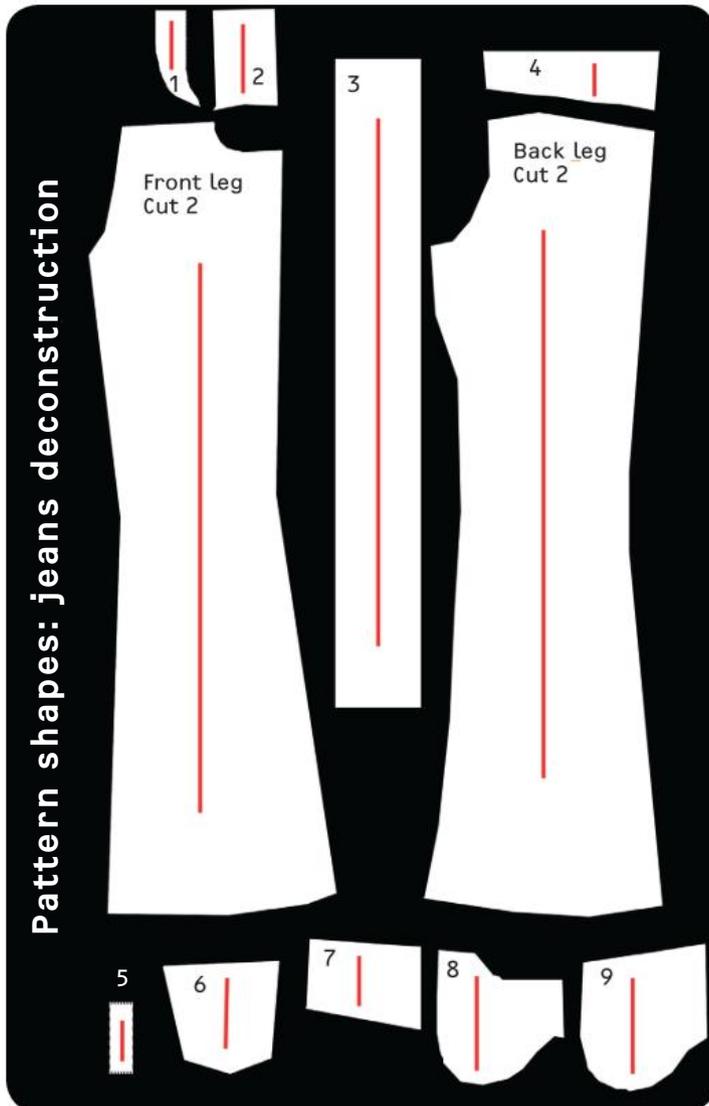
There was a brand logo stitched to the centre top of the left patch pocket. A larger logo was stitched to the centre back of the hip band.



Metal button and metal studs which were used to reinforce the front pocket corners

## Pattern shapes and markings

Once the textile item is deconstructed it is possible to create pattern pieces which could be used to construct a similar item. When creating pattern pieces you could lay the deconstructed pieces onto brown paper, pin into place and trace around them. Pattern pieces can easily be made to scale using graph paper.



Jeans pattern pieces created using Photoshop

### Pattern markings

- 1 Fly facing. Cut 1.
- 2 Fly. Cut 1
- 3 Top band. Cut 1
- 4 Back yoke. Cut 2
- 5 Belt loop. Cut 6.
- 6 Patch pocket. Cut 2.
- 7 Pocket lining. Cut 2.
- 8 Shaped front pocket. Cut 2 from homespun.
- 9 Front pocket. Cut 2 from homespun.

— Straight grainline

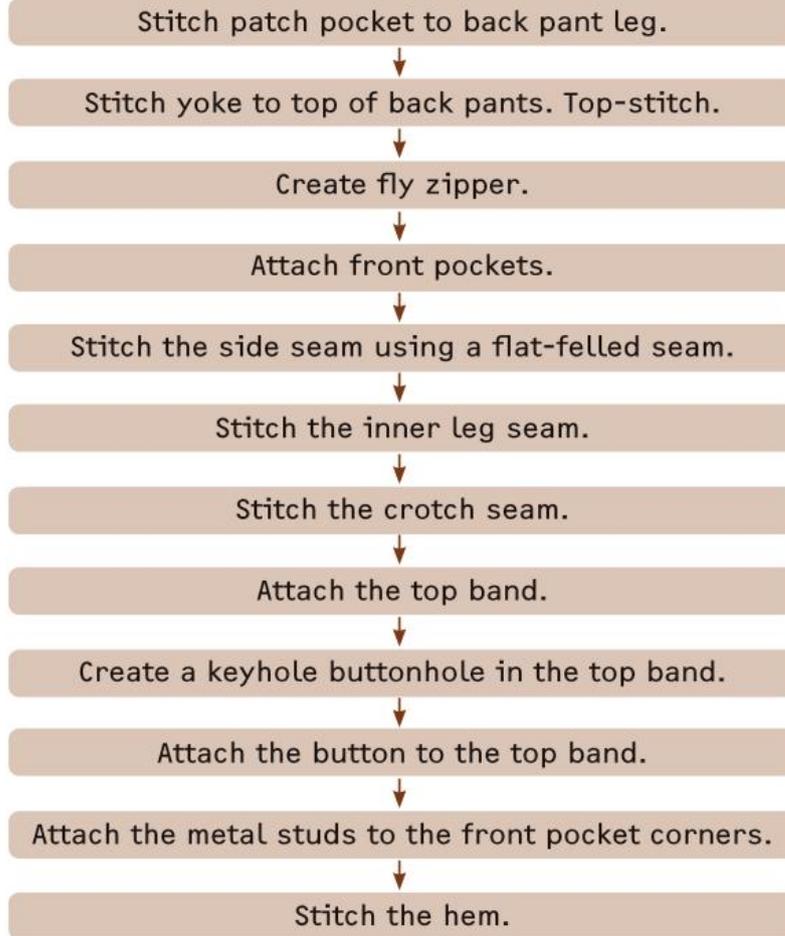
## Notions required for jeans

- Polyester machine thread
- Tan top-stitch thread
- 1 metal button
- 6 metal studs
- 8 cm zipper

## Techniques used to construct jeans

- Patch pockets
- Top-stitching
- Flat-felled seams
- Keyhole buttonhole
- Attaching buttons and studs

## Construction of jeans



Sequence of construction  
for jeans

## Case study 2: deconstruction of a pillowcase

### End use

Focus area: furnishings; removable pillowcase

### Performance criteria: pillowcase

- Colourfast to withstand constant laundering
- Hard-wearing
- Durable
- Dimensionally stable
- Pill resistant
- Fitted so that the pillow insert does not look too saggy
- Easy care
- Comfortable
- Firm, soft handle
- Flap opening

### Design features: jacquard pillowcase

Front view	Back view
<ul style="list-style-type: none"> <li>• Piping</li> <li>• Decorative fabric</li> </ul>	<ul style="list-style-type: none"> <li>• Piping</li> <li>• Flap opening</li> </ul>

## Component parts of pillowcase

To make this pillowcase you would need to cut out four pieces in a jacquard print.



Deconstruction of pillowcase



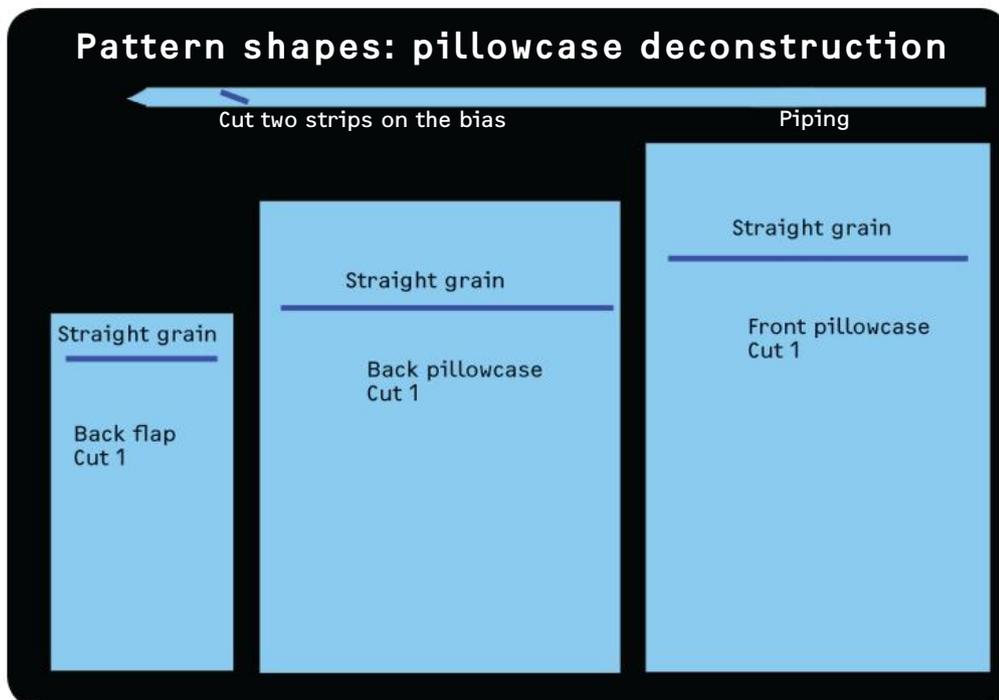
Design features of pillowcase

## Pattern shapes and markings

Once the pillowcase is deconstructed it is possible to create pattern pieces which could be used to construct a similar item. Pattern pieces for furnishing items are usually quite simple and can be drawn using measurements onto paper.

The pillowcase consists of four rectangles:

- front – 72 cm x 49 cm
- back – 63 cm x 49 cm
- back flap – 26 cm x 49 cm
- two bias strips – each 3 cm x 220 cm.



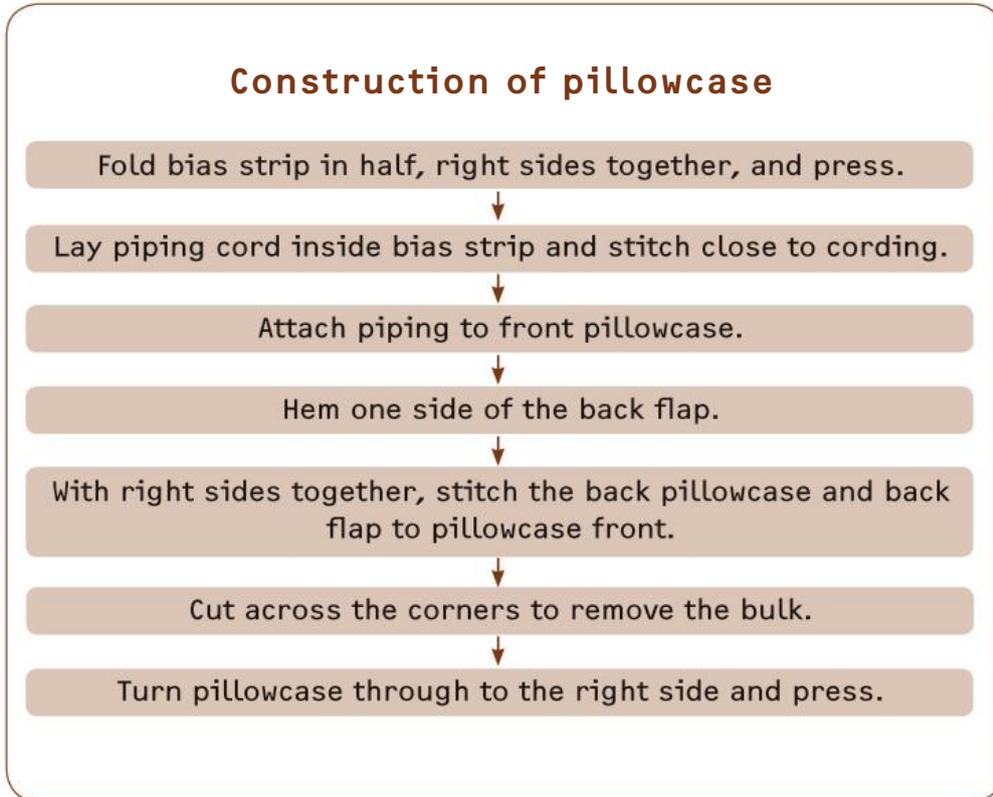
Pillowcase pattern pieces created using Photoshop

## Notions required for pillowcase

- Polyester machine thread
- 2.2 m of 5 mm piping cord

## Techniques used to construct pillowcase

- Piping
- Top-stitching of hem



## Case study 3: deconstruction of a backpack

### End use

Focus area: non-apparel; backpack

### Performance criteria: backpack

- Hard-wearing
- Durable
- Dimensionally stable
- Colourfast
- Non-absorbent
- Easy to open
- Lightweight

### Design features: backpack

Front view	Back view
<ul style="list-style-type: none"> <li>• Pocket</li> <li>• Decorative fabric</li> <li>• Zipper opening</li> <li>• Decorative logo</li> <li>• Gusset</li> </ul>	<ul style="list-style-type: none"> <li>• Shoulder straps</li> <li>• Reinforced stitching</li> </ul>

## Component parts of backpack

To make this backpack you will need to cut out nine pieces in a floral canvas fabric.



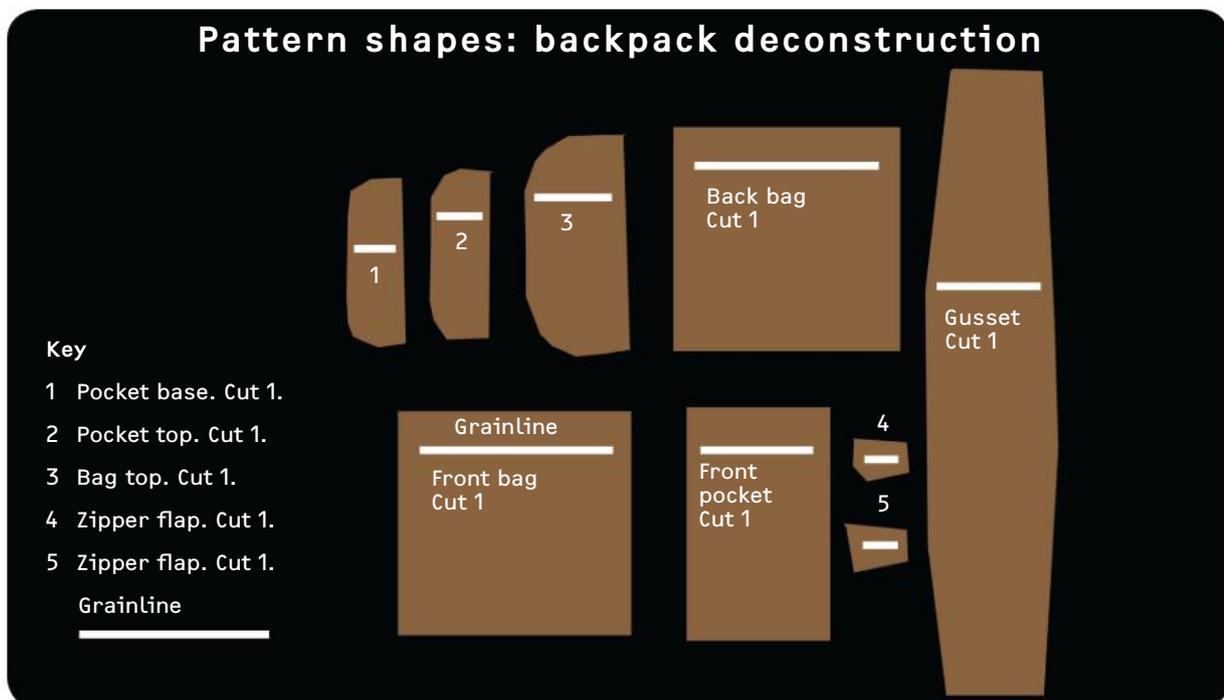
Deconstruction of backpack



Design features of backpack

## Pattern shapes and markings

Once the backpack is deconstructed it is possible to create pattern pieces which could be used to construct a similar item.



Backpack pattern pieces created using Photoshop

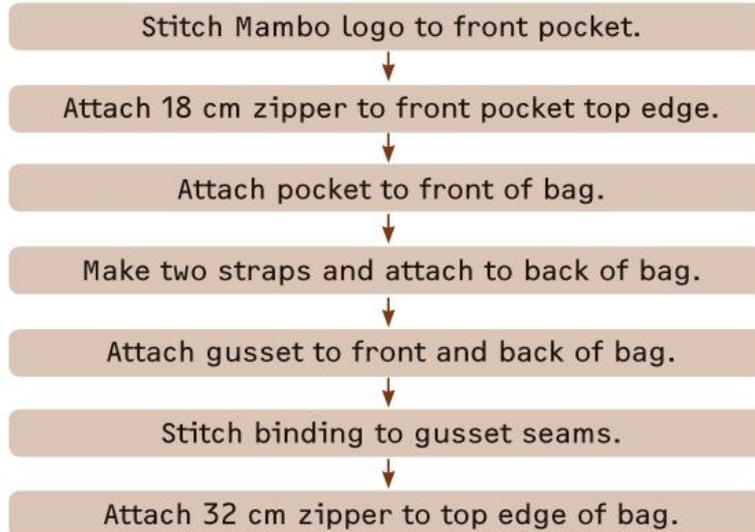
## Notions required for backpack

- Polyester machine thread
- 18 cm chunky zipper
- 32 cm chunky zipper
- 2.4 m woven strapping
- 4 buckles
- Plastic Mambo motif
- 2.8 m plastic seam binding

## Techniques used to construct backpack

- Pocket
- Zipper
- Binding
- Straps

### Construction of backpack



Sequence of construction  
for backpack

## Activity 10.3 Deconstruction of a textile item

Divide into groups of three. Each person will need a Quick Unpick.

- 1 Deconstruct a textile item into its component parts. Be careful to unpick the item accurately so the seam allowance remains.
- 2 Using paper and pencil or a software program such as Photoshop draw the pattern pieces required to make the item. Label each pattern piece with a grainline, name of pattern piece and number of pieces to cut.
- 3 List the notions required to make the item.
- 4 Outline the sequence of construction of the textile item.
- 5 Identify the techniques of manufacture of the textile item.
- 6 Present your findings to the class as an oral presentation.

# 11

## Fibres

### Outcome, knowledge and skill statement

#### Outcomes:

- 5.1.1 explains the properties and performance of a range of textile items
- 5.1.2 justifies the selection of textile materials for specific end uses

#### Students learn about:

##### Types of fibres

- Natural
- Manufactured
- Fibre blends

##### Properties of fabrics and fibres

- Functional properties, e.g. absorbency, durability, resilience, flammability
- Aesthetic aspects, e.g. drape, lustre, handle

## Textile fibres

A fibre is a fine, threadlike piece of matter with a length at least 100 times greater than its width. Short fibres are known as **staple** fibres. Long or continuous fibres are known as **filament** fibres.

Fibres are the raw materials used to make yarns and fabrics. They contribute to the aesthetics, durability, comfort, appearance and care requirements of fabrics. They determine to a large extent the end use of fabric and they influence the cost of fabrics.

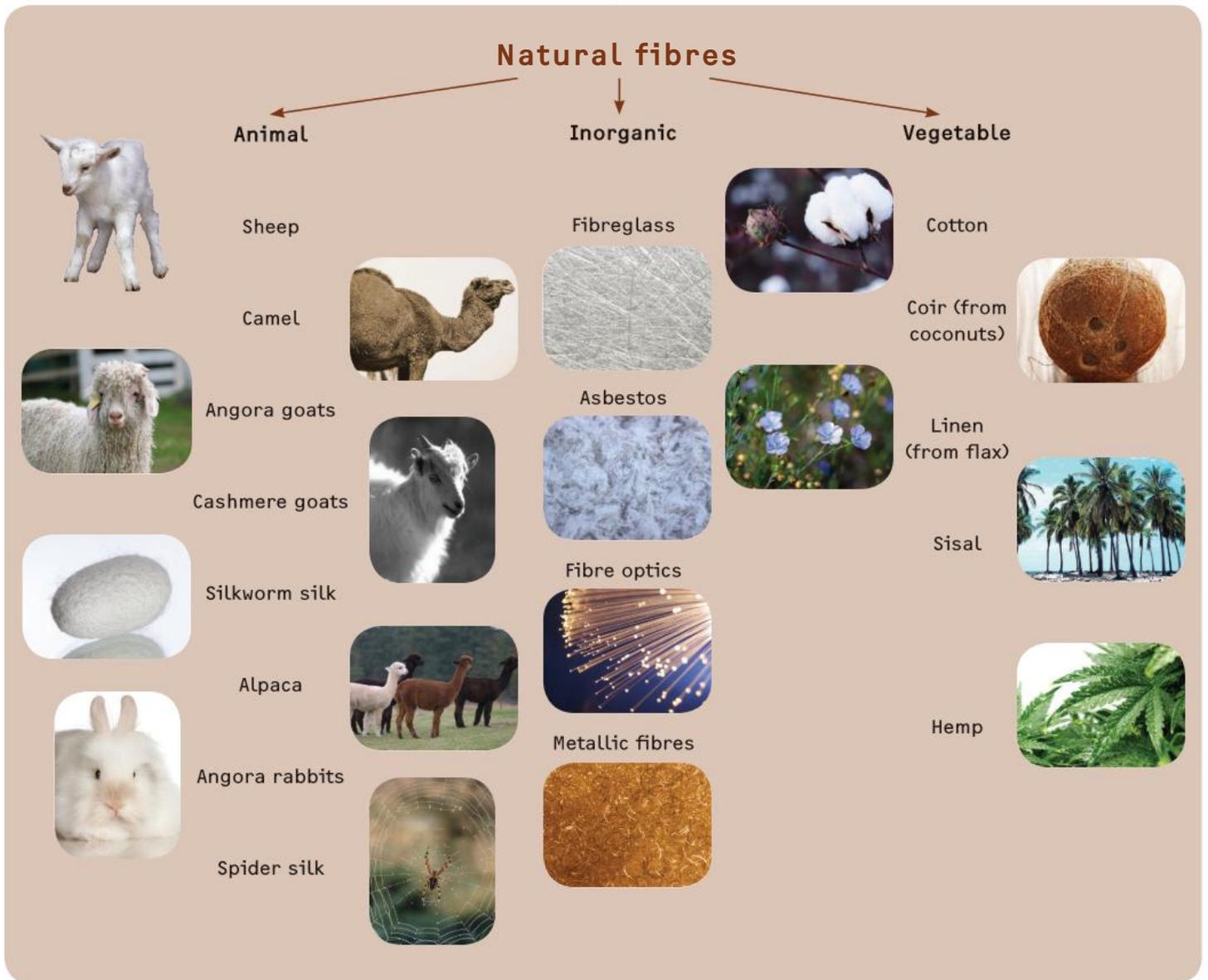
Producing or obtaining fibres is the first step in the process of making textile products. The term 'textile' refers to any fibre which may be used in its natural state or may be spun, woven, knitted, braided, knotted, bonded, felted, fused or manipulated in another way to create a textile yarn, fabric or product.

## Classification of fibres

Textile fibres are classified according to their origin. There are two main categories of fibre source:

- natural fibres
- manufactured fibres.

Often manufacturers combine these two fibre sources to create fibre blends.



## Properties of fibres

All fibres have different properties or qualities. Properties determine the end use of the fibre. It is important to understand the properties of fibres and fibre blends to understand how they will perform when you are constructing your textile project work.



Manufactured fibres

Fibre properties		Definition
Aesthetic	Lustre	Gloss, sheen, sparkle or shine of a fabric caused by light reflecting from the surface of the fibres, yarn and fabric.
	Drape	How a fabric hangs or falls.
	Handle	The way a fibre behaves when used.
Functional	Abrasion resistance	Ability to withstand rubbing or wear and tear.
	Strength	Ability to resist breaking.
	Absorbency	Ability to absorb moisture.
	Resilience	Ability to return to the original shape after being scrunched, folded or creased.
	Dimensional stability	Resistance to shrinking or stretching.
	Elasticity	Ability to return to the original shape after being stretched or compressed.
	Thermal properties	Ability to withstand and transfer heat.

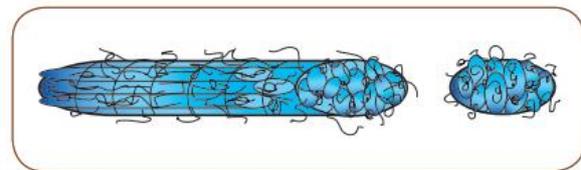
## Natural fibres

Natural fibres are available from resources in our environment; that is, they occur naturally. The two main sources of natural fibres are animal and vegetable fibres.

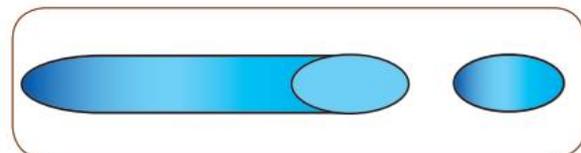
Natural animal fibres are obtained from the hair or fleece of an animal and are known as staple fibres. Staple fibres have a relatively short length. Sheep, goat, rabbit, camel and alpaca fibres are examples of animal fibres. Continuous lengths of fibres are known as filaments. The only natural fibre filaments that occur come from animals. They are silk from a silkworm cocoon and spider silk.



Shearing a sheep to remove the fleece



Staple fibres



Filament fibres

Natural animal fibres are obtained from the hair or fleece of an animal and are known as staple fibres. Staple fibres have a relatively short length. Sheep, goat, rabbit, camel and alpaca fibres are examples of animal fibres. Continuous lengths of fibres are known as filaments. The only natural fibre filaments that occur come from animals. They are silk from a silkworm cocoon and spider silk.

Vegetable fibres are obtained from plant matter, including seed pods, grasses, leaves, stems and husks of plants. Cotton, jute, flax, sisal, coir, kapok, ramie, raffia and hemp are examples of plant fibres. All plant fibres are staple fibres.

All fibre sources have different physical characteristics that determine the properties and end use of the fibre. For example, the fibres may be fine and smooth or coarse and curly. All natural fibres usually have irregularities that make them unique and enhance their quality.



White cotton singlet and classic cotton denim jeans



Luxurious silk dress



Hemp rope

## Manufactured fibres

Manufactured fibres do not occur in nature. Manufactured fibres are made using chemicals and are categorised as either regenerated fibres or synthetic fibres. The production of manufactured fibres occurs in factories.

Viscose rayon and acetate are examples of regenerated fibres. Nylon, polyester and acrylic are examples of synthetic fibres.



Polyester satin cheongsams



Nylon parachute



Acrylic jumper

## Fibre blends

All fibres have unique and individual characteristics. Manufacturers often choose specific fibres and blend them according to the characteristics that they require in the finished product. The correct selection and proportion of the fibre blend is essential to ensure the blend is successful for the textile item's end use. Cotton/polyester and cotton/Lycra are examples of successful fibre blends.



Cotton/polyester school uniform



Cotton/Lycra dance costume

## Activity 11.1 What are you wearing?

Using items from your wardrobe, complete the following table by identifying the fibre content of each textile item listed. Write the fibres listed on the garment label and the fibre source.

	Textile item	Fibres listed on the label	Fibre source
	Sports socks		
	Undergarments		
	Jeans		
	T-shirt		

Continued overleaf

	School jumper		
	Swimming costume		

## Types of natural fibres

### Cotton: a staple vegetable fibre

Cotton is a cellulosic fibre. This means it is formed from cellulose, the carbohydrate which is the main constituent of the cell walls in most plants. Cotton is produced by the cotton plant. The fibres are obtained from the seeds in the cotton boll, and are harvested with cotton pickers and strippers. These are mechanical harvesters attached to a tractor. The cotton is then ginned to separate the seeds from the fibres.

Cotton is known for its durability, appearance and natural comfort. Specific end uses include all types of apparel, such as jeans, T-shirts and underwear; home furnishings, such as sheets and towels; and non-apparel items, such as medical supplies and tents. Cotton is also blended with other fibres, including Lycra, polyester and wool.



A cotton boll



Cotton sheets



To find out more, visit the Cotton Australia website.

Fibre properties		Cotton
Aesthetic	Lustre	The lustre of cotton is poor.
	Drape	The drape of cotton is poor but can be improved depending on the fabric construction.
	Handle	Cotton is cool and crisp. It crinkles when crushed. Cotton is soft against the skin.
Functional	Abrasion resistance	Abrasion resistance of cotton is moderate to good depending on the fabric structure. For example denim, made using a twill weave, has high abrasion resistance.
	Strength	Cotton fibres are relatively strong. Cotton becomes stronger when wet.
	Absorbency	Cotton is highly absorbent, holding up to 27 times its own weight in water. Cotton is a very comfortable fibre to wear in hot weather as perspiration is quickly absorbed. Cotton is easily dyed as it is hydrophilic. This means it readily absorbs water.
	Resilience	Cotton fabrics have poor resilience due to the inelastic nature of cotton.
	Dimensional stability	Cotton garments retain their shape due to the fibre's inelasticity. However, if a garment stretches out of shape it will not return to its original size.
	Elasticity	Cotton is relatively inelastic, as it has a low ability to return to its original shape after being stretched or compressed.
	Flammability	Cotton burns quickly, leaving a light grey ash.

## Activity 11.2 Cotton under the microscope

Use the Cotton Australia website to discover the facts about cotton. Create a table like the one shown below and note five interesting details about each of the topics shown.

Select and download one of the Cotton Australia fact sheets. Choose five interesting details that you have learnt from the fact sheet. Present them to your class in an oral presentation.

Cotton is probably one of the most versatile fibres. Conduct a quick wardrobe survey of the items in your wardrobe and make a list of all the items that are cotton or cotton blends.

Fact sheet	Five interesting details
About cotton	
Cotton products	
Cotton fabric	
Cotton in Australia	

*Continued overleaf*

Growing cotton in Australia	
Growing cycle	
Processing	
Environmental effects	
Water	
Research and technology	
Biotechnology	

## Wool: a staple animal fibre

Australian wool is recognised for its high quality and is sought after in international markets. Mostly wool is taken from the fleece of domesticated sheep, but it can also come from other animals, such as alpacas, angora and cashmere goats, camels, llamas and vicunas. Specific end uses include underlay blankets and all types of apparel, from fine wool suits to formal attire and classic jackets.



Unprocessed wool fibre



Visit the CSIRO website to find out more about wool.



Hand-knitted woollen scarf and hat

### Activity 11.3 Wool, the versatile textile

Use the CSIRO website to discover the diversity of wool as a fibre. On the website, select 'materials', then 'textiles', then click on 'wool textiles'. Advances in wool processing technology and creation of new products often draw on scientific knowledge of the wool fibre.

- In groups of three or four, select an article from the wool textile features list. Record at least six interesting facts from your chosen article. Present your findings to the class in an oral presentation.
- Research and record a brief history of wool in Australia.

Fibre properties		Wool
Aesthetic	Lustre	Wool fibres generally have a matte appearance, so are not typically lustrous.
	Drape	The drape of wool is exceptional, making it perfect for all types of apparel and furnishings. The drape of wool can be modified through the choice of yarn structure, fabric structure and finishing techniques.
	Handle	Like the drape, the handle of wool can be modified through the choice of yarn structure, fabric structure and finishing techniques. The versatility of wool is so great that consumers can buy anything from a luxurious gossamer-weight voile evening dress to a resilient, hard-wearing carpet.
Functional	Abrasion resistance	The durability of wool is good. Abrasion resistance is moderate. This is because the fibre has a scaly surface at the microscopic level and excellent elasticity.
	Strength	Wool fibres are weak due to the fibres' highly amorphous structure. This means the fibres are more widely spaced and less ordered in orientation. The coarser the wool diameter, the stronger the wool fibre; this is why coarser fibres are often used in the manufacture of carpets.
	Absorbency	Wool is extremely absorbent and is therefore comfortable in most conditions. The absorbency is high due to the fibres' amorphous structure.
	Resilience	Wool is highly resilient.
	Dimensional stability	Wool has poor dimensional stability.
	Elasticity	Wool has excellent elastic recovery.
	Flammability	Wool does not burn; it has a self-extinguishing property that makes it perfect for flame-resistant cloth. It is ideal for use in fire-fighters' suits, theatrical curtains and home furnishings.

Theatre and stage curtains are often made from wool fibres. Wool fibres insulate, absorb noise, drape beautifully and do not ignite, making them the perfect choice for theatre fittings. Often the seats, wall linings and carpets are all made from wool.



## Activity 11.4 The Aussie Ugg



Visit the Australian Grown website to complete this activity.

- 1 Read through the Ugg Australia case study on the Australian Grown website.
- 2 Conduct an internet search on the history of the Ugg boot and write up the results in your folder.
- 3 Design an advertisement to promote Australian Ugg boots.



Girl wearing Ugg boots

## Silk: a filament animal fibre

Silk fibres are the fine, long filament fibres that are wound up inside the cocoons of silk moth larvae. There are many types of silk, from wild silk to raw silk to cultivated silks.

Producing silk is a lengthy process and demands constant close attention. To produce high-quality silk, there are two conditions which need to be fulfilled: preventing the moth from hatching and perfecting the diet on which the silkworms feed.

Silk has a fine, smooth, uneven texture. Specific end uses include evening and wedding apparel, ties, scarves, stockings, fine blouses and shirts.

### The story of silk

Silk is one of the oldest fibres known to man. According to Chinese legend, the fibre was first discovered in 2640 BC by Xi Ling Ji, the 14-year-old wife of China's third emperor – the so called 'Yellow Emperor' – Huang Di. It is said that Xi Ling Ji was having tea beneath a mulberry tree in the palace gardens, when a cocoon fell from the tree into her cup of tea. She noticed the cocoon start to unravel in the hot liquid, revealing a long, delicate thread. Xi Ling Ji was so delighted by its beauty and strength that she had thousands of cocoons collected and woven into a robe for the emperor.



Silkworms eating mulberry leaves



Mulberry tree



Silkworm cocoon



Chinese tea cup



Chinese silk brocade shoes

Fibre properties		Silk
Aesthetic	Lustre	Silk is highly lustrous.
	Drape	The drape of silk is exceptional.
	Handle	Silk has a unique handle; it is soft, light and smooth. The rustle of silk rubbing up against other silk fibres is known as 'scoop'.
Functional	Abrasion resistance	The durability of silk is good. Abrasion resistance depends on the construction and fineness of the fabric.
	Strength	Silk is a very strong fibre.
	Absorbency	Silk has excellent absorbency.
	Resilience	Silk has fair resilience depending on the construction of the fabric.
	Dimensional stability	Silk has poor dimensional stability.
	Elasticity	Silk has fair to good elasticity. Lightweight silk fabric is less elastic than heavier fabrics.
	Flammability	Silk burns quickly.



Silkworms at a silk factory



Removing the silk from the cocoon



Woman weaving a silk rug



Silk rug worth \$22 000. It measures 30 cm x 45 cm and has 1000 knots per square centimetre.

## Types of manufactured fibres

### Polyester

Polyester is created from manufactured chemicals. The production of polyester begins with polymer chips, similar to plastic beads, which are melted. The melted polymer is **extruded** through a spinneret, similar to a shower head, then cooled and used as filament or cut into staple lengths.

The technology for creating polyester has evolved since it was first created, and polyester has been reinvented. It is now found in diverse end uses in apparel, non-apparel, furnishings, textile arts and costumes. Polyester is a universal blender, contributing its outstanding properties to many other fibres without detracting from the properties of the blended fibre.

Technologically advanced polyester fibres can be engineered to create a diverse range of fibres with varying end use applications.



These polyester fibres have special channels and were created for use in a sleeping bag.



Sleeping bags

Fibre properties		Polyester
Aesthetic	Lustre	The lustre of polyester is variable depending on the shape of the fibre's cross section and the chemicals added to the fibre, for example delustering agents.
	Drape	The drape of polyester is good but can depend on the yarn and fabric construction. For example, microfibre has exceptional drape.
	Handle	Polyester has a variable handle depending on the shape of the fibre extruded, yarn composition and fabric construction.
Functional	Abrasion resistance	The abrasion resistance of polyester is excellent.
	Strength	Polyester fibres are relatively strong.
	Absorbency	Polyester has poor absorbency. This lowers the comfort of the fibre. Polyester woven with regular, round polyester fibres can be very uncomfortable, as the moisture does not escape. Polyester is often blended with cotton to improve its absorbency.
	Resilience	Polyester fibres have excellent resilience; fibres resist wrinkling and when wrinkled recover well.
	Dimensional stability	Polyester has excellent dimensional stability.
	Elasticity	Polyester is relatively elastic.
	Flammability	Polyester burns slowly with melting and a thick, black smoke is apparent. It is usually self-extinguishing and leaves a hard black bead residue.

## Nylon

Nylon was the first manufactured synthetic fibre. The production of nylon begins with polymer chips, similar to plastic beads, which are melted down. The melt is extruded through a spinneret, similar to a shower head, then cooled and used as filament or cut into staple lengths.



Polymer chips used to create nylon



The hardened residue of nylon melt



A close up of the melt showing where fibres were extruded through the spinneret



Nylon filament fibres



Nylon fibre has been dyed brightly to create the fancy-dress wigs.

Fibre properties		Nylon
Aesthetic	Lustre	The lustre of nylon is variable depending on the cross sectional shape and the chemicals added to the fibre, e.g. delustering agents
	Drape	The drape of nylon is usually good but can depend on the yarn and fabric construction. For example, it ranges from high drape in sheer formal wear to medium drape in stiff nylon taffeta formal wear to low drape in stiff industrial webbing for non-apparel items, such as car seatbelts or luggage.
	Handle	The handle of nylon is usually good, but can depend on the yarn and fabric construction.
Functional	Abrasion resistance	The abrasion resistance of nylon is excellent.
	Strength	Nylon fibres are relatively strong.
	Absorbency	Nylon has low absorbency. The poor absorbency lowers the comfort of the fibre. Nylon woven with filament fibres can be very uncomfortable in clothing, as moisture does not escape.
	Resilience	Nylon fibres have excellent resilience.
	Dimensional stability	Nylon has excellent dimensional stability.
	Elasticity	Nylon is relatively elastic.
	Flammability	Nylon burns slowly with melting and is usually self-extinguishing. A hard grey or tan bead is left as a residue.

# Types of modified fibres

## Rayon

Rayon is not a synthetic fibre, as it is made from wood pulp, which is cellulosic. The cellulose is chemically modified to create a fibre. Although rayon was originally called 'artificial silk' due to its lustre and soft handle, its cellulosic composition means many of its properties are more similar to cotton and flax. Rayon is classified as a regenerated fibre.

Rayon has many specific end uses, including apparel and home furnishings. Rayon's excellent absorbency and its ability to biodegrade, or break down in the environment, has led to its use as the predominant fibre in the non-woven industry. It is used for industrial wipes and medical surgical products, including bandages and nappies.



Rayon threads are a popular choice for machine embroiderers and textile artists.



Rayon sarongs manufactured for the tourist market

Fibre properties		Rayon
Aesthetic	Lustre	Rayon is a lustrous fibre, so it is often used for formal wear. Rayon may be treated with a delustering finish to reduce the lustre of the fabric.
	Drape	The drape of rayon is good.
	Handle	The handle of rayon is variable, depending on fabric construction.
Functional	Abrasion resistance	The abrasion resistance of rayon is fair and rayon resists pill formation.
	Strength	Rayon has low to medium strength.
	Absorbency	Rayon is highly absorbent as it is an amorphous fibre. It absorbs dyes easily.
	Resilience	Rayon has poor resilience as it is inelastic.
	Dimensional stability	Rayon has poor dimensional stability.
	Elasticity	Rayon has poor elasticity due to the large percentage of amorphous regions.
	Flammability	Rayon burns quickly with a yellow flame. It continues to burn, and creates an afterglow (a kind of glowing coal), then burns away, leaving a light-grey ash residue.

# Fibre blends

## What is a blend?

A blend can be defined as a combination of two or more different fibre types in any fibrous assembly such as sliver, yarn or fabric. Blends, for example, can be made up of fibres that are opposing in composition, length, colour and diameter.

## Why are blends created?

A blend is not created by simply mixing differing percentages of fibres to form a yarn or fabric; a blend is created specifically to meet an end-use application. The blend must offer a superior end-use quality to that of its single fibre, yarn or fabric. This is necessary to ensure that the newly formed blend is able to compete successfully within the textile marketplace.

Blending creates:

- fibres, yarns or fabrics with a more beneficial set of performance characteristics; for example wool or cotton blended with nylon or polyester will retain its natural appearance but improve in durability and abrasion resistance
- an improvement in the quality of a fabric to meet specific end-use requirements
- a better texture, handle or appearance, such as added colour, added lustre or improved aesthetics
- reduced costs and increased profitability; for example, high-end, luxurious silk filaments can be blended with merino wool fibres to produce a more lustrous yarn and fabric that does not have the appearance of wool and is less expensive than its all-silk counterpart.



This microscope image shows the different textures of fibres in a blend.

## Cotton/polyester

The most common blend of fibres is cotton/polyester. This blend combines the best features of each fibre. Cotton is a soft, comfortable fibre with outstanding breatheability, but it wrinkles very easily. When cotton is blended with polyester the result is an easy-care product which has excellent wash and wear properties.

Fibre properties		Cotton/polyester
Aesthetic	Lustre	This will vary depending on the percentages of the blended fibres and also whether the blended polyester has been delustered.
	Drape	The drape of the fabric will vary depending on the percentages of the blended fibres, as well as the yarn and fabric manufacturing techniques.
	Handle	The handle of the fabric will also vary depending on the percentages of the blended fibres and the yarn and fabric manufacturing techniques.

*Continued overleaf*

<b>Functional</b>	<b>Abrasion resistance</b>	This blend has better abrasion resistance than its all-cotton equivalent.
	<b>Strength</b>	Cotton blended with polyester is stronger than its all-cotton equivalent.
	<b>Absorbency</b>	Cotton/polyester is more absorbent than its all-polyester equivalent; it is a much more comfortable alternative.
	<b>Resilience</b>	The resilience of cotton/polyester is significantly greater than its all-cotton equivalent.
	<b>Dimensional stability</b>	The dimensional stability of cotton/polyester is significantly more than its all-cotton equivalent.
	<b>Elasticity</b>	The elasticity of cotton/polyester is significantly more than its all cotton equivalent.
	<b>Flammability</b>	Cotton/polyester reacts to the burn test with slight variations, depending on the quantities of each fibre in the blend.

## Activity 11.5 Microscopic identification

The appearance of fibres under the microscope can be used to help identify their source. Some fibres have a characteristic look which may be used to identify them. Forensic scientists use fibre studies and microscopic identification to solve crimes.

Undertake a microscopic investigation of cotton, wool and polyester.

### Requirements

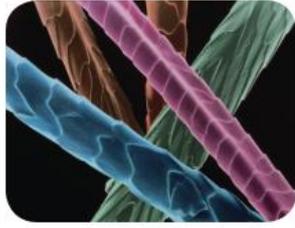
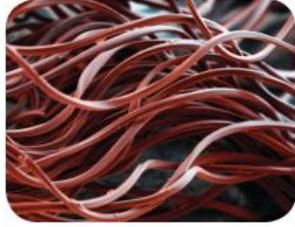
- microscope
- 3 glass slides
- 3 coverslips
- eye dropper
- distilled water
- tweezers
- a light source, natural or electric

### Slide preparation

- 1 Place three to four drops of distilled water on a microscope slide.
- 2 Separate at least three fibres from your fibre source and cut them into 6 mm pieces. Let them drop onto the water on the slide, then carefully place a coverslip over the fibres.
- 3 Examine the fibres under the microscope and record your findings in the table opposite by describing the fibres' characteristics and sketching their appearance.



Microscope

Fibre type	Characteristics	Sketch of physical appearance	Comparison photomicrograph
Cotton			 <p>Cotton</p>
Wool			 <p>Wool</p>
Polyester			 <p>Polyester</p>

## Activity 11.6 Extension activity: textile innovation

In today's society, people are very concerned about manufacturing's effects on the environment. The textile industry is striving to improve its practices to ensure fibre, yarn and fabric manufacture is more environmentally friendly. New fibres have been developed from plants, including bamboo, soy, corn and pine. These fibres are called 'eco-fibres' or 'green' fibres, as they are made from natural, renewable resources which can be grown without the use of pesticides and are biodegradable.



Use the websites of Ecoyarns, LotusOrganics.com and Ecofibre Industries to complete the research task below.

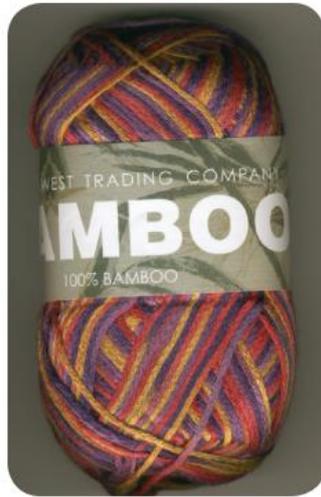
### Research task

- 1 Name an eco-fibre or green fibre.
- 2 What is the fibre made from?

- 3 Briefly explain how the fibre is made.
- 4 What are the advantages of using this fibre?
- 5 Create two thumb sketches which demonstrate the use of this fibre in a textile item. Render and label your sketches. Explain how you have used this fibre in a creative way.



Bamboo fibre



Bamboo yarn



Bamboo knitted fabric



Soysilk fibre



Soysilk yarn



Soysilk knitted fabric

# 12

## Yarns

### Outcome, knowledge and skill statement

#### Outcomes:

- 5.1.1 explains the properties and performance of a range of textile items
- 5.1.2 justifies the selection of textile materials for specific end uses

#### Students learn about:

##### Structure and properties of yarns, including:

- Staple spun
- Filament
- Identify the yarn structure used in textile items
- Describe how fabric, yarn and fibre properties contribute to the performance of textile items

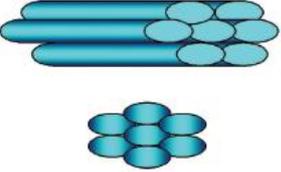
## Textile yarns

Yarns are the basic component of all fabric construction, excluding non-woven fabrics, which are created directly from fibres. Yarns have a continuous length but a small cross-section and can be held together by twisting, bonding, cording or spinning. There are many different types of yarns available. The texture and appearance of a fabric is determined by the yarns used to construct the fabric. The yarns also have a significant impact on the fabric's performance and characteristics.

Multicoloured yarns



## Types of yarns

Yarn type	Definition	Yarn characteristics	End-use applications
Staple-spun yarn 	A yarn made from staple fibres, such as cotton or wool, or manufactured fibres cut into short lengths	Uneven and weak, with poor lustre and durability Good elasticity, resilience and absorbency	Apparel and furnishings
Monofilament yarn 	A yarn made from one filament of a manufactured fibre, such as rayon, polyester or nylon	Fine, strong yarn with good lustre and durability Poor elasticity, resilience and absorbency	Hosiery and invisible sewing thread
Multifilament yarn 	A yarn made from two or more filaments of a manufactured fibre, such as rayon, polyester or nylon	Even, strong yarn with good lustre and durability Medium elasticity and resilience; slightly absorbent	Evening wear and lingerie

## Inserting twist in yarns

The main method of creating yarns is to insert twist. Twisting a strand of fibres brings the fibres closer together and therefore imparts more strength. The amount of twist in a yarn affects the yarn's properties. High-twist yarn is stronger, smoother and more elastic than low-twist yarn, which is softer and more bulky. The structure of the yarn depends upon the end use. For example a high-twist multifilament polyester yarn is used to create a smooth fabric surface and can be used to create a fine-quality satin fabric with high lustre and excellent drape. A low-twist, bulk-textured yarn could be used for a knitted scarf, which would produce a soft, bulky and warm winter apparel accessory.

Properties of a low-twist yarn:

- soft
- hairy
- low lustre
- poor resilience
- weak
- poor abrasion resistance
- good insulation
- good absorbency
- poor elasticity.

Low-twist yarns are used for knitting yarns.



Properties of high-twist yarn:

- firm
- smooth
- good lustre
- good resilience
- strong
- good abrasion resistance
- poor insulation
- poor absorbency
- good elasticity.

High-twist yarns are used for sewing threads.



## Activity 12.1 Spinning a yarn

Tease open a handful of cotton-wool fibres.

Gently draw out about 2 cm of the fibres between your thumb and finger, slowly twisting them at the same time. Continue this process until you have spun about half of the cotton wool.

In the following table, sketch and describe what you see.



Cotton-wool balls

	The unspun fibres	Fibres closest to the unspun end of the cotton wool	Spun fibres furthest away from the cotton-wool ball
Sketch			
Description			

## Types of spinning

Two different methods of spinning are used to create yarns. Staple spinning turns short fibres (cotton and wool) into yarn. Short fibres are combed or carded, then drawn out as they are spun to produce a long yarn. Extrusion spinning creates yarns by passing a fibre-forming substance, such as a nylon polymer, through a spinneret. The substance then solidifies to form a filament.

## Staple spinning

The flow chart below outlines the processing of carded and combed cotton yarns. The difference in processing produces yarns with different characteristics for different end uses.

### Processing of carded and combed yarns



1 Mature cotton bolls are ready for harvesting.



2 A mechanical harvester picks the cotton bolls.



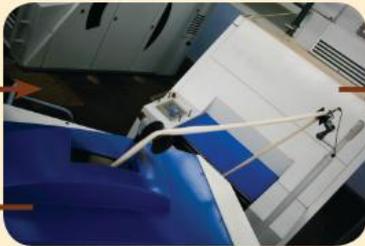
3 Ginning separates the cotton fibres from the cottonseed; removes any foreign matter, such as leaves, from the lint; and combs the fibres.



5 Cotton classers sort the fibres according to length, strength and fineness.



4 Ginned cotton is packed into bales ready for further processing. Most Australian cotton is exported to Asian spinning mills.



6 Carding aligns the fibres and condenses the fibres into a sliver. Short fibres are removed during carding.



7 Combing is an extra process which removes short fibres and other impurities from carded cotton. This creates superior yarns with improved performance characteristics for particular end-use applications. Combed yarn is superior to carded yarn as it is stronger, more uniform and less hairy.



8 Drawing blends and straightens the fibres. This improves the uniformity of the sliver.



9 Spinning adds twist, creating a single spun yarn.

## Properties of carded and combed cotton yarns

Properties of carded cotton yarn	Properties of combed cotton yarn
<ul style="list-style-type: none"> <li>• Medium to low twist</li> <li>• Uneven thickness</li> <li>• Thicker</li> <li>• Poor resilience</li> <li>• Strong</li> <li>• More durable</li> <li>• Soft</li> </ul>	<ul style="list-style-type: none"> <li>• Medium to high twist</li> <li>• Even thickness</li> <li>• Smooth</li> <li>• Fine</li> <li>• Poor resilience</li> <li>• Stronger than carded cotton yarn</li> <li>• Durable</li> </ul>
 <p>Carded cotton yarn</p>	 <p>Combed cotton yarn</p>

## Activity 12.2 End uses for carded and combed cotton yarns

Make a collage of carded and combed cotton fabric samples. From each sample pull some of the yarns from the fabric structure, label them and place them under clear tape in your sample charts.

End use	Carded cotton yarns	Fabric sample collage	Yarn samples
Denim Drill Jeans Gabardine Sheeting Towelling Cotton poplin			
End use	Combed cotton yarns	Fabric sample collage	Yarn samples
Cotton sewing thread Knitted cotton underwear Batiste Lawn Voile Shirting Percale			

## Processing of woollen and worsted yarns



1 Wool on a sheep's back is shorn once a year. The shorn wool is known as 'greasy wool clip'.



2 Shearing in Australia takes place in early spring.



3 Classing ensures that the wool fibres are of similar length and fineness.



4 Wool is baled before being transported to auction.



7 Wool is then scoured or washed.



6 After the auction, the wool is sorted. It is divided into lots that are similar in length and fineness.



5 Wool is auctioned.



8 Wool that is contaminated with burrs and seeds is cleaned with an acid solution. This process is called carbonising.



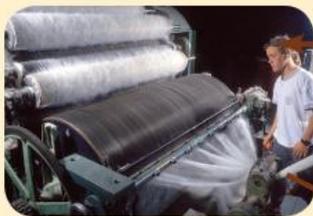
9 Wool is dried on a conveyor belt using hot air.



10 Carding uses wire rollers to tease wool staples apart. The fibres form a carded web, which is then brought together to form a sliver. The short fibres are known as noils; these are removed.



11 The noils are condensed and separated into rovings.



12 Long wool fibres are combed and laid parallel.



13 The drawing out of the tops or rovings reduces the thickness of the yarn.



14 Spinning inserts twist.

## Properties of woollen and worsted yarns

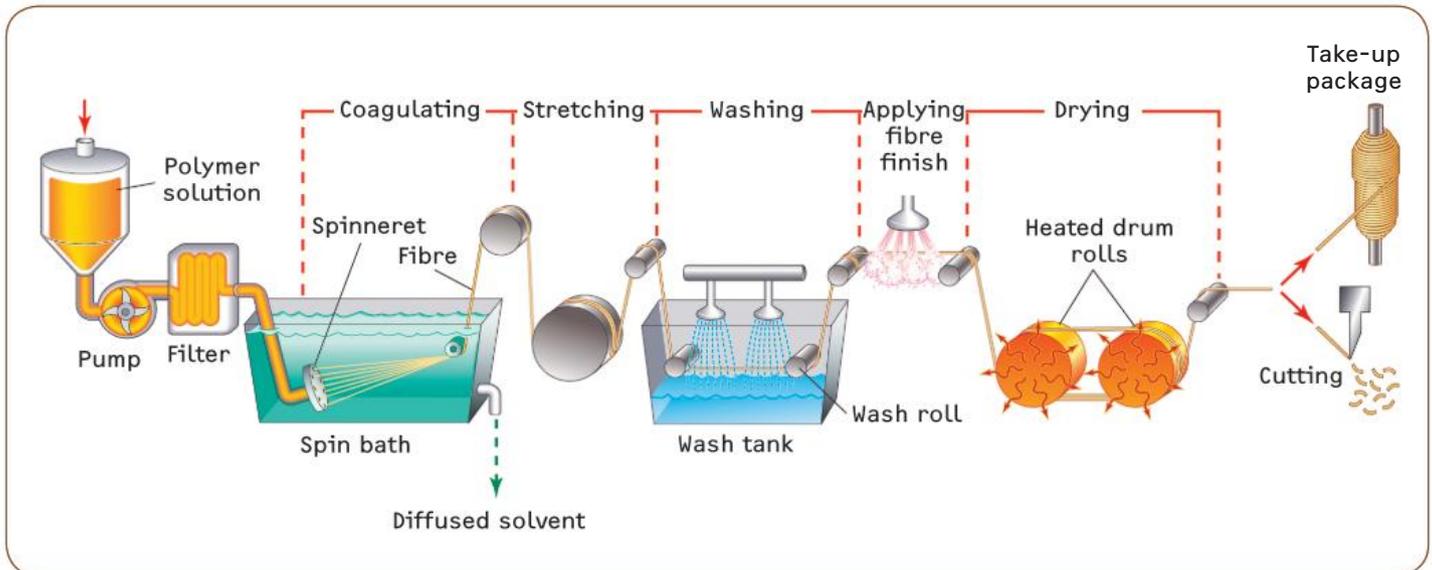
A woollen yarn is characterised by short staple wool fibres that are not always uniform in length. The fibres in the yarn are softer and looser than those in worsted yarn, and are not as uniformly aligned, so they are fuzzier.

A worsted yarn is characterised by longer fibres. The fibres are more uniform in length than those in woollen yarn, smoother and are more compact when spun. These yarns are used in weaving fine suiting.

### Properties of woollen and worsted yarns

Woollen yarn	Worsted yarn
<ul style="list-style-type: none"> <li>• Fuzzier in appearance and duller; more matte</li> <li>• Excellent drape</li> <li>• Less wrinkle-resistant</li> <li>• Weak, less durable</li> <li>• Softer handle</li> <li>• Thicker</li> <li>• More absorbent</li> <li>• Used in carpet and knitting</li> </ul>	<ul style="list-style-type: none"> <li>• Smoother and finer in appearance; gives off a low sheen</li> <li>• Moderate drape</li> <li>• More wrinkle resistant</li> <li>• Harder handle</li> <li>• Finer</li> <li>• Less resilient</li> <li>• Lighter in weight</li> </ul>
 <p>Woollen carpet</p>	 <p>Worsted suit fabric for tailoring</p>

## Wet spinning

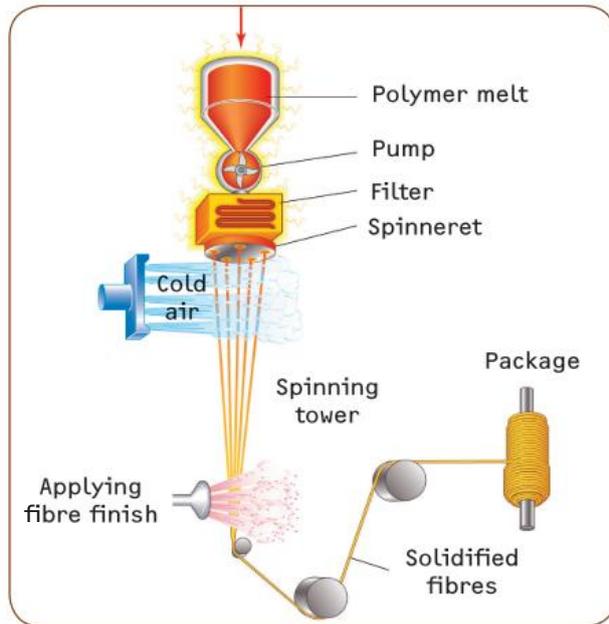


Wet spinning

Wet spinning creates fibres from substances that have first been dissolved in a solvent. The spinnerets are underwater in a chemical bath, and as the filaments come out of the spinneret they form a solid, or precipitate, from the solution. This process is known as 'wet spinning', as the solution is extruded directly into the precipitating liquid. Rayon is produced by this process.

## Melt spinning

In melt spinning, the polymer chips are melted in a container called a hopper. Melt-spun fibres can be extruded, or drawn, from the spinneret in different cross-sectional shapes, for example round, trilobal (three-sided), pentagonal and octagonal. Hollow fibres can also be formed. Each different shape creates an extruded yarn with slightly differing characteristics. Nylon and polyester are created in this manner.



Melt spinning

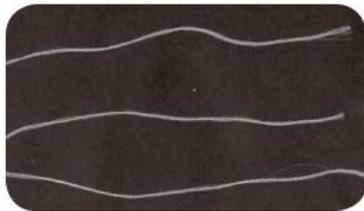


Different-shaped spinneret nozzles  
Image courtesy of Sossna

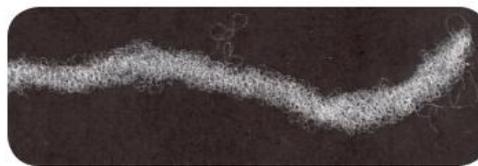
## Types of yarns

### Textured filament yarns

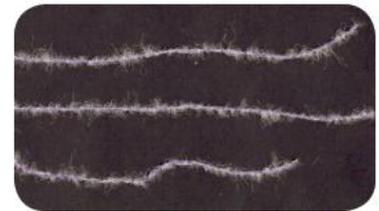
Textured filament yarns are made from synthetic filaments that have been modified to add texture, bulk and elasticity. They may have a false twist inserted, they may be crimped, or they may have had jets of air blown on them during the extrusion process. These methods all add texture to the yarn's surface.



False twist



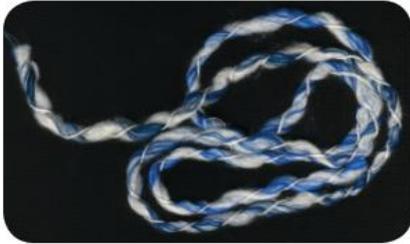
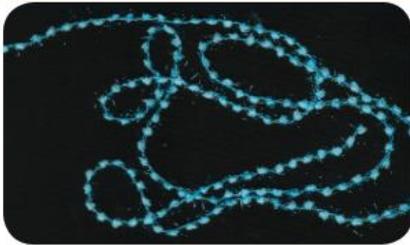
Crimped



Air jet

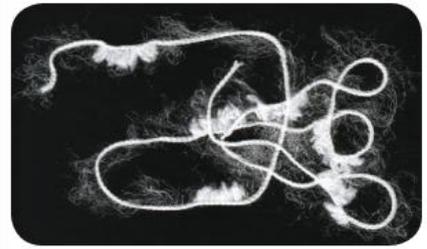
### Novelty or special-effect yarns

Novelty or special-effect yarns are highly sought after by textile artists, knitters and weavers. They are usually quite expensive, as they are more complex to create than plain yarns. Novelty yarns usually have an interesting texture or unusual features that distinguish them from regular yarns, such as carded cotton yarns and worsted woollen yarns. Very often, novelty yarns have frequent colour changes. They can be made by felting, braiding, twisting, knitting, heat-setting, flat-locking or spinning. Novelty yarns use both natural and synthetic fibres and yarns and can be made from staple and filament fibres or combinations of these components.

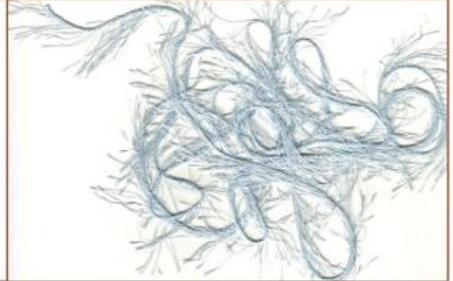
Yarn type and description	Image
<b>Combination yarn</b>	
<p>The yarn shown at right is a combination of eyelash and chenille yarns. Chenille yarns are pile yarns; they have short fibres coming out from a central core. The short fibres are called the pile. The word 'chenille' comes from the French word for 'caterpillar'.</p> <p>Eyelash yarns have a leno weave braided top which is cut, so the long lengths of yarn fly free, looking similar to eyelashes. A leno weave fabric is woven by twisting two warp yarns around each of the weft fibres to form a spiral pair. The fabric is then cut into strips. The fabric strips, which have the pile on all sides, are used as yarns.</p>	
<b>Binder yarns</b>	
<p>This yarn has been created from combed multifilaments of air-jet textured polyester. The polyester has a soft twist, and the yarn is held together by a hard-twist binder yarn, also created with polyester. The binder yarn's function is to add strength by holding the soft-twist yarns in place.</p>	
<p>This yarn has multicoloured irregularities, or slubs, that are called foxtails. They are held in place by a textured multifilament yarn which has been crimped and stitched through with a core yarn binder. This is a yarn that is used to stabilise the structure of several component yarns.</p>	
<p>This polyester yarn has a central binder yarn which is a false boucle yarn. It has regular slubs at even intervals which are made of polyester and feature flat yarns which are highly lustrous.</p>	
<p>This unique yarn is composed of loosely felted wool fibres which have been given stability by a metallic flatlock stitch created on an overlocking machine.</p>	

*Continued overleaf*

This novelty yarn is created by a central cord which has been plaited. The faux slub yarns are created by five loops of a soft multifilament cut-staple microfibre spun yarn. A cut-staple yarn is a filament yarn that has been cut into staple lengths, rather than natural staples. The staple cuts are evident by the fuzzy ends.



This yarn features a corded ply through the centre. The protruding yarns were probably a loop pile which has been cut.



### Activity 12.3 Yarn collecting

- 1 Collect 10 different yarn samples.
- 2 Attach the yarns to a sheet of paper and record the features of each piece of yarn.
- 3 Draw the shape of the yarn.
- 4 Describe how you believe the yarn may have been manufactured.

## Creative surface decoration and design with yarns

Yarns can be used to create fantastic texture, line, colour and shape on textile art surfaces. Textile artists use yarns for knitting, weaving, braiding, couching and crocheting.

The beauty of yarns lies in the fact that the possibilities for creating novelty yarns are endless. Each year the variety of yarns available in the marketplace increases.

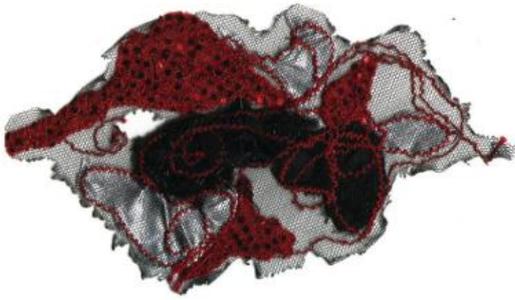
There are several ways that you can use yarns to add creative lines to your textile items.

### Activity 12.4 Creative yarn application

Yarns are an easy way to define a shape or area of a design. Couching requires the textile artist to apply the yarns with a stitch that holds the yarn down. Try your hand at the following creative techniques with yarns and attach a sample of each in your textiles workbook.

- 1 In this sample tulle was placed over the top of black drill. The design lines were applied using a metallic silver corded yarn, and white polyester thread was used to machine zigzag over the top of the metallic corded yarn. The tulle was then cut away in two places to reveal the black fabric underneath.



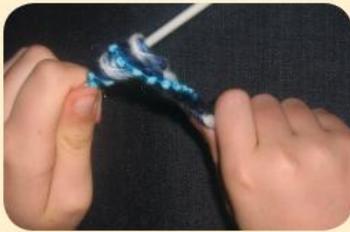


- 2 This sample was created using broder cotton yarn wound onto a bobbin. Tulle, scraps of metallic lycra and other found fabric scraps were used to create the design. The tension screw on the bobbin case was loosened slightly to allow the effect yarn to emerge from the bobbin house. Zigzag was used to stitch the freeform design in place.

- 3 This novelty yarn was created by using a metallic thread and a fluffy texture yarn. Both yarns were thread through the bobbin on top of the bobbin winder. The bobbin winder was then used to twist the yarns together.



- 4 The following technique uses the thermoplastic nature of the yarns to create a new novelty yarn.



First, the yarns are wrapped around a metal knitting needle.



Next, a binder yarn is wrapped around the yarns.



The yarn is then steamed to heat set in place; this takes around 20 minutes.



The yarn is then cooled and taken from the knitting needle to form the new novelty yarn.

# 13

## Fabrics

### Outcome, knowledge and skill statement

#### Outcomes:

- 5.1.1 explains the properties and performance of a range of textile items
- 5.1.2 justifies the selection of textile materials for specific end uses

#### Students learn about:

Common fabric names, such as denim, organza, jersey, polar fleece, felt, staple-spun filament

#### Common fabric structures

- Knitted
- Woven
- Non-woven

## Textile fabrics

Fabrics are constructed using a variety of techniques. The three basic fabric structures are:

- knitted
- woven
- non-woven.

These three basic construction techniques can be used to make fabrics that meet a diverse range of end-use applications.

Although there are only three basic methods for constructing fabric, there are various ways of constructing within those methods. For example, a woven fabric may be plain, twill or satin weave. The nature of the fabric will also be affected by the fibre composition, the yarn structure and the choice of construction technique. The fabric finishing technique will also have an impact on the fabric; for example, a fabric may be finished with sizing, which is a starch-like paste that gives the fabric body and often makes it appear more expensive than it really is.

## Activity 13.1 Choosing fabric

Different choices of fabric are needed to meet the diverse needs of textile project work.

- 1 Collect a variety of magazines, junk mail flyers or shop catalogues to use for cutting and pasting images.
- 2 Using the examples in the table below as a guide, record two more examples of textile items and fabric from each focus area in your textiles workbook.
- 3 Share your examples with the class. You will soon discover the diversity of fabric choice in each focus area.
- 4 Paste images of your examples into your workbook and explain the functional features that the fabric needs to perform its function. If you can, try to suggest a suitable fabric for the examples in your images. You don't have to be specific; you can even just try to name a fibre type at this stage. At the end of this chapter you can come back and make a more professional judgement on the type of fibre and fabric for each construction.

Project area	Textile item	How does the fabric choice suit the end use?	Fibre type and fabric prediction
<p><b>Apparel</b></p> <p>Jeans, shirts, blouses, uniforms, dresses, skirts, T-shirts, formal wear, jumpers, scarves, hats, gloves, socks, sportswear, tracksuits, jackets, hoodies, singlets, underwear, pyjamas</p>	 <p>Pyjamas</p>	<p>Comfortable</p> <p>Breathable</p>	<p>Cotton fabric, such as jersey knit or lawn</p>
<p><b>Non-apparel</b></p> <p>Bags, kites, puppets, bears, dolls, shade sails, tents</p>	 <p>Hot air balloon</p>	<p>Strong</p> <p>Durable</p> <p>Stable: retains shape</p>	<p>Rip-stop nylon</p>
<p><b>Textile arts</b></p> <p>Wall hangings, sculptures, art dolls, art quilts</p>	 <p>Textile art sculpted doll by Anna</p>	<p>Colourfast</p> <p>Durable</p>	<p>Cotton calico</p>

Continued overleaf

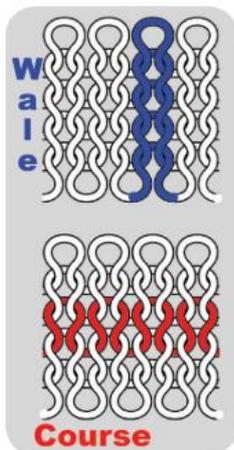
<p><b>Costume</b></p> <p>Headdresses, masks, body armour, dancewear, aerobics attire, gymnastics attire, historical costumes, theatrical costumes, fancy dress</p>	 <p>Cos play anime festival costume</p>	<p>Comfortable</p> <p>Durable</p> <p>Breathable</p>	<p>Cotton stretch-knit singlet and polyester/cotton plain-weave permanent pleated skirt</p>
<p><b>Furnishings</b></p> <p>Sheets, cushions, curtains, doona covers, fibre and fabric lamp shades, chair covers, hammocks, lounges, carpets</p>	 <p>Beanbag</p>	<p>Durable</p> <p>Strong</p> <p>Stain resistant</p> <p>Abrasion resistant</p> <p>Stable: retains shape</p> <p>Colourfast</p>	<p>Cotton corduroy or denim</p>

## Fabric selection

It is very useful to know how a fabric is constructed, as it can assist you in making a successful material selection for your project work. Understanding how a fabric may behave when it is used to construct textile items can solve many problems before they occur.

The variety of fabrics available in the market place is incredibly stimulating to the textile designer. Understanding the choice of fabrics available and the nature of these fabrics is a powerful tool to use when you are purchasing fabric for your project.

## Types of fabrics



### Knitted fabrics

Knitting is the process of creating a fabric from yarns which have been interlooped. The loops of yarns allow the fabric to stretch. The horizontal rows of loops are called courses. The vertical rows of loops are called wales. Knitted fabrics are very comfortable to wear as they stretch with the movement of the body.

The amount of stretch and the direction of stretch in knitted fabrics are variable. A knit may stretch in one direction or it may stretch in both directions. This is an important consideration when choosing fabric for a specific pattern; for example, a dance costume pattern, such as a leotard for ballet, will require two-way stretch fabric.

Knit structure



## Properties of knitted fabrics

The properties of knitted fabrics are determined by:

- the type and quality of the fibre used
- the type, strength and degree of twist in the yarn used
- the type of knit used in the fabric construction.

There are two main types of knit fabrics:

- Warp knits stretch more lengthwise. Examples include tricot knit, lace knits and simple fabrics.
- Weft knits stretch more widthwise. Examples include single jersey, purl knitting, interlock, double knits, hosiery and fashion garments.

## How knitted fabrics are created

Knitted fabrics can be manufactured in the following ways:

**Hand knitting** requires two knitting needles and a ball of yarn. The formation loops are cast on to the knitting needles and the yarn is interlooped together using a variety of stitches to form a fabric.



Hand knitting

**Domestic machine knitting** is created with a machine that requires a user to manually runs loops of stitches to create a fabric.



Example of hand knit style

**Industrial knitting machines** are controlled by computers and create fabric on a flat knitting bed.

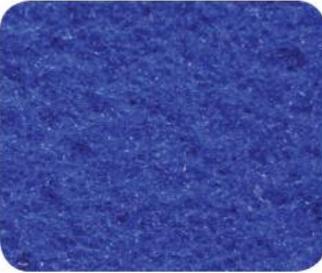


Industrial machine knit jumpers

**Circular seam-free knitting machines** are controlled by computers and create knitted fabric in a tube-like or circular formation.



Circular knitting machine

Knitted fabric type	Structure	Fabric characteristics	End-use applications
Jersey  Right side    Wrong side	Single weft knit	<ul style="list-style-type: none"> <li>• Good elasticity</li> <li>• Unravels</li> <li>• Easily distorted</li> <li>• Edges curl when cut</li> <li>• Low to medium drape</li> </ul>	<ul style="list-style-type: none"> <li>• T-shirts</li> <li>• Jumpers</li> <li>• Cardigans</li> </ul>
Polar fleece 	A soft napped knitted fabric  Recognised for its insulating properties  Often made from PET bottles or other synthetic fibre sources	<ul style="list-style-type: none"> <li>• Provides warmth with little weight</li> <li>• Highly breathable to provide comfort in all activities; does not restrict the movement of moisture vapour</li> <li>• Durable; will outlast other fleece fabrics</li> <li>• Machine washable</li> </ul>	<ul style="list-style-type: none"> <li>• Apparel</li> <li>• Baby wear</li> <li>• Blankets</li> <li>• Travel rugs</li> <li>• Hats</li> <li>• Gloves and scarves</li> <li>• Performance sportswear</li> <li>• Soft toys</li> <li>• Cushions</li> </ul>

## Activity 13.2 Hand knitting

Hand knitting is an example of a single weft knit. The websites at right have a variety of tips on how to knit, plus numerous free projects that you can try if you wish to take up knitting as a leisure activity or undertake a project in your class time.



- Patons
- Cleckheaton
- Panda Yarns

## Case study: Wrap with Love

Wrap with Love was founded to address the needs of people living in poverty in cold environments.

### Cold humanity is our concern

There are millions of people in the world suffering extreme cold. In 1982 Wrap with Love began with the idea to help as many people as possible by providing warm wraps to ward off hypothermia.

Beautiful handmade wraps have been lovingly crafted by more than 25,000 volunteers throughout Australia. In the past years we have sent more than 130,000 wraps to people in over 75 countries, including Australia.



Visit the Wrap with Love website for more information about the organisation and knitting patterns for wrap squares.

## Can you, your friends, family or organisation help right now?

Our 2007 ABC Knit-In was very successful, with a large increase in squares to make wraps. But we now need urgent help in joining them to make completed wraps. So if you can help, please contact us. Most of us can knit and sew. Just one square provides one twenty-eighth of warmth, and collectively, 28 assembled squares create one whole warm and sheltering wrap.



Wraps distributed in Somalia in 2006



Wraps distributed in Zimbabwe in 2005



Wraps at our Rosebery warehouse

### Activity 13.3 Wrap with Love

Hand knitting is one way to create fabric. The structure of a hand-knitted fabric allows air to be trapped in the spaces of the loops, creating a fabric that keeps you warm and insulates against the cold.

If you would like to try your skills at hand knitting, a great way to start is by following the patterns on the Wrap with Love website to create knitted squares that can be used to make blankets for the world's population who need warmth.

### Activity 13.4 Polar fleece

I For each of the areas listed in the table on page 246, select one item from the Polartec range. Sketch the basic shapes of each garment and outline the end-use application. How does the garment meet its functional and aesthetic requirements?



Tour the Polartec website to gather information for this activity.

Polartec clothing and sketch	Functional	Aesthetic
<b>Outdoor</b>		
<b>Fitness</b>		
<b>Fishing</b>		
<b>Workwear</b>		

- 2 Read about the polar fleece used in military wear. Design an all-weather jacket for military personnel. Sketch and render your idea, and label the features of your garment.
- 3 Write one paragraph outlining the fabric qualities of your military garment.

## Woven fabric

Woven fabrics are constructed through the process of weaving, which involves the interlacing of yarns. The vertical and horizontal yarns in woven fabric are called warp yarns and weft yarns. Warp yarns run parallel to the selvedge, and weft yarns run at right angles to the selvedge.

Weaving takes place on a loom. The loom may be anything from a simple cardboard wrap where warp yarns are laid down and weft threads are inserted using a threaded needle, to a combination of laid warps on a loom frame ready for manual weft insertion using a shuttle, to a complex computerised industrial machine.



Simple hand-operated loom, showing weft shuttle insertion



Navajo woman weaving a rug



Industrial computerised weaving

### Properties of woven fabrics

The properties of woven fabrics are determined by:

- the type and quality of the fibre used
- the type, strength and degree of twist of the yarn used
- the type of weave used in fabric construction.

## How woven fabrics are created

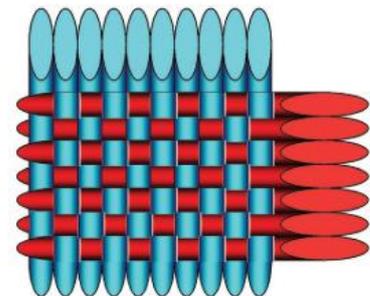
### Plain weave

Plain weave is the simplest type of weave and is the least expensive to produce. Weft yarns pass over one warp yarn and under the next, then alternate on the next row. Plain weaves can be made from any type of yarn, including high-twist yarns, novelty yarns and yarns of different fibre composition and weight.

Plain weave fabrics have no right or wrong side. Because of their even, flat texture, they are often used for printing.

Plain weave fabrics have poor resilience and are less absorbent than other weaves. In an unbalanced weave, one set of yarns is heavier than the other.

The fabric images in the following tables have been provided courtesy of Textile Fabric Consultants Inc. ([www.textilefabric.com](http://www.textilefabric.com)).



Plain weave fabric

Fabric name	Structure of fabric shown	Fabric properties	End-use applications
Poplin 	65% polyester/35% cotton  Unbalanced plain weave which is piece dyed. The weft yarns used are heavier than the warp yarns.	<ul style="list-style-type: none"> <li>• Smooth, crisp handle with poor drape</li> <li>• Good durability</li> </ul>	<ul style="list-style-type: none"> <li>• Shirting</li> <li>• Summer dresses</li> <li>• Children's clothing</li> </ul>

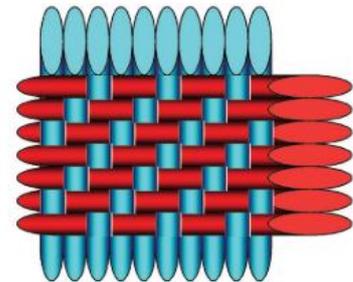
Continued overleaf

<p>Organza</p> 	<p>100% silk</p> <p>Balanced plain weave constructed from highly twisted filament yarns; the fabric has been piece dyed</p>	<ul style="list-style-type: none"> <li>• Sheer fabric with crisp, smooth handle; medium to good drape</li> <li>• Durable, comfortable to wear and easy to press</li> <li>• Little elasticity</li> </ul>	<ul style="list-style-type: none"> <li>• Bridal and formal wear</li> <li>• Millinery</li> <li>• Curtains</li> </ul>
<p>Gingham</p> 	<p>55% polyester/45% cotton</p> <p>Balanced plain weave constructed from dyed yarns; checked pattern created by using white and coloured yarns</p>	<ul style="list-style-type: none"> <li>• Good strength and durability</li> <li>• Easy care</li> <li>• Low resilience</li> <li>• Low lustre</li> </ul>	<ul style="list-style-type: none"> <li>• Blouses and shirts</li> <li>• Dresses</li> <li>• Curtains</li> <li>• Can be used for cross-stitch</li> </ul>
<p>Calico</p> 	<p>100% cotton</p> <p>Balanced plain weave using unbleached, undyed yarns; the yarns have slight slubs or natural imperfections, such as cotton seed lints</p>	<ul style="list-style-type: none"> <li>• Absorbent</li> <li>• Durable</li> <li>• Poor drape</li> </ul>	<ul style="list-style-type: none"> <li>• Toile and pattern making</li> <li>• Lining for furnishings</li> <li>• Canvas for textile artwork</li> </ul>

## Twill weave

In twill weave the interlacing of the warp and weft yarns forms diagonal lines in the fabric. Weft yarns pass over two or more warp yarns, then under one.

Twill weaves have a right and wrong side and are heavier in weight than plain weaves. They are the most durable type of weave and are often used for work clothes. The fabric is a satin if the fabric is warp faced. This means that the fabric predominantly shows warp threads.



Twill weave fabric

Fabric name	Structure of fabric shown	Fabric properties	End-use applications
<p>Denim</p> 	<p>100% cotton</p> <p>Warp-faced twill weave using dyed yarns. The warp yarns are coloured (indigo blue) and the weft yarns are white.</p>	<ul style="list-style-type: none"> <li>• Good durability and abrasion resistance</li> </ul>	<ul style="list-style-type: none"> <li>• Apparel including work clothes and jeans</li> <li>• Home furnishings</li> </ul>

<p>Drill</p> 	<p>100% cotton Warp-faced twill weave which is piece dyed.</p>	<ul style="list-style-type: none"> <li>• Stiff, with low drape</li> <li>• Inelastic</li> <li>• Good durability and abrasion resistance</li> <li>• Good absorbency</li> </ul>	<ul style="list-style-type: none"> <li>• Work clothing and industrial fabrics</li> </ul>
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## Hand-woven necklaces

Helen Banes is an inventive artist who has created a method of structurally integrating beads and thread into hand-woven projects. Her bead-and-thread neckpieces often start with an ornament or collection of ornaments which are used as the main focus or theme. The colouring and theme then determine the artistic style and choice of yarn.

Helen threads beads, gemstones or amulets onto a shaped warp and secures them in place by surrounding them with areas of needle weaving. The contrast of textures provides an aesthetically pleasing textile project.

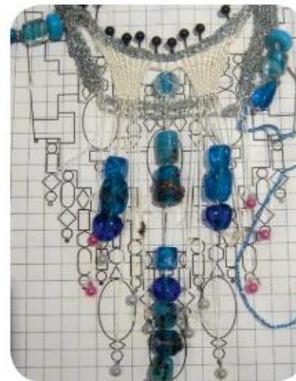
### Activity 13.5 Woven necklace activity



Tour the websites for the following organisations to help you complete this activity.

- The Bead Site
- Smithsonian Education
- Women Warriors
- Ndbele.org

- 1 Create an interesting design for a woven necklace on graph paper.
- 2 Place your graph paper onto a piece of styrofoam, using pins to hold the design in place.
- 3 Place pins at the end of each of your graph paper points and warp up your threads by placing the warp threads ready for weaving. You can thread your beads on the warp as your main focal points.
- 4 Select yarns that you feel suit your beaded project.
- 5 Use the needle-weaving technique to create a firm weave in your design. This will hold the beads in place.
- 6 Secure your weaving and remove your project from the board.
- 7 Use as an interesting neckpiece or textural jewellery item.



- 8 After you have finished your project, list three other textile projects you could use this technique in.
- 9 Research what a bead loom is and write a paragraph explaining how it works.
- 10 Write up a one-page article featuring the beaded designs of the Ndebele tribe of South Africa.

## Non-woven fabrics

The range of non-woven fabrics was once comprised of a very short list of commercial products, such as interfacing and felt. However, in contemporary society non-woven fabrics are emerging as the fabrics of the future. The main reason for this is that non-woven fabrics can be produced quickly and at a low cost.

Non-woven fabrics can be created from natural or manufactured fibres. These fabrics have no grainline, as the fibres are matted together in a variety of methods, including needle felting, chemical bonding, thermo-bonding or mechanical bonding.

### Properties of non-woven fabrics

The properties of non-woven fabrics are determined by:

- the type and quality of the fibre used
- the method used in fabric construction.

Fabric name	Structure of fabric shown	Fabric properties	End-use applications
Felt 	Staple web, usually made from wool but can be combined with other animal fibres  Wool fibres will matt together when agitated in the presence of heat and moisture	<ul style="list-style-type: none"> <li>• Good insulator</li> <li>• Strong</li> <li>• Resilient</li> <li>• Inelastic</li> <li>• Stiff</li> <li>• Poor drape</li> <li>• Will shrink</li> </ul>	<ul style="list-style-type: none"> <li>• Apparel, such as coats</li> <li>• Hats</li> <li>• Furnishings</li> <li>• Sound-proofing</li> <li>• Industrial carpeting and underlays</li> <li>• Toys</li> </ul>

### Activity 13.6 An Aussie icon: Akubra hats



Tour the Akubra website before completing this activity. Make sure you visit the Creation page to see the steps for making an Akubra hat.

- Write up an overview of the history of Akubra hats.
- Record the steps for making an Akubra hat as a flow chart in your textiles workbook.



Akubra hat

### Activity 13.7 Fibres, yarns and fabrics

Select four fabrics left over from projects. Create a table with the following column headings: Sample fabric, Fibre, Yarn, Fabric, End-use applications.

- 1 Write down the fibre content of the fabric.
- 2 Take some yarns from the warp and weft and stick them in the space under the heading 'Yarn'. Describe the yarns: are they staple or filament?
- 3 Describe how the fabric has been created. For example, is it knitted, woven or non-woven?
- 4 Suggest at least two suitable end-use applications for your fabric.

## Area of study: Textiles and society

Successful textile designers bring together aspects of historical, cultural and contemporary perspectives to make their designs a relevant expression of the times. Understanding these perspectives will inform your design practice in textile project work.



- Chapter 14 Historical perspective of textiles
- Chapter 15 Cultural perspective of textiles
- Chapter 16 Contemporary perspective of textiles



## 14

# Historical perspective of textiles

## Outcome, knowledge and skill statement

### Outcomes:

- 5.3.1 analyses the influence of historical, cultural and contemporary perspectives on textile design, construction and use

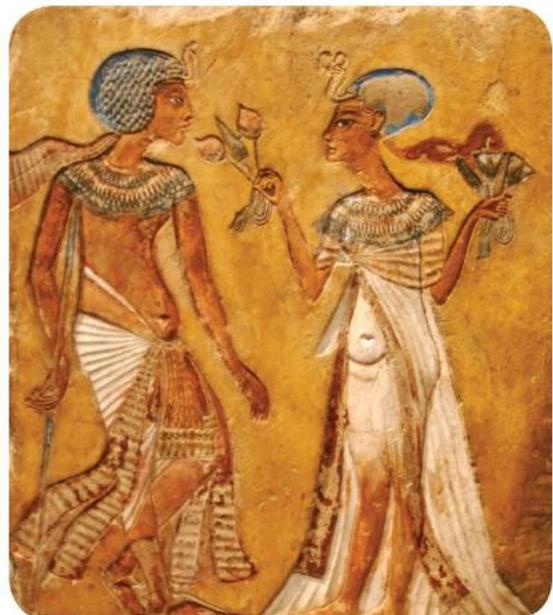
### Students learn about:

#### Historical perspective of textiles

- Historical periods, technological advances and social events that have impacted on the development of textiles
- Design features characteristic of textile items throughout history

Throughout history, textiles have reflected what is happening in society at the time. In times of war and depression, clothing is very austere with little or no decoration. In times of great wealth, clothing is elaborate, displaying bright colours and surface decoration. As technology has developed, the complexity of clothing has too. In ancient civilisations, garments were wrapped or draped around the body and held in place with strips of cloth. Today, garments are cut and sewn to fit the body, and held in place with buttons, zippers and other fasteners. Textile items are often designed and manufactured using computer technology. The range of fabrics available is diverse, from fine silks and cottons to high-performance fabrics such as Lycra and Goretex. Intricate patterns can be printed on fabric and then embellished with surface decoration.

Little in the world of textiles today is totally new. Designers often draw inspiration from past times to develop their textile items. Most designers will be inspired by historical design features which they will interpret in their own unique way.



Wall painting depicting draped clothing of Ancient Egypt



Clothing in the Elizabethan period was highly decorative, featuring lavish embroidery, exquisite lace and embellishment with jewels.



Specialised sportswear constructed from high-tech fabric

## Activity 14.1 'Sourcing the muse'

The Powerhouse Museum invited eight leading Australian fashion designers or design teams to explore the museum's dress and textile collection and select historical objects which they would use as a source of inspiration from which to create a new garment. The designers selected included Akira (Akira Isogawa), Easton Pearson (Pamela Easton and Lydia Pearson), Gwendolynne (Gwendolynne Burkin), Michelle Jank, Nicola (Nicola Finetti), S!X (Peter Boyd and Denise Sprynskyj), Tea Rose (Rosemary Armstrong) and Vixen (Georgia Chapman and Maureen Sohn).



To learn about this project visit the Powerhouse Museum website and search for 'sourcing the muse'.

Select one of these eight designers and complete the activity below.

- 1 Briefly describe the historical item which inspired your designer. Which design features are used in the new garment?
- 2 Briefly describe the garment which was designed.
- 3 Using the same source of inspiration as the designer you selected, design a textile item. Render your drawing and label the sources of inspiration and design features.

# Australian clothing in the first 100 years of European settlement

The First Fleet arrived in Australia in 1788. The conditions here were very different from the countries where the convicts and free settlers had departed from. The climate in England, Scotland, Wales and Ireland was cold and wet. The clothing that people brought to Australia was almost totally unsuitable for the conditions they found in the new country. Gradually, clothing styles changed to suit the hot, dry conditions.

We will explore the historical, technological and social circumstances that have impacted on the development of textile items in Australia through case studies. The information and images in these case studies are reproduced with the kind permission of the Cavalcade of History and Fashion, Inc., a volunteer-run non-profit organisation that is dedicated to preserving Australian social history using fashion as a medium. Cavalcade is a touring collection of over 2500 historic gowns and several thousand accessories, dating from 1788 to the present. All the gowns in the collection have been worn by Australian women and donated to Cavalcade by them or their descendants. As the gowns are donated, the life story of each woman is recorded, and the gown is named after the woman who first wore it. If there are no details of where the gown came from, a name may be chosen that is appropriate to the period from a fashion and historical sense.



The Cavalcade of History and Fashion logo



Visit the Cavalcade of History and Fashion website to find out more.

## 'Mary Tween', c. 1780

Mary Tween was born in England and was of French descent. Mary married in 1787.

Mary's gown, which has been dated to approximately 1778–80, did not come to Australia for quite a few years, but could have been worn to wave farewell to friends or family sailing in the First Fleet at Portsmouth on 13 May 1787.

The gown was handed down in the family, always to the eldest girl, and was brought out to Australia in the mid-1900s. Some of Mary's descendants originally came to Australia in 1871. One brother settled on a property near Ballarat, in Victoria; two settled in northern New South Wales and later in Grafton. One of the brothers went to Brisbane, where he had a general store and also took a covered wagon with goods to the outlying districts; he was also a barber for the country folk and often acted as dentist as well.

During World War II the gown was kept in a tin trunk in a cupboard under the stairs in a house in Kent. When the house was bombed, Aunt Mabel was sitting in the recommended safe retreat under the stairs in the cupboard. Both Aunt Mabel and 'Mary Tween' were undamaged.



The gown 'Mary Tween'



The intricate pleating across the back of the skirt enables the three panels of fabric that make up the width of the skirt to decrease in measurement sufficiently to meet the waist measurement.

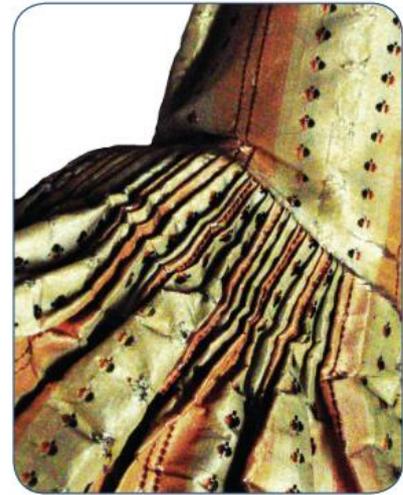
## Fashion history 1760 to 1790

Women's fashions between 1760 and 1790 passed through four stages, from wide-skirted gowns to simply cut dresses. The gown, with a very full skirt and fitted pointed bodice, was generally open right down the front, showing the elaborate petticoat.

The skirt spread sideways, the front and back hanging almost straight down from the waist. At first the widest part of the skirt was at the bottom, but it gradually came upward until the fullness was on either hip. The skirt was distended sideways by whalebone or rods of osier, a type of wicker. This is how the word 'pannier' came about: it is a corruption of the French word for basket, which the underlying structure of the skirt resembled.

Fashionable panniers changed during this era from the early dome shape to a bell shape, before flattening at the front and back. These flattened panniers created difficulties for women when faced with doorways and confined spaces. The large panniers gave way to pairs of smaller side panniers, which were sometimes made of metal frames. These made manoeuvring easier, as the wearer could lift each side up and pass through a narrow space without walking sideways.

The neckline was low, or 'décolleté', either square or V-shaped, and soft white kerchiefs or scarves were worn across the shoulders like a shawl. These were plain or had frilled edges. Sleeves were short, extending to the elbow with a flared hanging cuff and fine lace frills showing below. Pockets were hung from the waist underneath the dress, and were tied around the waist (like a belt) between the gown and the outermost petticoat. Dresses had small slits or openings at the side to let women reach the pockets underneath. Gowns were made of silk, brocaded silk tissue or sometimes satin. Fans were popular until the end of the 18th century.



Detail of pleating from 'Mary Tween'

### Activity 14.2 'Mary Tween'

- 1 Identify five design features of the gown 'Mary Tween'.
- 2 'Mary Tween' had bamboo panniers attached at the hips to support and shape the fabric of the skirt. Sketch these panniers.



Use the Fashion-era website to find out what panniers looked like.

- 3 What other periods of fashion used this type of support structure? In what period did panniers reach their widest?
- 4 Using 'Mary Tween' as a source of design inspiration, sketch a contemporary evening garment. Render and label the design features of the garment.



The Powerhouse Museum has an extensive collection of clothing. Complete a search on their website by clicking on Collection and Research. Select collection search and browse, then type in 'men's fashion 18th century'.

- 5 Research clothing worn by men in the late 18th century. Select an item and write a half-page report, including information about the design features and fabric used.

# Elizabeth Macarthur, c. 1810

Elizabeth Macarthur (née Veale) was the wife of John Macarthur, founder of Australia's merino wool industry and the historic home at Rosehill. She was reared in a quiet Devon vicarage and overcame the many hardships of a long journey from England on the infamous Second Fleet.

It was Elizabeth who conducted the first breeding experiments with merino sheep while John was in England for nine years awaiting court action over his involvement in the Rum Rebellion.

This gown has been named 'Elizabeth' in honour of Elizabeth Macarthur. While she never actually wore the gown, it is in the fashion of 1810 and is very similar to the one Elizabeth wears in a portrait on display in the Mitchell Library.

The gown 'Elizabeth' was actually purchased in about 1880 in Paris from an antique shop and is said to have been worn by the Empress Josephine of France, wife of Emperor Napoleon Bonaparte. This French gown is an embroidered silk net evening gown in the Empire line style.

## Fashion history 1800 to 1835

### Early settlement

In the early years of the colony, there were rioting convicts and conflicts with Aborigines. In spite of all this, the first newspaper had been published, small shops were opening and women tried to maintain their standard of fashion.

Fashion had dramatically changed in this era, influenced by the French revolution at the end of the last century and the French determination to show democracy in all aspects of life. Ancient Greece, as the birthplace of democracy, also became the inspiration for women's fashion of this time. This period was not known for its modesty; in fact, quite the opposite. In 1801, Jane Austen wrote to her sister that she had met a Mrs Powlett, and that she 'was at once expensively and nakedly dressed'.

With the extreme flimsiness of women's clothes the pockets in the garments themselves became impracticable. This led to the appearance of the reticule, a little handbag which was carried by women everywhere they went.



Styles from this period were high waisted. This style was known as empire line and was named for the French First Empire. Dresses featured very low, décolleté square necklines – such as that of 'Elizabeth'. Based on flowing Grecian robes shown in art from classical times, the dresses were embellished with classical decorations, such as geometric shapes and key patterns on hems, sleeve bands and shawls, usually embroidered in a light, delicate style. Egypt and the Middle East were also referenced through embroidered borders. Military-style decoration such as frogging, braids and cords reflected the influence of the uniforms of soldiers fighting in the Napoleonic Wars.

By the end of the Napoleonic Wars, in 1825, dress waists had dropped to a 'high waist' very close to its natural position. Sleeves became longer and more detailed, and skirts became fuller, with petticoats starting to make an appearance.

The gown 'Elizabeth'



Detail of 'Elizabeth' trim

### Activity 14.3 'Elizabeth'



Visit the Australian Government Culture and Recreation website to find out about the Colonial era.

- Using the website above, create a half A4 page report on women in Colonial Australia. Comment on the type of clothing worn by women at this time in history in Australia. Would you have liked to be a colonial woman?
- Create a collage of contemporary fashion images which have an empire line design feature.
- Matthew Flinders was a famous explorer in the early 19th century. Based on the image of Matthew Flinders at right, describe the clothing worn by men in Colonial Australia.



## Margaret, c. 1837

Margaret Stuart Rowe was born in Ireland. At the age of 25 she married Francis Meredith Scott, aged 30, in Melbourne on 24 January 1872.

This gown is believed to have been part of Margaret's grandmother's trousseau. The gown features a low neckline and has sleeves with hand-stroked gathers. These gathers were placed and spaced by hand, with the dressmaker literally stroking the fabric to achieve the desired effect. The dress has a matching vandyke mantle, which was worn when outdoors to protect Margaret's delicate complexion from the sun.

The gown 'Margaret' arrived at Cavalcade of History in pieces and was restored by hand in 2000.

## Fashion history 1840 to 1850

Margaret Rowe would probably have worn four to five petticoats in order to attain the full-circle bell shape of her silhouette. Each petticoat would have been hand embroidered and decorated by the women of the family as they sat at home after dinner. Broderie anglaise, lace inserts, embroidery, frills and tucks would make these garments, which were never meant to be seen in public, quite beautiful. Under the last white petticoat is a red flannel petticoat, which was worn to keep away the fevers. No sensible woman would venture out without one.

Once Margaret's gown was placed over the top of all these undergarments, the weight and the heat would have been considerable, particularly during an Australian summer.



The gown 'Margaret'



Petticoats for the gown 'Margaret'

### Activity 14.4 'Margaret'

1 Conduct a web search to answer the following questions:

- What is a trousseau?
- Did it serve a specific purpose?
- Do trousseaus still exist?

2 Describe the clothing worn by men on their wedding day in the 19th century.



## Jessie Campbell, c. 1855

This two-piece gown with tiered skirt and pagoda sleeves was worn by Jessie Blackwood at her wedding to George Campbell on 10 July 1885 in Glasgow. The newly wedded couple emigrated to Australia that same year and purchased a property in Cowra named 'Jurula', where they lived and had four sons and three daughters.

Coloured wedding gowns were popular in this era as they could be worn again. 'Jessie Campbell' is made of royal blue brocaded and water-marked taffeta. Skirts were wide and generally there were two bodices: one with a modest neckline and long sleeves for day and a more elaborate low-cut version with short sleeves for evening.

The 'day' bodice is fastened at the front and has fashionable pagoda sleeves, which are narrow at the shoulder and widen toward the wrist, to reflect (in miniature) the shape of the skirt. The sleeves were open at the cuff to reveal white undersleeves of lace or muslin, which were detachable.

The skirt is voluminous, with a circumference of more than 3.5 metres at the hem. It is in three tiers and is worn with many petticoats over a crinoline underskirt made of horse hair and linen. This heavy underskirt was replaced in 1856 by the cage crinoline, which was made of hooped wires held together by sturdy fabric tapes. This greatly reduced the number of petticoats and the overall weight of the undergarments.

We often wonder on what grand occasions Jessie would have worn this beautiful outfit to in country New South Wales. When 'Jessie' was donated to Cavalcade in 1972, there were some grass seeds caught in the silk fringe on the skirt.



The wedding gown 'Jessie Campbell'

## Fashion history 1850 to 1860

In the first half of the 1850s the emphasis was on breadth. The exaggerated width of the shoulder line was accentuated by the ballooned sleeves and the wide hem of the full skirt contrasted with the small waist, which was laced as tightly as possible.

The crinoline was originally a stiffened petticoat designed to extend the skirt. The word derives from the French word *crin*, meaning horse hair, and in about 1830 crinoline was the name of a stiff fabric made of horsehair and cotton or linen.

Crinoline petticoats were introduced during the late 1830s when bell-shaped skirts became fashionable. Originally made of the stiff crinoline fabric, later versions were reinforced with cording or hoops. However, several heavy crinolines might be needed to do the job, and the invention of the lightweight cage crinoline in 1856 rendered crinoline petticoats obsolete.



Detail of bodice

However, in 1863, Queen Victoria declared that the crinoline frame was 'indelicate, expensive, dangerous and hideous'. By the end of the 1860s, the crinoline shrank in size and was worn with a bustle or replaced by a crinolette, which was a type of cage crinoline with hoops only at the back, so the silhouette was flatter at the front. This allowed the back of the skirt to be draped according to prevailing tastes.

## Activity 14.5 'Jessie Campbell'



Visit the Fashion-era website to find out about historical fashions.

- Compare and contrast the following undergarments: panniers, crinolines, bustles and crinolettes.
- Create a collage of contemporary fashion images which have a crinoline or bustle design feature.

## Catherine, c. 1878

This gown belonged to Catherine Elizabeth Wren. She was a direct descendant of Sir Christopher Wren, the architect of St Paul's Cathedral in London. Catherine's parents emigrated to Australia from England and settled in Bega, where Mr Wren became the manager of the Kameruka Estates.

Catherine was born in 1847 and in 1865 married a Mr Stiles, also of Bega. They were married in the drawing room of the Kameruka homestead, as there was no church in Bega at that time. Catherine died in 1947.

Catherine's bustle gown is black machine lace over pink silk, with velvet trim. The skirt is slimmer than in earlier styles, flat at the front, with an exaggerated bulge at the back.

Jet, a type of polished coal, was very popular for jewellery. Much of it was mined at Whitby in England, the birthplace of Captain Cook.



The gown 'Catherine', modelled with a necklace of jet



The bustle was worn between the petticoats and the skirt.

## Fashion history 1870 to 1890

The bustle is an undergarment worn to support and distend the skirt of a dress to create fullness at the back or hips. As a fashion, the bustle lasted for 20 years, changing from small to large and then back to small again.

The word 'bustle' was known in the 1780s, although hip pads or false rumps were terms more commonly used for this type of undergarment. The bustle was revived in the late 1860s when it was often known by the French term *tournure*. In 1873 the bustle was forced to drop down the back of the skirt because of the long line of the popular cuirass bodice. The fashionable silhouette narrowed still further during the later 1870s.

The bustle was reborn about 1880. Its shape differed greatly from those of the previous decade, although its construction still relied on horse hair or wire frames. The 1880s bustle gave an almost shelf-like appearance to the centre back of the skirt. The greatest exaggeration occurred about 1885–87; after this the bustle declined fairly rapidly.

In this era, women changed their gowns several times during the day; not only the fashion conscious but also those who felt that they should do the 'right' thing.

### Activity 14.6 'Catherine'

- The amount of fabric used to make a crinoline gown is similar to that of a bustle gown. Thinking about the change to the silhouette, where did this fabric move from and where did it end up?
- What type of materials would have been used in making a bustle during the 1870s to 1890s?
- What types of material could be used now if you were to make one?

### Activity 14.7 Design trends

- 1 Define the term 'design trends'.
- 2 As a class, divide into five groups. Each group should select one of the five focus areas: apparel, costume, furnishings, textile arts, non-apparel.
- 3 In your group, investigate the cyclical nature of textile design trends in your focus area. Research may involve interviewing adults, library research or conducting an internet search. Where possible, include images of textile items to illustrate the design trends.
- 4 Report to the class with an oral presentation on design trends in your selected focus area. Where possible, comment on trends in:
  - colour and decoration
  - silhouette or shapes
  - fibre, yarn and fabric
  - manufacturing techniques
  - design features.
- 5 In your oral presentation, include predictions about future trends in your focus area.



# Cultural perspective of textiles

## Outcome, knowledge and skill statement

### Outcomes:

- 5.3.1 analyses the influence of historical, cultural and contemporary perspectives on textile design, construction and use

### Students learn about:

#### Cultural perspective of textiles

- The use of textiles as an expressive and functional medium in different cultures
- Design features characteristic of textile items from different cultural groups

Textile items are used in different cultures as an expressive and functional medium. Communities around the world developed their own unique textiles, sometimes in isolation from the rest of the world. In early civilisations the communication and transport systems were not as extensive as those we know today. So communities were not influenced as much by other cultures, but were influenced by the environment in which they lived and the available resources.

Many traditional textile items are unique to the particular culture that creates them. The style of clothing suits their lifestyle and climate. The designs and patterns that decorate the clothing and textile items have significance to the culture and often represent spiritual aspects of their lives or indicate their social rank in society. As trade routes developed, inspiration came from other cultures and the availability and diversity of raw materials increased. In today's design world, designers are inspired by many different cultural aspects and these are expressed in the designer's own unique style.

## Textiles in Indigenous Australian culture

Indigenous Australians made items from animal and plant fibres that were readily available in their local environment. Their traditional textile skills included knotting and basket weaving. They made functional items required for everyday living, such as baskets for collecting food, nets for fishing, skin cloaks for warmth and ceremonial items such as headgear.

Rock, bark and dot paintings were created for a number of reasons, including:

- **Hunting:** animals were often painted to increase their abundance and to ensure a successful hunt by placing people in touch with the spirit of the animal.
- **Religion:** artworks depicted aspects of particular religious ceremonies.
- **Stories and learning:** paintings depicted stories associated with the Dreamtime.
- **Sorcery and magic:** paintings could be used to manipulate events and influence people's lives.



To gain an understanding of traditional Indigenous Australian textiles visit the Powerhouse Museum website and search for the history of Aboriginal and Torres Strait Islander textiles.

## Activity 15.1 Traditional Indigenous textiles

Select one of the textile items featured in the Powerhouse Museum's Aboriginal and Torres Strait Islander textiles website and complete a report on the following:

- raw materials used
- textile techniques used to construct the item
- end use.

## Contemporary Indigenous textiles

Although Indigenous Australians still practise their traditional arts and crafts, they have diversified to include many textile techniques, including screen-painting, batik, hand-painting fabrics and rug making. These mediums have allowed Indigenous designers to express their culture through the use of traditional symbols and motifs in their work.



Tablecloth with dot paint printed design

## Activity 15.2 Contemporary Indigenous textiles



Use the websites for the following organisations to research contemporary Indigenous textiles:

- Injalak Arts and Crafts Association
- AboriginalArt.org (select by style of art, then click on either fibre weaving or printed fabric)
- Tobwabba Art
- Museum Victoria (search for the 'Twined Together' exhibition)
- Powerhouse Museum (search for Indigenous textiles).

From your research, record ten interesting facts that you have discovered about contemporary Indigenous textiles. Communicate these facts to the class in a short oral presentation.



Dot painting



Aboriginal flag



Uluru sunset



Rock painting



## Activity 15.3 Cultural influence on textiles

Using the images on page 264 as inspiration, design a range of home furnishing items to be sold to international tourists.

Render all your sketches and label the design features. Create a product label for one of the items. The product label should include the following information:

- brand name
- country of origin
- fibre composition
- size
- care instructions.

## Textiles in Chinese culture

### Lotus shoes

From the beginning of the 10th century, foot-binding occurred in China. The practice debilitated women, who could not walk normally. It was finally banned in 1911.

At a very early age girls had their feet tightly bound by a long piece of cloth to distort the bone formation and stop the feet from growing. The smaller a woman's feet the more desirable the woman was seen to be in terms of social status and beauty. The origins of the practice are thought to have come from an early form of ballet, but over time status in society became the major reason for the practice. Feet 10 cm or less were called the three-inch golden lily or golden lotus. Women believed they would be more likely to find a husband if their feet were small.



Traditional lotus shoes were small and pointed.

Mothers and grandmothers bound the feet of their daughters and granddaughters. This was thought of as a major event in the child's life, and often female relatives and family friends would travel long distances to attend the first binding of the feet, which occurred at about six years of age. The girl's feet were tightly bound by a long piece of cloth to deform the bone structure and stop the feet from growing larger than 10 to 15 cm. The first pair of shoes were usually red, as this colour signified good luck. They were made by the mother from the finest fabric the family could afford and were embellished with embroidery. The girl's feet were bathed regularly and gradually bound more tightly. It took approximately two years for the feet to develop the shape of an unopened lotus flower bud.

Women often made their own lotus shoes. Wealthy women made shoes from silk, whereas poorer women wore cotton shoes. Shoes varied in style depending on the geographical region and lifestyle of the wearer.

Decoration in the form of embroidery was not only placed on the surface of the shoes, but could also be found on the inside, the heels and the soles. Special parts, such as wooden heels and padded soles, were available from shops and cobblers and were attached to the sole. Decoration usually consisted of flowers, birds and auspicious symbols. The lotus flower, a symbol of fertility, was one of the most popular motifs. Other motifs included butterflies and Mandarin ducks, symbolising marital happiness, and pomegranate gourds and infants, symbolising fertility.

### Activity 15.4 Lotus shoes



Visit the 'Lotus Shoes' section of the History of Footwear website.



Name the colours used for lotus shoes and explain which social group could wear each colour.

### Activity 15.5 Shoes from different cultures



Visit the online resources from the Bata Shoe Museum to view shoes worn by people around the world.



- Select a shoe style that appeals to you and use it as inspiration to design a contemporary shoe style.
- Render your sketch and label the design features.
- Identify the textile materials you would use to construct the shoes.
- Describe the target market for your shoe.

## Textiles in Kuna Indian culture

The Kuna Indians live in the remote San Blas Territory, an archipelago of more than 300 islands on Panama's north coast. The climate is hot and steamy. The people live in thatched houses and farm the land.

Kuna men wear plain, undecorated shirts and pants, but the women wear brightly coloured, highly decorative clothing, including blouses called molas.



Thatched house with molas hanging outside for sale

Although mola is the Kuna word for blouse, it most often refers to the front and back panels of the traditional blouses worn by Kuna women. Molas are a relatively recent craft, and are thought to have derived from a tradition of elaborate body painting. The mola is a functional medium, as it is worn as everyday clothing, but it is also expressive, as it involves an intricate decorative design, often depicting images of the Kuna lifestyle.

The mola rectangles are hand sewn with reverse appliqué by the woman and are always made from brightly coloured cotton fabrics, such as percale. Some designs consist of only two colours, but many are complex designs of three or more colours. Red and black are the most popular colours, but yellow, blue, green, purple and orange are also used. The mola technique transforms simple cotton fabrics into a new fabric which appears to have a carved surface.

The front and back panels of a mola are always very similar but never identical. The Kuna women never repeat a motif. If there are 10 turtles or fish on a mola, each will be slightly different from the others in some slight design element or in size. Typical motifs are geometric, mythological or biblical themes, animals or marine life.

While many mola designs are available to purchase, some are handed down through the generations for family use only. Many women devote all their spare time to mola making; intricate designs may take as much as two months to complete. Usually women make the mola, learning the skill as a young child, but sometimes men will help cut the design.



A Kuna Indian woman dressed in traditional clothing.



Red and royal blue geometric mola square



Detail of an abstract fish mola

## Activity 15.6 Mola



Go to Charlotte Patera's website and click on the Mola Information link to complete this activity.

Following the pattern for the bug mola on Charlotte Patera's website, create your own mola textile.

## Textiles in Hmong culture

The Hmong, or Meo, people live in southern China and neighbouring regions of South-East Asia, including northern Vietnam, Laos and Thailand. They are often distinguished by the colours of their clothing: white, black, red and floral prints.

The Hmong live in isolated villages in mountainous regions. They farm the land, with rice being their main crop. They also hunt and collect jungle produce.

Due to the altitude of the Hmong villages, the temperatures at night and during winter are low. The Hmong clothing styles are functional to protect the people from the cold. Hmong women's clothing consists of a full, pleated skirt that comes to mid-calf in length. Jackets are short; they are decorated with ornamental front edgings and have a large embroidered collar at the back.



Children of the Hmong tribe in Sapa, Vietnam



This short Hmong jacket is decorated with chain stitch, cross-stitch and banding appliqué. Banding appliqué consists of narrow rows of fabric stitched over the background fabric.



Pleated skirt decorated with cross stitch and appliqué. The fabric has been pleated, then dipped in rice starch and pressed with a flat stone.

Hmong men wear loose trousers with jackets that are similar in style to those of the women. The Hmong people need loose comfortable clothing to allow them to climb up and down steep paths in the village. Produce and equipment are carried in a basket on the back, which is suspended from a neck yoke or a band across the forehead. Hmong people often wear elaborate headdresses.

The textile art of the Hmong people is called *paj ntaub* (pronounced 'pon dow'), which means 'flower cloth'. Their work is highly decorative and includes jackets, skirts, tunics, belts, hats and baby carriers. They use mainly undyed homespun and hand-woven hemp or cotton fabrics. After weaving, the fabrics are dyed using natural dyes. Indigo and plant dyes are used to create blue and black colours. Red, green and orange dyes are also used but are less common. Red and brown dyes are obtained from bark and roots.



A Hmong woman walking to market



Hands coloured by working with dye

The motifs on Hmong textiles are images of plants and animals from the surrounding environment. The Hmong people use a number of textile techniques, including satin stitch, cross-stitch, couching and appliqué. The colours and designs used by the Hmong women express their wealth, diligence and availability for marriage.

The textile items of the Hmong people are both functional and spiritual. The baby carrier which the mother uses to carry her baby on her back is embroidered in bright red, yellow and pink to protect the baby from bad spirits. Red is used in Hmong clothing as defence against the spirit world. The red topknot on hats defends the wearer against illness, injury and death.



Cross-stitch garment panel



The ornate hats worn by children are decorated to make the spirits think they are flowers.

## Activity 15.7 Hmong textiles



Conduct a web search on Hmong textiles, then complete the following.

- Select a Hmong textile item.
- Draw and render a sketch of the item.
- Label the sketch with the design features and techniques used by the Hmong people to create the item.

## Textiles in Uighur culture

Originally the Uighur (pronounced 'wee-gur') people lived a nomadic life, but now they have settled in the Xinjiang region in China. This area is characterised by vast deserts and awe-inspiring mountains. Uighur people have their own spoken dialect, and their written language consists of Arabic characters.

Uighur men usually wear a cotton robe with no buttons, two coloured stripes and a belt. The women wear a dress with a skirt underneath it and a black velvet vest on top. Both men and women wear boots.



Xinjiang region, China

The Uighur people have many different styles of embroidered caps. The style depends on whether the cap will be worn by a man or a woman. Men's caps are usually characterised by delicate white stitching on a green background or by embroidery of moons and arabesques on a black background. Women's caps have elaborate beadwork on purple velvet or needlework in a multicoloured patchwork mosaic and flower designs on metallic fabric.



Embroidered top panel of man's cap



Woman's embroidered and beaded velvet cap

The Uighurs are expert weavers and felters, creating exquisite woollen knot carpets and felted carpets. Uighur carpets are noted for their complex compositions of geometric patterns. Uighur carpet-makers dye yarn with extracts from plant roots that do not fade if exposed to sun or water; the colours become richer in time. More than twelve colours are combined in a carpet.

Embroidery is regarded as part of household manufacture. In Uighur households women embroider to meet the needs of their families. Young girls prepare their wedding dowry, a significant part of which is made up of embroidered items. Embroidery is used on curtains, pillow covers, pillowcases, tablecloths, decorative rugs and prayer rugs, as well as clothes. The traditional embroidery patterns are plant motifs, especially flowers. Uighur embroidery features bright colours, usually on a black background. The basic stitch is a chain stitch.



Uighur woman weaving a woollen carpet



Uighur woman creating an embroidered wall hanging



Close up of Uighur embroidery

## Activity 15.8 Uighur embroidery

On black velvet, create a sample of Uighur embroidery. Use a woollen embroidery yarn. Follow the instructions for chain stitch in chapter 9, page 190.

Uighur embroidered bag



# Textiles in Indian culture

India is a large country in the northern hemisphere. Due to its size, the people of India experience a wide range of climatic conditions. A large percentage of the population make their living from the land.

India has a long history of traditions which are still treasured by the Indian people today. Religion influences many of the day-to-day practices of the Indian people, including dress, food, marriages and occupations. Traditionally the cut, colour, texture and brilliance of a person's garments related to their position in society. Today, most Indian people wear western clothing if they live in a city, but in regional areas people still wear traditional clothing.

The textile industry is very important in India. India exports many textile products around the world. This industry was traditionally a cottage industry within local communities, but advancements in technology have brought about many changes, and today textile products in Indian cities are mass produced.

The main fibres used in the Indian textile industry are cotton, wool, silk, jute and goat hair. The textiles are decorated with embroidery, metal thread work, beads and jewels.

Embroidery has been created in the Indian culture since ancient times. Shisha embroidery uses small mirrors and chain stitch to create patterns. The predominant colours are white, yellow, red, green and blue. Flowers and birds are the most common motifs.

Torans and chaklas are door frame hangings and wall hangings. They are traditionally decorated using Kathipa embroidery, which uses a long darning stitch that runs both horizontally and vertically, giving the work textural variety. Designs are usually geometric and feature appliquéd borders. The predominant colours are purple or red, which are worked on an indigo or white background. The designs are stitched with silk thread and herringbone stitch. These designs tend to be geometric in style.



Taj Mahal viewed over farm fields on the Yamuna River at sunset



Woman carrying a big water jar in the village of Chandelao in Rajasthan, India



Shisha embroidery



Indian torans with embroidery and mirrorwork



Indian sari embroidery design



Intricate goldwork on a wedding sari



Metal thread embroidery

## Activity 15.9 Indian printing



Go to the Anokhi Musuem website and watch the video by Geobeats, which explains the process of hand printing.

Write a short report on the technique of hand printing.

## Activity 15.10 Design features

Design features are the parts or elements of the design which make the textile item suitable for its intended end use.

For each of the images below, identify the design features of the cultural textile item shown. Compare the features you identified with those other class members identified and add any features you missed to your list.



Korean traditional clothing



Native American man doing a tribal dance



Scottish man in a kilt



Brazilian carnival dancer



Clothing of Samburu women in northern Kenya



Women dressed in Spanish traditional clothing

## Activity 15.11 Design features



Use the following websites to research current fashion trends:

- Style.com
- About.com: Women's Fashion
- Vogue Australia
- FashionWindows
- Fashion Trendsetter.

Identify designers who have been inspired by cultural design features and explain how they have incorporated the features into their collections.





# Contemporary perspective of textiles

## Outcome, knowledge and skill statement

### Outcomes:

- 5.3.2 evaluates the impact of textile production and use on the individual, consumer and society

### Students learn about:

#### Contemporary perspective of textiles

- The sectors of the textile industry
- Career opportunities and pathways in the textile industry
- The changing nature of work in the textile industry
- Factors affecting consumer demand, selection and use of textiles
- Environmental aspects of textile production
- Textile innovations in fabric, yarn or fibre manufacture

## The sectors of the textile industry

The textile industry in Australia consists of four main sectors. Each of these sectors relates to a different range of textile activities.

- Textiles: processing of natural fibres, production of synthetic fibres and manufacturing of natural and synthetic fibres into yarns and fabrics.
- Clothing: manufacture of finished products, such as clothing and headwear.
- Footwear: manufacture and repair of footwear.
- Allied industries: associated industries, including laundry, dry cleaning, hideskin and leather processing, and sail-making.



## Career opportunities and pathways in the textile industry

The textile industry is a large and diverse industry offering a wide range of career opportunities. If you want to pursue a career in this industry, you will need to do research to gain an understanding of textile careers and select the right career pathway for you.

## Career pathways

If you are thinking of a career in textiles, then selecting Textiles and Design for years 11 and 12 is a good option. By studying Textiles and Design you will develop a strong understanding of design, the properties and performance of textiles and the Australian textile industry. You will also create a major textiles project which will allow you to design, construct and evaluate the production of a textile item from one of the five focus areas.

## Tertiary education

Once you have completed your secondary schooling you might decide to try to find a job straight away in the industry or you might choose to undertake further study. This study could be in the form of a TAFE course, a university degree or a course at a private college.

### Activity 16.1 Tertiary textile courses



Visit the websites of the following organisations to find out more about textiles courses.

- TAFE NSW
- University of Technology Sydney
- College of Fine Arts, University of New South Wales
- RMIT University
- Raffles College of Design and Commerce
- Whitehouse Institute of Design
- National Institute of Dramatic Art
- International Fashion Schools

Using the websites of the organisations listed above, research one textile TAFE course, one textile university course and one textile course at a private college. Compare and contrast each course, including the following information:

- a description of the course, including length and content studied
- career opportunities on completion of the course
- qualifications required to enter the course, for example completion of school certificate or higher school certificate, University Admissions Index
- cost
- location.

Which course appeals to you and why?

## Choosing the right career for you

As the textile industry is diverse, there are many different careers available in all the sectors of the industry. Jobs in the textile sector require specialised skills, as you will be involved in the development of fibres, yarns and fabrics.

An example of a career in the textile sector is a textile technician. To be a textile technician most people do some study at a tertiary level, although some people just have on-the-job training. This job involves analysing, researching and developing new textile products. You could be involved in aspects of the industry from the processing of raw materials to dyeing or quality control. As a textile technician you would need good communication and problem-solving skills, the ability to think logically and an interest in chemistry.



Textile technician



Fashion designer

Often the most appealing sector for a career is the clothing sector. The careers available in this sector are many, from designing, through to manufacture, marketing and sales.

An example of a career in the clothing sector is a fashion designer. Fashion designers are responsible for the design and development of new apparel styles. In the Australian textile industry most clothing is designed onshore and manufactured offshore due to high labour costs. As a fashion designer you will need to be artistic and creative, have good communication skills and be able to work under pressure. Many designers have no formal training but gain experience through working with other designers. Designers usually start off small, selling their products in local markets, then gradually expand their business.

Specialised skills are required to work in the footwear industry. Footwear workers make shoes, boots and sandals using hand and machine tools.

An example of a career in the footwear sector is a shoemaker. Shoemakers design patterns for a variety of footwear. They manufacture and repair footwear and also make specialised footwear, such as orthopaedic footwear. Skills required to be a shoemaker include excellent practical skills, an eye for detail and the ability to perform precise work. Most shoemakers study at TAFE to learn their profession as well as working with an established shoemaker.

The allied industries sector of the textile industry gives people the opportunity to develop careers in the leather industry as well as dry cleaning and textile fabrication.

An example of a career in the allied industries is a dry cleaner. Dry cleaners care for, clean, repair and rejuvenate clothing, curtains, bedding and furnishings by operating dry cleaning and ironing machines. Dry cleaners require a thorough knowledge of how fabrics and their blends react to the various stages of the dry cleaning process, and must apply specialised treatment to fabrics and materials such as wool, silk, leather and vinyl, and to beading and other decorative finishes. Most people in this industry gain on-the-job training.



Shoe designer



Dry cleaning

## Activity 16.2 Career opportunities in the textile industry



Use the Myfuture website to gain information on careers in the textile industry.

Select one career which interests you and create an A4-page article about the career for a magazine for teenagers. Include the following information:

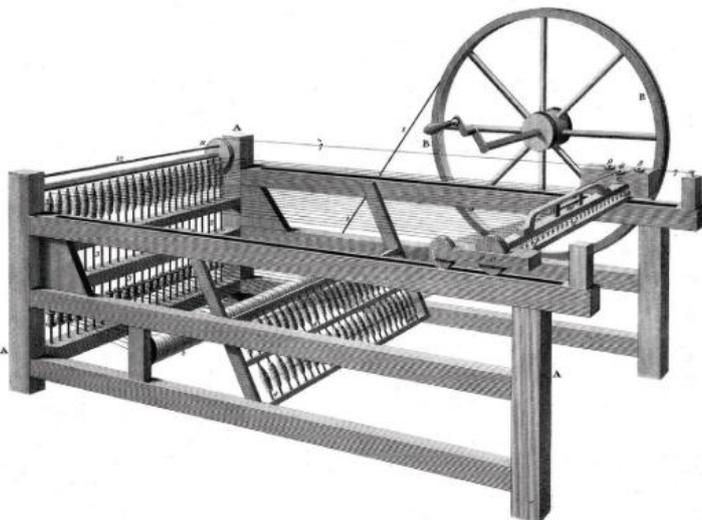
- job description
- skills required
- working conditions
- job opportunities
- salary
- other interesting facts.

Use computer technology to present your article in a way which would appeal to the teenage market.

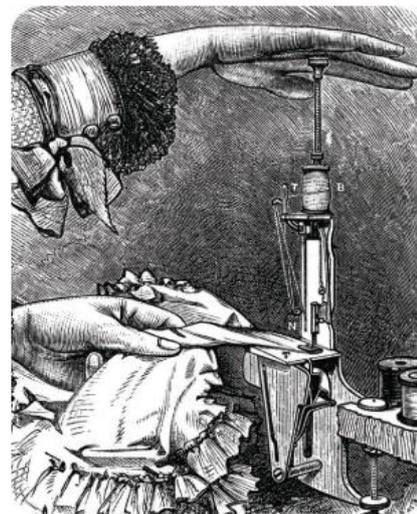
## The changing nature of work in the textile industry

The textile industry started as a cottage industry in homes. The women of a family created textile items for the needs of their family. Equipment was very basic and items were constructed by hand.

The first industrial-style equipment for the textile industry was developed in the 18th century. In 1733 the flying shuttle was invented, followed by the spinning jenny in 1764. These two pieces of equipment revolutionised the cotton and wool industries by increasing the output of both yarn and fabric. The industrial revolution followed and the textile industry became highly mechanised.



Spinning jenny, invented in 1764



Early 19th century sewing machine



Spinning equipment in the 21st century



Weaving loom in the 21st century

## Activity 16.3 Development of the textile industry



Create a flowchart highlighting the major developments in the textile industry from the 18th century to the present day.



The following websites will help you with your research for this activity.

- Spinning the Web
- Making the Modern World
- Museum Victoria

## The textile industry in the 21st century

In the 21st century we have the technology to develop innovative textile products for specific end uses. The products being created have changed, and so has the nature of work and working conditions for textile workers. The number of operators and unskilled labourers has decreased, while the number of technical and management staff has increased. The new technologies require specialised skills in textile engineering, design, computer science, maintenance and marketing. Workers need to be skilled to meet the needs of the industry.

The last ten years have seen many changes in the Australian textile industry. In this time, Australia has changed from a country where all stages of textile processing and manufacturing occurred to a country where textile items are designed. Manufacturing takes place offshore; raw materials like cotton and wool are exported to be processed and are brought back to Australia as finished textile items. This means other countries benefit from the **value-adding** process of manufacture. The textile items manufactured in Australia are for niche markets. These are small, defined groups of consumers whose needs are not met by mass-produced goods. In Australia this includes defence clothing, fire retardant clothing and industrial footwear.

## Outsourcing

In the textile industry there has always been a practice of outsourcing the manufacture of textile items. Outsourcing refers to the practice of employing people to construct textile items in their home. Wages are low, and the workers often work long hours in poor conditions.

### Case study: fair fashion

By Daisy Gardener and Antony McMullen – posted Thursday, 29 March 2007

In 2005, activists covertly infiltrated Australia's largest fashion buying fair as bogus 'EzyWorker' representatives to offer companies fantastically low labour conditions (lax health and safety – and no unions) and the chance to undercut even the lowest overseas rates.

It seems there were companies at the fair that welcomed the idea of even cheaper labour.

As one undercover activist later lamented: 'They liked the idea of it ... some of the most shocking things were when I said "your clothes are being manufactured in China and it's actually quite a high rate – 15 c an hour" – they agreed with me ... they seemed to swallow the fact that we said people could work for 18 hours straight.'

Conditions of employment in the fashion industry both in Australia and overseas are notoriously poor. For example, a new report by the UK based non-government organisation War on Want found that in Bangladesh a living wage (covering costs of food, rent and medicines) is \$55.70 a month. But Bangladeshi textile workers are paid as little as \$20 a month. These employees typically work 12- to 16-hour days, six days a week.

In Australia we have a unique system in place which independently accredits fashion houses to ensure that Australian workers receive their legal entitlements, such as an award wage, superannuation and WorkCover. The Homeworker's Code of Practice and its 'No Sweat Shop' label is supported by 31 companies around Australia, including well-known names such as Bardot, Yakka and Collette Dinnigan.

In spite of this, in our own backyard, conservatively about 40 per cent of people employed in the Australian textile, clothing and footwear industry are homeworkers working in substandard conditions, sewing in their homes and garages. Many inquiries and studies have illustrated the exploitation of homeworkers in Australia. In 2005, senators from across the political spectrum were moved by the accounts of homeworkers at the inquiry on WorkChoices, such as the following, 'the outworkers I know generally get \$4 an hour and even \$3 an hour ... we are supposed to be employees now, but we are not treated that way'.

Fair Wear highlights experiences such as these, recounted by homeworkers:

'I begin work at 8.30 am each day and I stop working at around 12.30 am [after midnight ... and] my life is quite normal [for a homemaker].'

Children can be involved: 'After school I go down to the garage to help my parents [sew] until dinner time ... we continue our work till about 9 pm. I juggle schoolwork while I do sewing. ... Sometimes I have to skip school because I can't get up.'

The high prices paid at the fashion counter contrast with the reality for a homemaker: 'I am sewing skirts for a high fashion label. I receive \$6 per skirt and I take more than one hour to complete each garment. I am pretty fast, so other women take longer ... the retail price is \$230.'

There has been bipartisan support for the maintenance of protections for Australian homeworkers.

The FairWear Eye on Fashion has set up the inaugural 2007 Sweat Shop Award. This award will be given to an Australian company that has excelled in avoiding its responsibility in the manufacturing of their label and has rejected transparency and accountability in their contracting practices.

Nominated companies are publicly named for not taking steps to become ethical after being busted in factories not complying with Australian Federal laws.

As the battle to win hearts and minds of consumers continues, the No Sweat Shop label is a remedy in our own backyard, but how can shoppers avoid overseas sweatshop-made clothing?

Internationally, there are few ethical choices available. In the absence of appropriate legislation, FairWear has introduced the new Fair Work Standard, which is a set of principles for Australian and multinational companies sourcing and or producing garments overseas for the Australian and international market. Built on the principles of basic human and working rights, this standard aims to guide companies to take steps towards ethical supply chain management and towards ensuring fair working conditions for garment workers.

CSR Asia, a social enterprise that strives to be the leading provider of information about Corporate Social Responsibility (CSR) in the Asia-Pacific region, reports that legislation has been put forward in the UK (recently approved) and US that could ban the sale of goods made in sweatshops and allow individuals or organisations to sue companies that violate the law.

Many see this kind of legislation as a solution to the prevalence of new voluntary standards adopted by companies wishing to show off their Corporate Social Responsibility (CSR) stripes. CSR is either a toothless PR exercise or it can be a framework towards a greener, more people-friendly industry if a company is sincere about change. Instead of the uneven and voluntary approach internationally, legislation would compel companies to do the right thing.

Will Australian companies be forced into acting ethically or will they become industry leaders voluntarily? FairWear continues to challenge those companies not taking the hint.

Source: [www.fairwear.org.au](http://www.fairwear.org.au)

## Activity 16.4 Case study questions

- 1 Briefly describe the pay and working conditions for textile workers in Bangladesh.
- 2 What percentage of textile workers in Australia work in substandard conditions and receive below award wages? Briefly describe their work conditions.
- 3 What strategies have been put in place to improve the conditions and pay of textile workers?



No Sweatshop Logo



Fairwear Logo

## Strategies to improve the workplace for textile workers

### Occupational health and safety

Occupational health and safety is generally referred to as OH&S. The *Occupational Health and Safety Act* became law in New South Wales in 2000.

The objectives of the *Occupational Health and Safety Act 2000* are to:

- secure and promote the health, safety and welfare of people at work
- protect people against workplace health and safety risks
- provide for consultation and cooperation between employers and workers in achieving the objects of the Act
- ensure that risks are identified, assessed, and eliminated or controlled
- develop and promote community awareness of occupational health and safety issues
- provide a legislative framework that allows for progressively higher standards of occupational health and safety to take account of new technologies and work practices
- protect people against risks arising from the use of plant (machinery, equipment or appliances).

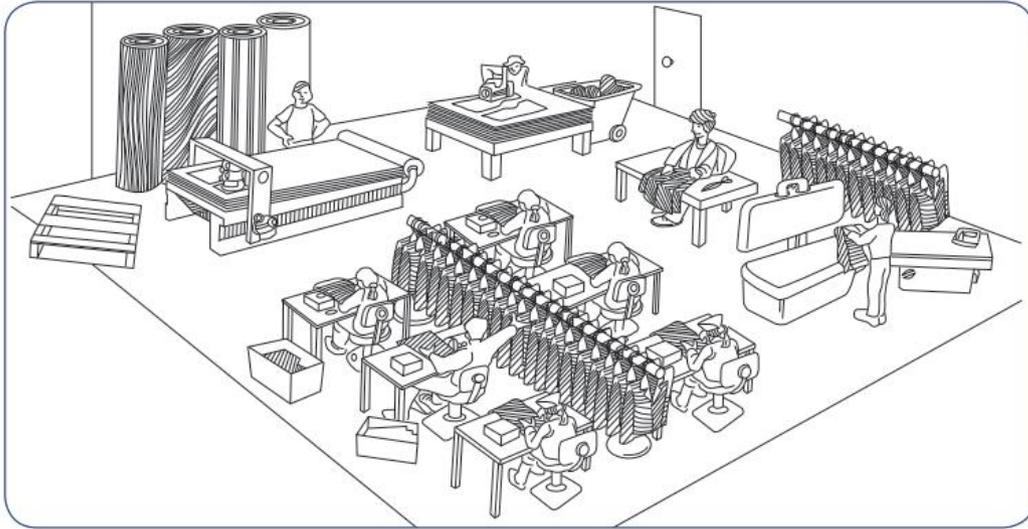
The major OH&S issues for the textile industry relate to manual handling activities, such as lifting, moving and putting down goods, where employees must work in direct physical contact with equipment. The textile industry is labour intensive and many workers suffer unnecessary injuries, such as sprains and strains, associated with hazardous manual handling. These injuries increase the costs significantly for employers, but the human costs for injured workers and their families are far greater. Other significant occupational health and safety risks in the textile industry include noise and hazards associated with plant or equipment, such as electrical, cutting, slicing, entanglement, crushing and chemical hazards.

## Activity 16.5 Safe work practices

Workplace safety is the responsibility of everyone who is in the workplace. Addressing health and safety reduces injuries and workplace disruptions and improves productivity and morale.

In a textile factory there are many potential hazards.

Look at the factory image below and identify potential hazards in the workplace. Comment on how these potential hazards could be controlled.



## Anti-discrimination legislation

Discrimination occurs when someone is treated unfairly because they happen to belong to a particular group of people or have a particular characteristic. In New South Wales many types of discrimination are against the law. These include:

- sexual discrimination, when you are treated unfairly because you are male or female
- racial discrimination, when you are treated unfairly or harassed because of your race, colour or ethnic background
- age discrimination, when you are treated unfairly because you are too young or too old
- disability discrimination, when you are treated unfairly because you have a disability or people think you have a disability.

The laws dealing with discrimination help give everyone in New South Wales an equal chance.



For more information on types of discrimination and how you can seek help if you feel you have been discriminated against visit the Lawlink website.

## EEO principles

EEO stands for equal employment opportunity. These principles help to ensure that every person has the same opportunity to gain employment. Equal Employment Opportunity (EEO) is about:

- ensuring a diverse and skilled workforce
- making sure that workplaces have fair work practices and behaviours
- improving employment access and participation by EEO groups.

# Factors affecting consumer demand, selection and use of textiles

Consumer demand for textile items is affected by many different factors, although the state of the economy of the time is one of the most important. In prosperous times people have a greater disposable income, so they not only buy the essentials, such as basic clothing, but also buy luxury items, such as furnishing items and fashion clothing. There are many other factors which also influence consumer demand for textiles.

These include:

- social trends
- marketing strategies
- gender
- age
- ethical and environmental considerations
- cost.

## Social trends

In today's society there is greater awareness of the effects of textile production and manufacture on the environment. Consumers are seeking to buy textiles that are produced sustainably. This means they do not have a negative effect on the environment. When producing textiles sustainably, designers and manufacturers look at every stage of the textile product's life cycle to ensure they meet specified standards.

### Activity 16.6 Eco textiles

You are a buyer for a large department store and you have been asked by your boss to purchase a collection of eco textiles for the clothing department.

- Conduct an internet search to find out which companies are designing and producing eco textiles in Australia.
- Select your target market: women, men, teenagers, children or babies.
- Create an A3 range board featuring a minimum of four garments manufactured from eco textiles.
- On the range board include information promoting the advantages of purchasing eco-friendly textiles.



gorman Organic SS08 – a selection of gorman Organic spring/summer pieces

An increase in consumer awareness of the damage caused by the sun has resulted in an increased demand for clothing that offers sun protection. Australia has the highest rate of skin cancer in the world, but consumers can help prevent cancers by wearing textiles that protect them from most ultraviolet radiation from the sun. A wide range of sun protection clothing is now produced for work and leisure activities.

## Activity 16.7 Sun protection factor clothing



Divide into teams of four and conduct an internet search to gain an understanding of the type of sun protection factor clothing which is available in the marketplace.



Visit the websites of Triple-X Wetsuits, Stingray Sun Protection Clothing and SunSmart to get started.

Create an advertisement which would appear in a teenage magazine to encourage young people to wear sun protection factor clothing.

Fashion comes in cycles. No fashion is ever new, but designers take design elements from previous times and express them in different ways. Fashion trends are promoted by the media and soon become the desired products of the time. Celebrities are seen wearing these fashions and influence consumers to buy similar textile items.

## Activity 16.8 Fashion cycles

Interview a parent or grandparent and ask them to tell you about clothing they used to wear when they were younger that is now in fashion again. Ask them to talk about design features and the fabrics which were used to make the clothing. If possible, bring in a photo of fashions from a previous generation.

Share your findings as a class.

Australians enjoy their leisure time. Our climate is such that we tend to spend many hours outdoors and require comfortable clothing that we can just relax in or wear for sporting activities.

## Activity 16.9 Sports fashion



Use the Fashion-era website to research the history of sports fashion.

- Write ten interesting facts you have discovered about sports fashion.
- What do you consider are trends in Australia for sports fashion in the 21st century? Use images from magazines to illustrate your answer.

## Marketing strategies

The marketing of products is a complex business concept. There are a multitude of choices available when purchasing textile goods and services. The brand names you purchase or places where you shop can be affected by the product, price, place and promotion strategies employed by the marketer. These four elements of marketing are called the 'four Ps'.

- **Product** is the good or service offered to a consumer. Designers and manufacturers must conduct market research to ensure there is a need for their product in the market place.
- **Place** is the place where a product is marketed and the distribution channels used to get products to consumers.
- **Price** is how much is charged for the good or service. The process of determining a product's price can be complex, as consumers will not purchase products that are not considered good value for money.
- **Promotion** is the advertising and selling part of marketing. Promoting an item helps people understand the item and is an attempt to persuade consumers to buy the product.

### Activity 16.10 Marketing strategies

Evaluate the marketing strategies used by two different textile-based companies. The information for Peter Alexander's company has been completed for you. Select another textile company and record information on product, place, price and promotion. Complete the evaluation by comparing and contrasting the marketing strategies used by Peter Alexander with those of your company.



Visit the peteralexander website for more information about Peter Alexander's company.

Marketing	Peteralexander	Textile company of your choice
<b>Product</b>	<p>Peter Alexander designs and markets a range of sleepwear. The target market is teenagers and people in their twenties. His company, peteralexander, is a boutique, personality-based brand, not mass market or fashion focussed. The products are recognised for their trademark quality and affordability.</p> <p>His signature product is pyjama pants but his range has expanded to include slippers, tracksuits, bed linen and underwear.</p> 	

<p><b>Place</b></p>	<p>Initially Peter Alexander sold his products to all large department stores, including Myer and David Jones. In 1990 he started to market his product through mail order. This proved to be very successful and by 1995 he had over 35 000 mail-order customers and produced four catalogues a year. In 1996 Peter Alexander started to export sleepwear overseas, and by 1997 his products were stocked in over 400 stores in the United States. The first peteralexander concept store was opened in 2004 in Melbourne. Today peteralexander products are sold by mail order, in concept stores and in retail shops around the world.</p> 	
<p><b>Price</b></p>	<p>Peter Alexander strives to create affordable textile products. Most of the pyjama tops and bottoms retail for less than \$50. Gowns retail for between \$50 and \$100.</p>	
<p><b>Promotion</b></p>	<p>A variety of methods are used to promote peteralexander products, but the main ones are mail-order catalogues and interactive catalogues on the internet. Products are also promoted through advertisements in magazines.</p> 	
<p><b>Evaluation</b></p>		

## Gender

Gender – whether you are male or female – influences your textile selection and the textile products you use. From the time we are born society dictates the colours and styles we wear; for example, baby girls are traditionally dressed in pink and boys in blue.

This generation has also seen the development of unisex clothing, which can be worn by either sex. Jeans and T-shirts are an example of unisex clothing.



Baby boy dressed in blue and baby girl dressed in pink



Unisex clothing

## Age

Consumers have different amounts of money to spend on textile products at different stages of their life cycle. Young children are dependent on parents to purchase the products they require or want. Advertising, especially on the television in children's viewing times, is used to make children aware of new products on the market. In shops, new products are placed in prominent positions so children can see them when walking past. They will often beg and plead for their parents to buy the products they have seen advertised or the products that feature their favourite television or movie characters.

Teenagers today usually have part-time jobs and often have a relatively large disposable income. Many teenagers will spend a large percentage of their income on designer label clothing. Clothing companies spend lots of money advertising their products and making them seem very desirable to the teenage market.

As people are growing older and living longer there is a new consumer group in the marketplace. This older group is looking to purchase textile products that represent good value for money and are not so interested in brand names and fashion trends.

## Ethical and environmental considerations

When designing a textile product, a designer must consider consumers' desire for a cleaner and greener world. The protection and preservation of resources, the energy required to process the product and the final disposal of the textile item and residual waste created during manufacturing all need to be carefully considered.

## Cost

Cost is very important if textile products are to be perceived as good value by the consumer. If the cost of a textile item is too low the consumer may consider the product to be of inferior quality and not buy the item. If a product has a higher price tag, the consumer may believe this product is of a higher quality and will last longer; therefore it is worth paying extra for it.

## Activity 16.11 Budget

Imagine you have \$200 to purchase new clothes for the coming season. Visit your local shopping centre or dream shop on the internet. Decide which items of clothing you will buy for the \$200. You can include shoes and bags in your purchases.

Write a brief description of the items you have selected to buy and justify your selections.

## Design and construction qualities of textile items

If you are a designer, manufacturer or supplier of textile items you have an obligation to the consumer to ensure you only market safe products. Designers must make sure that their products are constructed using the correct manufacturing techniques to meet relevant safety standards, and provide clear instructions for proper use and warnings against possible misuse.

## Environmental aspects of textile production

The textile industry generates large volumes of waste and consumes large amounts of energy and water. The degree of environmental impact varies between the different stages of production, fibres and uses.

Cotton has a large environmental impact during growth because of the large amounts of water and pesticides used.



Manufactured textiles have the greatest environmental impact during manufacture because of the large amounts of energy required during production.



*Continued overleaf*

Because clothes need to be laundered, the environmental impact associated with clothing is greatest during its actual use.



## Pollution

Pollution can be defined as the contamination of the natural environment (including air, water or land) by harmful substances. The major pollution concern for the textile industry is waste water and the chemicals (insecticides, herbicides, detergents and dyes) it contains. The textile industry is a minor source of air pollutants when compared to other industries. Land waste in the textile industry is less hazardous and is a result of fabric and yarn scrap, packaging waste and cutting room waste, and unwanted textile products ending up in landfill.

### Activity 16.12 Cotton and the environment

Create a promotional poster to inform consumers about the Australian cotton industry and the strategies that have been implemented to lessen the impact of cotton-farming on the Australian environment.



Visit the Cotton Australia website for more information and fact sheets.

## Recycling

When textile products go into the garbage bin they end up as landfill. Textiles that are 100 per cent natural will slowly decompose over time, but manufactured textiles remain in landfill and will never decompose. Reusing or recycling textile products is a better alternative for the protection and preservation of the natural environment.

## Activity 16.13 Recycling

Divide into five groups. Each group should select one of the textile items featured below.



Silk beaded wedding dress



Nylon parachute



Woolen jumper



Cotton denim jeans



Cotton doona cover and cushion covers

Brainstorm as many recycling ideas as you can think of for the textile item. Draw thumb sketches to explain your ideas.

Share your recycling ideas with the whole class.

## Conservation of resources

To conserve natural resources and become more environmentally friendly, the textile industry needs to consider alternatives to existing practices. Examples include:

- Using organic cotton, which is grown without the use of synthetic insecticides, herbicides and fertilisers.
- Developing alternative, environmentally friendly fibre sources and avoiding synthetic fibres that are made from petroleum products and give off toxic by-products. Tencel is an example of a synthetic fibre that is environmentally friendly.
- Using naturally coloured fibres instead of dyeing fibres and fabrics with synthetic dyes. Cotton can be grown in colours of green and brown. Wool can be naturally black, brown, fawn or ecru.
- Using recycled components, for example recycled PET cords, labels, webbing, buttons and toggles.
- Making long-lasting clothing: if a garment is more durable, it lasts for longer before replacement is needed, so fewer resources are used.

## Activity 16.14 Environmental strategy

Consider the three Rs – reduce, reuse and recycle – and think about your consumption of textile items. How can you become a green textile consumer?

Develop a five-point environmental strategy which is realistic and achievable.

# Textile innovations in fibre, yarn and fabric manufacture

There are two types of innovation in the textile industry. One relates to product innovation and the other to process innovation. Product innovation occurs to meet consumer demands, whereas process innovation leads to lower costs, higher production rates or improved quality.

## Activity 16.15 Fibre, yarn and fabric innovation

Using the websites of the companies below, investigate and report on one textile innovation. Describe the benefits of this innovation for consumers and/or society.



Visit the websites of these companies to help you complete this activity.

- The Woolmark Company
- Australian Wool Innovation Ltd
- Gore-tex
- CSIRO
- Sustainable Living Fabrics
- Nano-Tex
- DuPont

# Glossary

**Apparel** A textile item that can be worn, is functional and can be cleaned easily

**Appliqué** A method of attaching fabric shapes to a backing fabric

**Armatures** Internal wire frames for a toy, such as a doll or a bear, which add stability and sometimes allows movement

**Art quilt** A decorative quilt hung as art on a wall

**Baste** To create a row of temporary stitching that holds pattern pieces or designs in place

**Colour** An element of design; appears when light waves are reflected and absorbed by objects

**Costume** Clothing relating to a particular culture, historical period or occasion, for example a dance costume or a party costume

**Couching** The process of attaching decorative yarns or cords to a fabric using a small zigzag stitch

**Courses** Horizontal rows of loops in knit fabrics

**Cultures** Behaviours and beliefs characteristic of particular social, ethnic or age groups

**Darts** Tapered seams of fabric for adjusting the fit of a garment

**Deconstruction** Taking a textile item apart

**Decoupage** The art of applying images to a surface area covered with a clear glue or resin sealer

**Design features** Elements of the design which make the item function for its end use, for example seams and pockets

**Designing** Visualising and planning the item to be produced; may involve thumb sketches, rendered drawings or computer-aided design

**Direction** An element of design; movement of line

**Double stitching** Stitching the finished seam onto the fabric to create a flat surface

**Drape** How a fabric hangs or falls

**Ease** Allowance for manipulating the fabric so that larger surface areas can fit into smaller surface areas without gathering, pleating or tucking the fabric

**Embroidery** A method of decorating or embellishing a base fabric with yarns

**Evaluation** Reflection on designing and producing

**Exhaustion** The state reached when there is no longer enough colour in a dye bath to transfer to the fabric

**Expressive** Conveying a thought or emotion

**Extruded** Forced through a shaped hole under pressure to create a yarn

**Facings** Fabric pieces that line pattern pieces to finish edges of garments, such as collars or sleeves

**Fibre** A fine thread of any substance with a length at least 100 times greater than the width

**Filament** A long or continuous fibre

**Freezer paper** A white paper with a plastic coating on one side that can be used to form a temporary bond with fabric; can be used as a carrier paper for digital imaging or as a resist stencil for screen printing

**Functional** Able to serve the purpose for which it was designed

**Furnishings** Textile items for interiors or outdoors, such as cushions, bed linen and curtains

**Grainline** A pattern marking which shows the direction of the grain; straight grain runs parallel to the selvedge

**Handle** The way a fibre behaves when used

**Interlining** A layer of fabric placed between the main fabric and the lining; used to give stability or to provide a design surface

**Line** An element of design; leads the eye around a design, shape or form

**Lustre** The gloss, sheen, sparkle or shine of a fabric; caused by light reflecting from the surface

**Mordants** Chemicals that fix a dye in or on a substance by combining with the dye to form a compound that will not dissolve

**Multifilament yarns** Yarns made from two or more filaments of a manufactured fibre, such as rayon, polyester or nylon.

**Non-apparel** Textiles that are functional but not used for clothing, such as tents, sleeping bags and toys

**Notches** Diamond-shaped pattern markings used to align pattern pieces

**Notions** Items other than fabric that are required to finish a textile project; includes threads and closures, such as zippers, buttons and press studs

**Pellon** A non-woven fabric used to add thickness and dimension to a textile item; can be used for quilting, crafts, embroidery, home decorating and apparel

**Performance criteria** The criteria used to judge whether an item fulfils the requirements for its end use

**PMI** An evaluation tool which asks the user to list features of an item under the headings positive, minus and interesting or improvements

**Presentation drawing** A high-quality, rendered drawing

**Printing** Applying a design to the surface of a fabric using a pigment, which may be applied in a number of ways, including block or screen printing.

**Producing** Constructing textile items

**Quilt** To create a three-dimensional pattern by stitching through multiple layers of fabric

**Render** To add style, texture and depth to a design by filling in areas with techniques such as coloured pencil, pastel, collage, black-and-white tonal pencil, computer colour swatches, patterns or fill

**Resist** A barrier to mask an area from the uptake of dye

**Ruching** Gathering up both sides of seam lines to create a folded appearance in a garment area

**Seam** Basic structural element of all textile items; used to connect pieces of fabric

**Selvedge** The woven edge of a length of fabric

**Shape** An element of design; a closed line

**Shibori** A Japanese method for pleating and resist-dyeing fabric which results in striking textures and colour effects

**Size** An element of design; the variations in the proportions of objects, lines or shapes

**Sizing** A starchy substance added to fabric to give it a firmer appearance

**Slip stitch** A stitch formed by slipping the thread under a fold of fabric; sometimes called invisible stitch. It can be used to join two folded edges, or to join one folded edge to a flat surface.

**Soft sculpture** A type of sculpture made using cloth, foam rubber and/or similar material.

**Solvay** A lightweight, non-woven film of water-soluble fabric

**Staple** Short fibres, usually ranging from 15 mm to 1500 mm in length

**Stay-stitch** To create a row of stitching along a seamline to prevent the fabric from stretching

**Stipple** A free-motion quilting technique which uses squiggly lines to quilt or fill in an area of a project

**Stitch in the ditch** A row of stitching in a seamline

**Supporting documentation** Folio work which explains the process of designing, producing and evaluation

**Tack** To use a long machine stitch or to hand stitch to hold fabric in place before stitching the permanent seam

**Target market** The specific demographic group that a product has been designed for

**Textile arts** Textile items that are highly decorative, such as wall hangings, cushions and wearable art

**Texture** Element of design; the surface characteristics of a design

**Thumb sketches** Quick sketches used to demonstrate a design idea

**Twin needle** Two needles on a single shaft that produce two rows of stitches

**Value** An element of design; the range of lightness and darkness within a picture

**Value-adding** Processing raw materials so that they are more valuable, for example turning raw cotton into spun yarn

**Viscous** Resistant to flowing

**Wales** Vertical rows of loops in knit fabrics

**Weaving** Interlacing two or more sets of yarns at right angles to each other to create a fabric

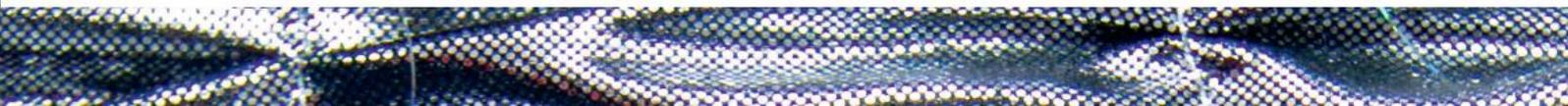
**With nap** Laying out all pattern pieces in the same direction when using a fabric with a raised pile, such as velvet

**Wool tops** Continuous sliver from long woollen fibres

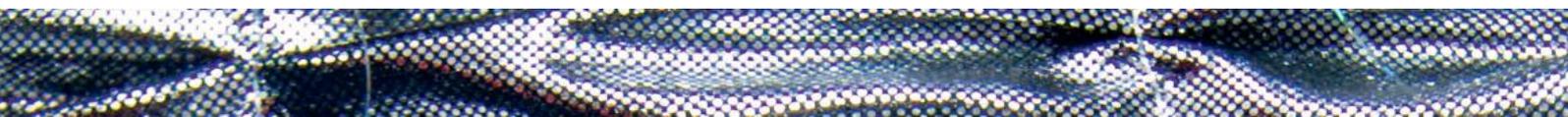
**Yarn** A thread with a continuous length but a small cross section, usually held together by twisting or spinning

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