



Solomon Islands Agriculture

Year **7**

Teacher's Guide



Solomon Islands
Agriculture
Year **7**

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Solomon Islands Curriculum Development Division

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Introduction to this Teacher's Guide

This Teacher's Guide is designed to help you to use the *Solomon Islands Agriculture Year 7 Learner's Book*. It is meant to give you ideas, not to tell you how to teach. The exact methods and timing will vary according to your own circumstances.

Each chapter of this Teacher's Guide corresponds to a chapter in the Learner's Book. The Teacher's Guide outlines ways in which teachers can teach the subject using a variety of learning tools, including practical activities, group discussions, interviews, investigations and different forms of written activities. Thus, individual teachers are not restricted and can adjust the suggested teaching methods to suit their environment and school situation.

With the availability of the Learner's Book, learners will no longer need to copy notes from the blackboard and listen to teachers doing most of the teaching. The text is designed in a manner that facilitates interaction and ensures that the learners will learn from a text that has standardized content. The text also promotes active learning, as individuals learn by using ideas presented in the text rather than merely being told about them. This is an example of outcomes-based education.

The activities at the end of every text will ensure that there is frequent feedback to help teachers monitor the progress of the learners and respond to their individual needs. This will allow even the most reluctant students to connect with their supervisors and will promote greater interaction between the learner and the teacher in the classroom.

The activities are designed in a way that address the most basic sequence of learning. Each activity is designed to target the three levels of learning to assist learners to remember, understand and apply the concepts to real situations. Some other activities give learners opportunities to evaluate and analyze their own learning.

Each chapter in this Teacher's Guide has been structured as follows.

- 1 A unit opener, indicating the name of the unit and the number of periods you should spend on it.
- 2 A sub-strand statement.
- 3 A list of general and specific learning outcomes, which should form the basis of your lessons. These learning outcomes are taken from the "General and Specific Outcomes" section of the syllabus sub-strands.
- 4 Lesson number, lesson title and number of periods you should spend on this lesson.
- 5 The following specific information for teaching each lesson:
 - the page references in the Learner's Book that you should refer to in teaching the lesson
 - your goals for the lesson—by the end of each lesson, you want the learners to achieve certain outcomes, which are listed.
 - a lesson summary—this tells you what information is included in the lesson, and what additional learning you may be required to provide.
 - the method you should use—this is a numbered set of steps for you to follow for the lesson
 - answers to activities from the Learner's Book are provided.

The outcomes-based approach

This Teacher's Guide is written for a Learner's Book that follows the outcomes-based approach to learning. This approach has been adopted by the Ministry of Education and the Curriculum Development Division as part of the new curriculum for Basic Education from Years 1 to 9.

The basis of this approach is that learners should acquire knowledge, understanding, skills, values and attitudes, which will be useful to them later in life. The approach is based on the needs of the

learners rather than the needs of the subject. The emphasis is not on the traditional content of the subject, but on choosing those elements of the subject that will be useful and valuable to learners.

This learner-centred approach contrasts with the teacher-centred approach of the past. The emphasis is on learners learning for themselves with the guidance of the teacher. This means active learning in which learners do things that help them to find out for themselves, think about and draw on their own knowledge and experience, make observations, do experiments and carry out practical tasks. This can be called learning by doing.

Because of this approach, the syllabus and Teacher's Guide refer to *learners*, suggesting active participation in the process, rather than *students*, which suggests passive reception of knowledge.

One way to understand this approach is to think of the more traditional approach of our schools as *banking education*. In banking education, the teacher regards the learners as empty vessels to be filled with knowledge. The learners are then tested by being asked to reproduce the knowledge the teacher has given them. This method relies a lot on the learner listening to the teacher, copying notes from the board, learning them and reproducing them later. This can even be done successfully without the learner understanding fully what they are writing and reading.

The outcomes-based approach can be called *problem-posing education*. This presumes that the learners already have their own ideas, knowledge and skills based on previous experience in school or elsewhere. The job of the teacher is to build on this by posing problems to the learners to make them think about their own ideas and experiences, as well as adding new knowledge and skills. Learners are also exposed to experiences by being asked to observe reality outside the classroom, look at pictures or diagrams, examine statistics and read passages, and thus gain knowledge and ideas for themselves. They are then expected to express these in their own words, not those of the teacher, to prove that they have really understood what they have learnt. Learners are encouraged to be responsible for their own learning, to think for themselves and form their own ideas and opinions. They are encouraged to become critical thinkers and to be able to face new challenges and situations for themselves. Learning becomes a cooperative effort between the learner and the teacher. This approach emphasizes the use of multiple intelligences.

In addition, education is seen not just as a way of passing knowledge and skills but a way of forming the kinds of values and attitudes that will make people good and responsible citizens in the future.

The approach of the Learner's Book

The Learner's Book follows all these principles. It is not just a summary of the factual knowledge and concepts of the subject. There are activities for the learners to do and these activities form an essential part of the learning process. It is no longer good enough to read the book. Learners must also do the activities in the book.

In the past, activities were often included only at the end of a chapter, and learners and teachers often ignored these and moved on to the next section. With these Agriculture books, the activities are part of the text and must be completed in order to fully learn. Some sections or chapters start with an activity, which helps learners to find out information, think about their own experiences and knowledge, or practise skills for themselves.

Many activities are based on discussions that encourage learners to form their own ideas. This helps them to form values and attitudes, which is an important aim of the curriculum.

Many of the activities are to be done in groups. This is to encourage interaction amongst the learners, because learners can often learn as much from each other as they can from the text book or the teacher.

The Learner's Book and the syllabus

The Learner's Book is based on the strands and sub-strands of the syllabus. The order of the chapters follows the order of the sub-strands.

Individual chapters, however, do not always follow the order of the general and specific outcomes in the sub-strands of the syllabus. Each sub-strand of the syllabus outlines the knowledge, understanding, skills and attitudes, that is the Outcomes, we want learners to achieve. The Learner's Book gives guidance about how the learners might best achieve those outcomes. The best way to do this is not always to follow the exact order of the general and specific outcomes in the syllabus. In teaching, therefore, you should usually follow the order of presentation in the Learner's Book. As long as the outcomes are achieved, we have reached our goal.

The Learner's Book is full of illustrations, photos, diagrams and case studies. These are not just included for decoration. They should be regarded as an important part of your teaching. They are often just as important as the words of the book.

Timing: The syllabus and the yearly program planner

The table on page vii is from the Agriculture syllabus. It shows you the total amount of time that should be spent on teaching each of the topics covered by the Year 7 Learner's Book.

Try to spend the indicated number of weeks teaching each strand of the syllabus. Schools vary a great deal in the ability of their learners. This is partly due to the selective nature of our education system at present. After Year 6 most learners choose to go to National or Provincial secondary schools if they can. This means that the most able academic learners move to those schools, and many Community high schools have learners who learn at a slower pace. It is impossible, therefore, to suggest that all schools should teach the strands and sub-strands in the same way or at the same speed. If you find you are unable to teach all the topics in a chapter in the time suggested, choose the most important topics and leave some of the rest. Do not spend so long on one topic that you miss other topics altogether. Try to teach at least some of every chapter in the Learner's Book.

If you find you have extra time available, devise some more activities to study the topic in more depth.

Use of the Learner's Book

You may find learners do not have time to complete all the activities in the Learner's Book. If you do not have time, leave out some sections and move on to the next topic. Do not spend so long on one topic that you miss other topics altogether. Try to teach at least some of every strand of the syllabus. If you have very quick learners make up extra exercises, which challenge them to think about the topic in greater depth.

The Learner's Book and the syllabus

Some chapters of the Learner's Book cover one sub-strand of the syllabus. Other chapters cover two or more sub-strands that are related and best taught together. At the beginning of each chapter there is a list of sub-strands that will be covered. Where a chapter covers two or more sub-strands you should make sure that you cover the outcomes for each sub-strand.

The order of lessons does not always follow the order of the outcomes in the syllabus. You should follow the Learner's Book rather than the syllabus and use the syllabus as a guide to what the learners' should finally achieve.

Yearly program planner

This section shows the entire learning program for the Year 7 Secondary Agriculture course and the suggested teaching times based on 17 teaching weeks per semester and 34 teaching weeks per year in Year 7.

Semester One

Year 7																				
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Y E A R 7	Integrated agriculture							Garden crops												Revision and Exams
	13 periods				12 periods			24 periods						23 periods						
	Chapter 1: Introduction to agriculture				Chapter 2: Introduction to soil			Chapter 3: Introduction to food crops						Chapter 4: Growing vegetable crops						

Semester Two

Year 7																				
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Y E A R 7	Plantation crops												Farm animals						Revision and Exams	
	24 periods						25 periods						18 periods							
	Chapter 5: Introduction to plantation crops						Chapter 6: Growing fruit and nut crops						Chapter 7: Introduction to farm animals							

Teaching methods

It is important to plan and prepare before classes. The following are some teaching methods or approaches you can use to facilitate effective learning in your classroom. All of these are included as activities in the Learner's Book. If possible use extra activities, especially fieldwork, if it is possible in your school.

Fieldwork and excursions

Fieldwork means any work outside the classroom. This helps learners to link classroom learning to real-world experience outside the classroom. Here learners learn to apply the skills of observation, investigation and interviewing as a means of collecting information about a topic for themselves. This is very important in Agriculture, which teaches learners about the real world around them.

Field work is particularly important in the outcomes approach, which aims to link the learning to the real needs of the learners. It is an essential part of teaching, not an 'optional extra'.

To ensure an effective and successful outcome, you must consider important aspects of fieldwork such as good classroom preparation and planning, the best way to carry out actual work in the field, and follow-up work in the classroom.

This means you must go and look at the area you plan to do fieldwork in before you do it, and decide exactly what you want learners to observe and do when they go there.

The best way is often to provide a questionnaire for learners before they go. A lot of the work can then be done by learners working in groups to answer the questions, without too much help from you. The activities in the Learner's Book will often give the basis for a questionnaire.

Fieldwork takes time and may have to be fitted in after the normal teaching time—in an afternoon or even on a weekend. Some fieldwork can be done by giving questionnaires for learners to fill in during their own time in their own area—either after school or, if in boarding schools, during the holidays.

Fieldwork is difficult in town schools but should not be ignored by those schools. You may have to rely on questionnaires to help learners to do the fieldwork in their own time, as described above. For instance, learners can be encouraged to go out and look at a river or stream, the sea and coastline or a farming area, at weekends. Assignments can also be given for learners to do in their home areas during holidays, and this helps them to realize that what they are learning applies to their home area.

Report writing

The report-writing process involves: researching an issue thoroughly, often through fieldwork; collecting the information through one or more of the techniques explained in this section; and organizing the information in a logical and clear manner. In Year 7 you should not place too much emphasis on the formal writing of reports. It is usually enough for learners to answer a series of questions in a questionnaire. But some of the sub-strands in the Year 7 Agriculture course do teach learners about research and report writing.

Group work

Learners take a more active role and talk naturally when they are allowed to work in small groups. In this way they can express their ideas rather than listening passively to the teacher, as is often the case in whole-classroom teaching. Group work encourages learners to talk or do things for themselves, as part of the learning process. Learners discuss, share views and interact in small groups and present their collective work to the class. To ensure that group work leads to effective learning, preparation and class management are important for teachers.

Group work must be properly organized and supervised. You must not use it as an excuse to sit back and leave learners to it. However, learners will often not talk freely if they know the teacher is listening, so you must leave groups to talk on their own. Sometimes it is even effective to walk out of the classroom for a while to give groups a chance to get going without you listening.

The role of the teacher in group work should include the following.

- **Choose the topic:** Groups can only discuss topics that they know something about and for which it is possible to have different points of view or opinions. You cannot discuss a topic such as “What are fruits and nuts?” because there is only one answer to the question and answers are right or wrong. You can discuss “How do people get food when they know that their food supply is running low?”. There are many different answers and each learner can suggest different ideas.
- **Set the objective:** Make sure each group knows exactly what to discuss and has a set of clear questions to answer. It is not enough just to say “discuss this topic”.
- **Organize the groups:** Groups should be small enough for everyone to be able to talk. They should usually be mixed—different island groups, not all *wantoks*. It is good to mix girls and boys but do not do this if it leads to learners being too shy to talk.
- **Organize the seating:** Good discussions will take place if learners face each other in a circle. You cannot talk to someone else's back! If possible, classrooms may be arranged by grouping desks in circles facing each other, so group work is easy and no movement is necessary. In crowded classrooms you may allow some groups to go and discuss outside.
- **Circulate and listen to progress:** It is best to do this only after giving time for discussion to start. Try to make sure all learners are being given a chance to speak. If you see certain people dominating groups, intervene and ask others their ideas. If groups are having difficulty, give guidance by explaining the topic, provide some extra questions or ask individuals their ideas. If groups are doing well on their own, do not interfere.

- **Decide on the language to be used:** In Year 7 most learners will want to use Pijin. It is best to let them do so or they may say nothing. There is nothing wrong with a local language if all in the group speak it. But try to get each group to report back their ideas at the end in English, either verbally or in writing.
- **Reporting back:** It is often a good idea to appoint a chairperson who will report back to the whole class at the end, but this is not always necessary. Each member may write their own ideas, or groups may just learn from the process of discussion.

Debate and discussions

Group work involves learners in debates and discussions, and these are active ways of engaging learners in the learning. Learners are able to manage and collect information through research, to use in debates about a particular topic or share ideas with others in the classroom. They will learn a lot in this process.

Debates are good to encourage learners to form their own opinions about a topic. Even in Year 7 we should encourage this, using appropriate topics, such as the topic in Chapter 1 about the role the government should play in agricultural production. At this level, debates should be informal, without trying to follow the strict parliamentary rules of debating.

Role-play and simulation

Role-play is a kind of group work in which learners are given a part to play, either in a discussion or a story. Acting out a role-play encourages learners to participate, interact and learn through talking. Learners act as someone else. It allows learners to imagine themselves in the place of other people and to try to think, act and talk as they would. Role-play is often best used at the end of a teaching topic, when learners have learnt quite a lot about a topic or about people in a different area. This helps them to think about the ideas, emotions and feelings of those people.

Simulation is similar to role-play, but the emphasis is on a situation rather than the people. A situation is made up similar to a real-life situation and learners can either be themselves acting in that situation or can act a role-play. This helps them to understand other people and how they feel and also to think about what they themselves would do in a certain situation.

In order for a role-play or simulation to be successful, enough time and guidance should be given to learners to obtain enough information about the person and the situation to enable them to act and talk realistically when acting out the role-play.

The outcomes-based approach is meant to teach attitudes and values as well as knowledge, understanding and skills. Role-play and simulation are particularly important in teaching attitudes and values.

Photograph interpretation

Looking at photographs in the classroom helps learners to understand and remember the words they hear by seeing the real thing on photographs, and gives them the mental pictures to enable them to think about such things later. Learners need to interpret them by: recognizing what photographs show, seeing relationships within photographs and explaining certain features in them. You can develop these skills in learners by encouraging them to look at all the photographs in the book and asking questions about what they show. Learners should analyse and interpret photographs of the topic they are learning about. Photographs are a valuable part of your teaching, they are not just there for decoration.

Many learners may not be used to looking at photographs, so things on the photographs which are obvious to you may puzzle some learners. Remember that photographs are just colours and lines on paper and we have to use these to decide what the photograph shows. If you are not used to doing this, it may not be easy. There may be some small “boxes” in one part of a photograph and you may know that these are houses, but some learners may not recognize these as houses unless you point it out to them.

Be particularly careful of photographs of things some learners may have never seen. Even simple things such as types of vehicles may be unfamiliar to people in some rural areas. It is unlikely learners will have ever seen a train or a buffalo or snow, so you must point out what the photo shows, not just presume that learners see what you see.

Reality has three dimensions, while photographs have only two dimensions. Learners must get used to using perspective on photographs; that is, recognizing that things which are close are large and things farther away are smaller. This can sometimes cause confusion. Remember also that one of the differences between a photograph and a map is that photographs show things from the side and show perspective as we normally see them. Maps show things looking directly down from above and so do not have perspective.

Research interviews and questions

There are different ways of using research interviews with people to collect information about a topic, such as: conducting informal chats; preparing questions to ask particular people; or using standardised questionnaires in small groups, asking the same questions to a large number of people and later converting the answers into statistical form. There is an example of this in Chapter 2, when learners are asked to find out why people value soil as an important resource.

Prepared questions are also useful for fieldwork and they can be used alone or with any of the above techniques for collecting information.

Guest speakers

Asking people from outside the school with specialized knowledge and skills on a particular topic to speak to the learners is one way of altering the normal classroom teaching and learning. Through this process, learners will appreciate the importance of the specialized knowledge that people in the community have.

The people don't need to be experts. For instance, in Chapter 1 you might invite someone to tell the class about the importance of agriculture in the area. In Chapter 3, a guest speaker might come and describe how to prepare and plan for growing food crops in the local area and in Chapter 7, you might ask people to talk about the benefits of raising farm animals.

Visits

This links with fieldwork. If possible, try to visit an area like the one you are talking about in the Learner's Book. This might include a plantation, a logging area, a small-scale farm using shifting cultivation, or a buying point for copra. If you visit, make sure learners go with a questionnaire similar to that for fieldwork, so they know what to look for and what to find out.

Case studies

A case study is a detailed study of a particular area or topic. Presenting a case study helps learners to understand the reality of a particular topic. In Chapter 4 a case study examines a vegetable farmer selling his crops in the Guadalcanal Plains to illustrate the correct ways of preparing and selling vegetable crops.

Glossary

On page 108 there is a glossary, or list of words and concepts likely to be new to some learners. Each important word likely to be new is printed in bold in the Learner's Book. This includes only words that are important in Agriculture. Other "difficult" words should be looked up in the dictionary or explained by you.

Learners should be encouraged to use the glossary whenever they come across a word in bold, which they do not know or understand clearly. They do not need to learn these definitions. They should use the definition to make sure they understand the word and then practise using it for themselves. The real test is being able to use the word correctly in a sentence without repeating the definition.

Assessment

Assessment is a process in which teachers gather, analyse and interpret assessment information and data. You should use such information and data to develop and implement enrichment support and intervention strategies to improve the teaching and learning processes in the classroom. It is important to assess the learners to know what stage they are at and the progress they make in the classroom. Assessment is an important ongoing process in teaching and learning and it should be used continuously, not only at the end of a topic.

Assessment should include *formative assessment*, which takes place throughout every teaching topic and every unit of the Learner's Book. Formative assessment emphasizes continuous assessment as part of the teaching and learning process. "Assessment for learning" focuses on using assessment information to improve teaching and learning as an ongoing process. This helps you to monitor learners' progress on a continuous basis. The teacher should constantly observe and evaluate learners' achievement, collecting data on areas of improvement and new skills that they acquire. In doing this, teachers should focus on the general and specific learning outcomes stated in the syllabus. Learners should also be aware of what is being assessed, the assessment techniques being used, and the criteria used. Learners can then judge for themselves whether they are achieving the general and specific learning outcomes.

Summative assessment, for example a unit or chapter test, tells you what learners have learned or can do after a whole section of teaching. This type of assessment focuses on "assessment of learning" and is directed at ranking learners from their performance on the learning outcomes. This will also help teachers to devise ways of improving the learners' performance in the classroom. These tests are important but assessment should not be done only by test. Assessment must cover skills as well as knowledge. You should test whether learners can read a map or interpret a photograph as well as test the factual knowledge they have learned.

Diagnostic assessment is the type of assessment that teachers are encouraged to do in order to identify the learner's ability or achievement level of a specific learning outcome. This helps you to identify the learner's ability and devise remedial tasks as an intervention strategy. Learners who have achieved the specific learning outcomes should be given enrichment support to encourage them to maintain their achievement level.

Assessment techniques

Some of the assessment techniques that can be used include the following.

Verbal assessment

- Answering questions
- Making a verbal report
- Interviewing

Written assessment

- Doing an activity (from text books or self-prepared)
- Doing an assignment
- Writing a report
- Sitting for a test or an examination

Practical assessment

- Participating in a field trip/excursion and collecting information
- Demonstrating a particular task
- Drawing, interpreting and using a map
- Analysing a photograph
- Basic library research and collecting information

Group-work assessment

- Participating in a group task and discussion
- Participating in a role-play and drama.

Other

Other assessment techniques include:

- observation of what individual learners do
- consultation with individual learners by asking them questions
- focused analyses of learners' work such as portfolios, or a collection of work they have done, to determine how each individual learner is performing in their learning process.

Assessment of specific learning outcomes using achievement levels

Learners' achievements in Agriculture will be reported in levels instead of marks. These levels of achievement are derived from the curriculum outcomes of Year 7 Agriculture in the Solomon Islands. Six levels are used to describe learners' achievement of the learning outcomes, ranging from L5, the highest, through L4, L3, L2 and L1 to L0, the lowest. These levels will be used for assessment of individual learning outcomes

Learners achieving at L0, L1 and L2 are considered to be at a critical level (Lc) and need urgent assistance. Learners in this category must be given remedial work in order to reach the curriculum benchmark. Learners achieving at L3+, which is a combination of L3 and L4, require assistance and must be given remedial work in order to reach the curriculum benchmark. Learners achieving at L5 are considered to have reached the curriculum benchmark and should be given enrichment support in order to maintain their high standard.

Level	Assessment criterion	Judgement criteria	Achievement award
L5	Statement to identify the fifth and highest level of achievement	Criteria for judging learner's achievement	Achieved (A) Full mastery of learning outcome
L4	Statement to identify the fourth level of achievement	Criteria for judging learner's achievement	Partially Achieved (PA4) Substantial mastery of learning outcome
L3	Statement to identify the third level of achievement	Criteria for judging learner's achievement	Partially Achieved (PA3) Moderate mastery of learning outcome
L2	Statement to identify the second level of achievement	Criteria for judging learner's achievement	Partially Achieved (PA2) Minor mastery of learning outcome
L1	Statement to identify the first level of achievement	Criteria for judging learner's achievement	Partially Achieved (PA1) Minimal mastery of learning outcome
L0	Statement to identify the lowest and last level of achievement	Criteria for judging learner's achievement	Not Achieved (NA) No mastery of learning outcome

Assessment criteria as achievement levels

Following is an example of an assessment-criteria framework for a specific learning outcome in Year 7 Agriculture. The statements in the table are assessment criteria for specific learning outcome 7.1.1.1: Describe ways in which people get food. Each of the six levels describes the achievement of the learner.

Level	Assessment criterion	Judgement criterion	Achievement award
L5	Five or more ways to get food described correctly	Able to correctly describe five or more ways to get food	Achieved (A) Full mastery of learning outcome
L4	Four ways to get food described correctly	Able to correctly describe four ways to get food	Partially Achieved (PA4) Substantial mastery of learning outcome
L3	Three ways to get food described correctly	Able to correctly describe three ways to get food	Partially Achieved (PA3) Moderate mastery of learning outcome
L2	Two ways to get food described correctly	Able to correctly describe two ways to get food.	Partially Achieved (PA2) Minor mastery of learning outcome
L1	One way to get food described correctly	Able to correctly describe one way to get food	Partially Achieved (PA1) Minimal mastery of learning outcome
L0	Unable to describe ways to get food	Not able to describe any ways of getting food	Not Achieved (NA) No mastery of learning outcome

Recording learners' achievements

Teachers are encouraged to keep accurate records of both individual learners and the whole class. At the end of each assessment event, individual records of achievements must be recorded using the approved recording template. The recommended recording template is shown in Appendix 3. Keeping up-to-date and accurate records is very important for monitoring and reporting learners' performance, progress and achievements. It is also useful for teachers to use and show the records during meetings with parents, the learner and other key stakeholders.

Monitoring individual learner and class achievements

With accurate records, teachers are able to monitor the learning performance, progress and achievement of individual learners and the whole class. You should monitor individual learners' performance, progress and achievements at the end of each assessment event. As you continue to assess more outcomes, the learning pathway of each learner can be mapped and tracked during a term or semester in any one year. This information is useful for providing advice to parents, the learner and other key stakeholders.

In order to identify strengths and weaknesses of individual learners in the classrooms, you need to keep accurate records of the performance of all learners in the class against the performance of an assessed outcome at the end of an assessment event. In this way you can identify whether individual learners have achieved, partially achieved or not achieved the outcome for a particular assessment event. Using this simple monitoring technique, you can identify learners who need enrichment support and those who need remedial work to help them achieve the standards required by the national curriculum. The recommended monitoring template is shown in Appendix 4.

Reporting individual learners' achievement

With accurate records and effective monitoring systems, teachers are able to compile and make a balanced, accurate and fair report on the learners' performance, progress and achievements in a given assessment period. The type of reporting system recommended by the Ministry of Education requires more description of the learners' performance. This means that the report must also provide a descriptive account of the learners' achievement.

The reporting system no longer uses marks or grades; instead, you need to specify whether a learner has achieved, partially achieved or not achieved the assessed outcome. You should indicate this with an A, a PA (1–4) or an NA on the approved reporting form. At the end of each assessment period, you need to give an overall achievement level for the learner. This is essential for the calculation of the overall award. The overall achievement level is calculated as a gross point average, whereby the values of the outcomes assessed are added and divided by the number of outcomes assessed. The value of each overall achievement level is equivalent to an award of attainment for the learner. The recommended reporting template is shown in Appendix 7.

Calculating progressive achievement levels for formative and summative assessment

To calculate the progressive achievement level for formative assessment, add the values of achievement levels for all outcomes assessed during the formative component of the assessment and divide by the number of outcomes assessed. The number you get is the progressive achievement level for the learner for formative assessment. Similarly, to calculate the progressive level for summative assessment, add the value of achievement level for all outcomes assessed in the summative component of the assessment and divide by the number of outcomes assessed. The number you get is the progressive achievement level for the learner for summative assessment.

Calculation of overall achievement levels using formative and summative assessments

To calculate the overall achievement for each individual learner, add progressive achievement levels for formative and summative assessment and divide by 2. The number you get is the overall achievement level for the learner for that specific assessment period. The overall achievement level attained corresponds to an overall award for the learner (you should round off the calculated values to the nearest whole number). The award will be issued to the learner in the form of a coloured certification in recognition of the learner's achievement.

The table opposite shows achievement levels, awards and certifications.

Overall achievement level	Performance descriptor	Achievement awards	Certificate position	Colour Code	Objective grading system
Level 5	Learner is competent with 95–100% of the outcomes	Achieved with excellence	Gold	Yellow	A
Level 4	Learner is competent with 80–94% of the outcomes	Achieved with merit	Silver	Green	B
Level 3	Learner is competent with 50–79% of the outcomes	Achieved with minimum standards	Bronze	Blue	C
Level 2	Learner is competent with 20–49% of the outcomes	Achieved below minimum standards	Critical level	No award	D
Level 1	Learner is competent with less than 20% of the outcomes	Achieved far-below minimum standards	Critical level	No award	E
Level 0	Learner is not competent. Did not achieve outcomes	Not achieved	Critical level	No award	F

Meetings with parents, learners and other stakeholders

Teachers and the school administration are encouraged to consult parents, learners and other stakeholders to discuss the performance, progress and achievements of learners and suggest ways that learners can improve. This is a very important process because it involves giving proper feedback to both the learner and the teacher. The school administration can organize consultative meetings between teacher and parent, as well as teacher, parent and learner. If you have kept accurate records of the learner's performance, progress and achievements you will be able to identify the learning progress and pathway of the learner, and therefore determine appropriate remedial work for each learner. You will also then need to provide results after each remedial work has been carried out with the learner. Conducting such very important meetings will give parents and key stakeholders confidence in children's education in our schools. These meetings are important links with parents and other key stakeholders.

Links between Agriculture and other subjects

Many other subjects teach topics or skills which are similar to or related to the topics and skills we teach in Agriculture. It is important that you are aware of these and, when you teach a topic or use a skill, you refer learners to the fact that they have also learnt about this or will learn about this in another subject. Below is a description of linkage of Agriculture with the other subjects.

Subject	Link description
Arts and culture	The promotion and use of traditional farming methods and how different cultures and groups cultivate crops and raise farm animals
Business studies	Basic profit and expenditure calculation, planning, resources and production
Christian education	Appreciation of creation and the notion that "man is a steward (takes good care of resources) and will need to sweat (cultivate) before he can eat."
English	The usage of English as a medium of communication is fundamental in the learning of Agriculture concepts, practices and skills
Health education	The promotion of healthy living through the consumption of a diet based on locally available food produced in the farm or garden
Home economics	The production of food, its availability for household use, and its use in relation to nutrients for the normal functioning of the body
Mathematics	The use of mathematical skills, concepts and their application; ratio and proportion, money, percentage, angles and measurement are all important in the understanding and application of some Agriculture concepts
Physical education	The promotion of physical involvement in farming activities as a measure that would enhance physical fitness and endurance
Science	The study of living and non-living things (plant systems, animal systems, the physical world, chemical reactions) and their interaction with their natural environment
Social studies	The study of farming systems (small and large scale) and their integration with the physical environment
Technology	The use of technology in terms of traditional and improvised tools and equipment in farming

Chapter 1

Introduction to agriculture

13 periods

Unit 1

7.1 What is agriculture?

3 periods

This sub-strand should enable learners to acquire relevant knowledge and understanding of how people get food from the land, the meaning and importance of agriculture and agriculture as a primary industry.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.1.1** Know how people get food (k)
- 7.1.2** Understand the importance of agriculture (u)
- 7.1.3** Understand agriculture as a primary industry (u)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.1.1.1** Describe ways in which people get food
- 7.1.1.2** Define the term “agriculture”
- 7.1.2.1** Explain the importance of agriculture
- 7.1.3.1** Explain agriculture as a primary industry

Lesson 1: How do people get food?

Number of periods: 1

Learner’s Book pages 1–3

My goals

By the end of this lesson learners should be able to:

- 7.1.1.1** Describe ways in which people get food
- 7.1.1.2** Define the term “agriculture”

Lesson summary

This lesson explains the history of agriculture in relation to mankind’s search for food. It discusses how we moved away from being hunters and gatherers to become farmers. There are two main ways in which people get their food. One is by hunting (fishing) and gathering and the other is by cultivating the land or practicing agriculture. The session will describe the terms “agriculture”, “farm” and “farmers”.

Explain what led our ancestors to become food hunters and gatherers and how the life of hunters and gatherers depends on continuous availability of food supplies. Explain the process of living in a community and getting involved in agricultural activities. Stress the importance of food security and food availability as a result of getting involved in agricultural production activities.

Suggested teaching method

Step 1 Introduce and preview lesson.

Step 2 Instruct learners to read through “How do people get food?” on pages 1 and 2. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 3 Divide the learners into pairs or small groups to do Activities 1.01 and 1.02 on page 3. While the learners are doing the activities, walk around to assist learners having difficulties. Go through the activities with the learners and ensure that they have correctly answered the questions.

Step 4 Summarize the lesson and activities with an emphasis on “How do people get food?”

Step 5 Instruct learners to read “The importance of agriculture” on page 3 to prepare for Lesson 2.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.01

- 1
 - a Digging for tubers or roots, harvesting fruits and returning from fishing or hunting
 - b A digging stick and a spear
 - c Answers will vary. Sample answer: there seems to be no farm or garden to indicate they grow crops or raise animals. It seems that they are searching for food.
 - d Answers will vary. Sample answers: having access to a variety of food crops and animals, and no effort or time used to grow crops or raise animals.
 - e Answers will vary. Sample answers: having to search a large area to find food, it may be hard to find food, competition for limited resources (food) and hunting grounds, and in the long-term it may not sustain an increasing population.
 - f Answers will vary. Sample answer: yes, some forms of hunting and gathering practices are still used as a method of getting food.
- 2 Examples of hunting and gathering practices may include: hunting for wild pigs or birds, collecting eggs, gathering shells, picking nuts in the forest, fishing or trapping mud crabs.
- 3 Another way of getting food from the land is through agriculture. This involves the growing of crops and raising of animals.

Activity 1.02

- 1 The word **agriculture** comes from two Latin words: **ager** and **cultura**. Agriculture therefore means **field cultivation**.
- 2 The following words should be matched:
farm or garden → place or area where agriculture takes place
farmer → person who does agriculture
ager → field
cultura → cultivation
- 3 Give an example of an agricultural activity to the learners first, e.g. clearing an area to grow sweet potatoes. Sample answers: clearing a bush or forest for farming, brushing a plantation, planting, weeding, raising farm animals, building a fence, harvesting coconuts, selling agricultural products or cocoa, processing a crop.

Suggested assessment

Identify other ways in which people get food.

Answers will vary. Sample answers: barter system or exchange of goods; buying from shops, markets or farms; through aid (after a natural disaster), stealing from others.

Lesson 2: The importance of agriculture

Number of periods: 1

Learner's Book pages 3–4

My goals

By the end of the lesson, learners should:

7.1.2.1 Explain the importance of agriculture

Lesson summary

This lesson explains that in the Solomon Islands, agriculture is a vital part of the local culture.

Agriculture provides many things that people depend on for their livelihood.

Discuss the things that make agriculture important to the people of the Solomon Islands. Ask the learners if they can think of other reasons why agriculture is important in the Solomon Islands. Enable learners to look closely at the relationship between agriculture and their cultures.

Suggested teaching method

Step 1 Review Lesson 1.

Step 2 Introduce and preview lesson.

Step 3 Brainstorm with learners. Ask why they think agriculture is important without looking at the Learner's Book. Record the answers on the board.

Step 4 Instruct learners to read through "The importance of agriculture" on page 3. While the learners are reading, walk around to observe and see if any learners are having difficulty understanding the text. Briefly explain the text as required.

Step 5 Instruct learners to do Activity 1.03 on page 4. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 6 Summarize the lesson and activity with an emphasis on "The importance of agriculture".

Step 7 Instruct learners to read "Agriculture as a primary industry" on page 4 to prepare for Lesson 3.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.03

- 1** Agriculture is a way of life for the people of the Solomon Islands because they depend on it for most of their needs.
- 2** Answers will vary. Sample answer: agriculture is a source of food, fiber, income, employment, medicine and cultural importance.
- 3** Answers will vary. Sample answer: other things you use from agriculture are building materials, medicine, tools and decorations.

Suggested assessment

Interview at least three people to find out how they regard agriculture.

Answers will vary. Sample answers: agriculture is important because it helps to provide food, it's a source of income for the farmer and the country, it's a source of materials, it's a source of nutrition, it's a source of employment.

Lesson 3: Agriculture as a primary industry

Number of periods: 1

Learner's Book page 4

My goals

By the end of this lesson, learners should be able to:

7.1.3.1 Explain agriculture as a primary industry

Lesson summary

This lesson introduces and defines the terms “primary industry” and “secondary industry”. It emphasizes that agriculture in the Solomon Islands is regarded as a primary industry. Explain that some primary industries are also involved in secondary industries.

Suggested teaching method

Step 1 Review Lesson 2.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read through “Agriculture as a primary industry” on page 4. While they read, walk around to see if any learners are having difficulty understanding the text.

Step 4 Explain and clarify the text and the terms “primary industry”, “secondary industry” and “resources”.

Step 5 Organize learners in pairs or small groups and instruct them to do Activity 1.04 on page 4. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 6 Summarize the lesson and activity with an emphasis on “Agriculture as a primary industry”.

Step 7 Instruct learners to read “Types of agriculture” on page 5 and do Activity 1.05 questions 1–3 to prepare for Lesson 4.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.04

- 1** Agriculture is a primary industry because it directly involves the use of natural resources such as soil, water, plants and animals.
- 2**
 - a** You can tell because of the coconut trees.
 - b** It is different because only one crop covers the whole area.
 - c** You would expect to find jobs like collecting nuts, fertilizer application, brushing and cleaning the plantation, and copra cutting.
 - d** A coconut crop is being grown.
 - e** Products gained from this crop are copra, coconut milk, oil, baskets and timber. Take note of other answers from the learners.

Suggested assessment

Name examples of primary industry that are also involved in secondary industry.

Examples include: Guadalcanal Plains Palm Oil Limited (GPPOL), which involves growing palm oil and processing it into oil, and Soltai Fishing Limited, which is involved in the fishing and processing of fish.

Unit 2

7.2 Types of agriculture

4 periods

This sub-strand should enable learners to acquire relevant knowledge and understanding of the development and types of agriculture in Solomon Islands society including subsistence, semi-subsistence and commercial agriculture.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.2.1 Know how agriculture is developed (k)
- 7.2.2 Understand subsistence agriculture (u)
- 7.2.3 Understand semi-subsistence agriculture (u)
- 7.2.4 Understand commercial agriculture (u)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.2.1.1 Describe the development of agriculture
- 7.2.2.1 Explain subsistence agriculture
- 7.2.3.1 Explain semi-subsistence agriculture
- 7.2.4.1 Explain commercial agriculture

Lesson 4: Development of agriculture

Number of periods: 1

Learner's Book page 5

My goals

By the end of this lesson, learners should be able to:

- 7.2.1.1 Describe the development of agriculture

Lesson summary

This lesson describes how agriculture began in the Solomon Islands and how it developed into the three main types: subsistence, semi-subsistence and commercial agriculture.

Emphasize the link between traditional and modern agriculture and how the different types of agriculture can be combined to enhance production.

Suggested teaching method

- Step 1** Review Lesson 3.
- Step 2** Introduce and preview lesson.
- Step 3** Instruct learners to read through "Development of agriculture" on page 5. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.
- Step 4** Explain the concept of agriculture development in the Solomon Islands. Clarify some of the terms used in the text.
- Step 5** Instruct learners to do Activity 1.05 question 4 on page 5. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.
- Step 6** Summarize the lesson and activity with an emphasis on "Development of agriculture".
- Step 7** Instruct learners to read "Subsistence agriculture" on pages 5–6 to prepare for Lesson 5.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.05

- 1 A long time ago our **ancestors** began to **settle** in villages. They discovered that they were able to **grow** crops and **raise** animals.
- 2 They had to grow crops or raise animals to provide food to sustain their livelihood.
- 3 The three types of agriculture are subsistence agriculture, semi-subsistence agriculture and commercial agriculture.
- 4 Answers will vary. Sample answer:

Description of traditional farming method	Crops or animals it is used for
Scattering seeds in swampy areas in forests	To plant sago palm trees
Staking or providing support	Yams/pana
Tethering	To raise pigs
Use of digging stick	To dig holes or harvest food crops

Suggested assessment

Find out how three farmers around your home or school area practice agriculture.

Answers will vary. Sample answers: grow root crops for family consumption, grow crops for home consumption, raise animals for sale, grow cash crops for sale.

Lesson 5: Subsistence agriculture

Number of periods: 1

Learner's Book pages 5–6

My goals

By the end of this lesson, learners should:

- 7.2.2.1 Explain subsistence agriculture

Lesson summary

Explain that agriculture where you produce just enough for yourself and your family is called “subsistence agriculture”. Emphasize that people produce for themselves by practicing shifting cultivation or permanent cultivation. Point out the difference between shifting cultivation and permanent cultivation. Discuss the importance of subsistence agriculture to the people of the Solomon Islands and why it is different from the other types of agriculture. Also discuss the different types of subsistence agriculture.

Suggested teaching method

Step 1 Review Lesson 4.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read “Subsistence agriculture” on pages 5 and 6. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text. Refer to the glossary on page 17 of the Learner's Book.

Step 4 Instruct the learners to work in pairs or small groups to do Activity 1.06 on page 6.

While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Subsistence agriculture”.

Step 6 Instruct learners to read “Semi-subsistence agriculture” on pages 6 and 7 to prepare for Lesson 6.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.06

- 1 Subsistence agriculture is producing just enough food for yourself and your family.
- 2 Learners should include four of the following: it is part of the traditional way of life, it helps people to meet their food needs, it helps to maintain food security, it can be carried out without spending money, it is not very hard to learn how to carry out subsistence agriculture, and it enables people to learn traditional knowledge and skills in farming.
- 3 Taro and slippery cabbage
- 4 Answers will vary. Sample answers: to keep the soil fertile, to preserve moisture, to keep the soil cool, to prevent weeds growing, to reduce erosion.

Suggested assessment

Investigate how a farmer around your home or school area practices subsistence agriculture.

Answers will vary depending on learners’ observations/experience.

Lesson 6: Semi-subsistence agriculture

Number of periods: 1

Learner’s Book pages 6–8

My goals

By the end of this lesson, learners should be able to:

- 7.2.3.1** Explain semi-subsistence agriculture

Lesson summary

This lesson explains semi-subsistence agriculture using a case study. A semi-subsistence farmer grows extra crops or raises extra animals for income, with which he can buy things.

Explain that the main feature of semi-subsistence agriculture is growing and raising extra crops or animals, which are sold for cash.

Suggested teaching method

Step 1 Review Lesson 5.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Semi-subsistence agriculture” on page 6 and the case study on page 7. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text and clarify some of the terms used.

Step 4 Instruct learners to work in pairs or small groups to do Activity 1.07 on page 8. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Semi-subsistence agriculture”.

Step 6 Instruct learners to read “Commercial agriculture” on page 8 to prepare for Lesson 7.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.07

- 1 They were not used to producing extra crops for the market, because they had no access to roads where trucks could pick up the produce.

- 2 Semi-subsistence agriculture
- 3 They were able to meet some of their needs and wants by selling produce to the people on the coast, who would sell the crops at the markets.
- 4 That you should not just stop when difficulties arise and you should try to think of new ways to do things

Features of semi-subsistence agriculture	Sentences from the case study
Producing extra crops	Despite the problems of transportation and access to markets, I decided to grow more subsistence crops, like taro and yams to sell in the market.
Growing crops to sell	Other people in my area saw what I was doing and began to produce extra food crops.
Transporting crops	To solve the problem of transporting my produce, I had to build a bamboo raft. I used the raft to carry my produce for the day-and-a-half journey along the Moga river and down to the coastal village of Ghombua.
Identifying markets for crops	I made arrangements with someone living at the coast to buy my produce at a reasonable price.

Suggested assessment

Investigate how a farmer around your home or school area practices semi-subsistence agriculture. Answers will vary depending on learners' observations/experience.

Lesson 7: Commercial agriculture

Number of periods: 1

Learner's Book pages 8–9

My goals

By the end of this lesson, learners should be able to:

- 7.2.4.1 Explain commercial agriculture

Lesson summary

This lesson explains why commercial agriculture is different from other types of agriculture. It explains that farmers involved in commercial agriculture are called commercial farmers. The term "cash crop" is introduced and examples of common cash crops in the Solomon Islands are given.

Explain that the main feature of commercial agriculture is that crops or animals are raised solely for sale. Ask the learners to give other examples of commercial agriculture that is practiced in their area. Point out that some commercial farmers may grow only one type of cash crop while others may grow more than one type of cash crop.

Suggested teaching method

Step 1 Review Lesson 6.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read "Commercial agriculture" on page 8. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text and clarify the terms.

Step 4 Instruct the learners to do Activity 1.08 on page 9. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on "Commercial agriculture".

Step 6 Instruct learners to read “What is a school farm?” on page 10 and do Activity 1.09 questions 1 and 2 to prepare for Lesson 8.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.08

- 1** Commercial agriculture is different from subsistence and semi-subsistence agriculture because all production is for sale and there is no home consumption.
- 2**
 - a** Answers will vary. Sample answers: animals are raised only for production, two cash crops grown together, cash crops are grown in a large area or scale.
 - b** Pigs
 - c** Coconuts and cocoa
 - d** Answers will vary. Sample answers: more than two products can be obtained and sold, easy to manage crops, reduce expenses, saves the farmer time and effort.
- 3** Answers will vary. Sample answers: planting cash crops, raising animals for production, selling cash crops, clearing a large area of land to grow cash crops.
- 4** Answers will vary. Learners will have to identify the status of the area and come up with appropriate suggestions.
- 5** Answers will vary. Learners will have to identify the status of the area and come up with appropriate suggestions.
- 6** Answers will vary. Make sure you discuss: land problems, cash problems, market problems and transportation problems.

Suggested assessment

Investigate how farmers around your home or school area practice commercial agriculture.

Answers will vary depending on learners’ observations/experience.

Unit 3

7.3 School farms

2 periods

This sub-strand should enable learners to acquire relevant knowledge and understanding of the school farm and the farming problems affecting schools in effectively carrying out agricultural production activities at the school level.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.3.1** Know the school farm (k)
- 7.3.2** Understand problems affecting school farms (u)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.3.1.1** Describe the term “school farm”
- 7.3.1.2** State the benefits of a farm to a school
- 7.3.2.1** Explain problems affecting school farms
- 7.3.2.2** Suggest solutions to farming problems schools face

Lesson 8: What is a school farm?

Number of periods: 1

Learner's Book page 10

My goals

By the end of this lesson, learners should:

- 7.3.1.1 Describe the term "school farm"
- 7.3.1.2 State the benefits of a farm to a school

Lesson summary

This lesson introduces and explains the term "school farm". It discusses the benefits of schools having a school farm or garden. The lesson also gives learners the opportunity to observe and identify different school areas that can be used for agricultural production.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 7.

Step 3 Introduce and preview lesson.

Step 4 Accompany the learners on a guided tour around the school to complete Activity 1.09 question 3 on page 10. Make sure that learners correctly draw and label school buildings, other school infrastructures, existing farm areas and suitable areas for farming.

Step 5 Summarize the lesson and activity with an emphasis on "What is a school farm?".

Step 6 Instruct learners to read "Problems affecting school farms" on page 11 and do Activity 1.10 questions 1 and 2 to prepare for Lesson 9.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.09

- 1 Answers will vary. Benefits listed may include: venue for learners to acquire skills and carry out practical activities, source of food for the school kitchen, source of income for the school, source of employment.
- 2 Answers will vary depending on learners' observations/experience. If the school does not have a farm, assist learners to assess the school area and suggest what potential crops and farm animals can be raised.
- 3 Answers will vary depending on learners' observations/experience.

Suggested assessment

Outline some disadvantages of not having a school farm.

Answers will vary. Sample answers: it would be difficult to learn agricultural production activities, there would be no fresh farm food for the school kitchen, more money may be spent on buying food, the school would lack income that comes in from farm products.

Lesson 9: Problems affecting school farms

Number of periods: 1

Learner's Book page 11

My goals

By the end of this lesson, learners should:

- 7.3.2.1 Explain problems affecting school farms
- 7.3.2.2 Suggest solutions to farming problems schools face

Lesson summary

This lesson explains that not all schools are located on sites where they can have school farms. It suggests that schools in this situation can still grow crops and raise farm animals using other methods.

Suggested teaching method

Step 1 Review Lesson 8.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Problems affecting school farms” on page 11. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Organize learners into pairs or small groups and instruct them to complete Activity 1.10 question 3 on page 11. Go through the activity with the learners and ensure that they have answered the questions correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Problems affecting school farms”.

Step 6 Instruct learners to read “Ways agriculture is improved” on page 12 to prepare for Lesson 10.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.10

- 1 Not all **schools** in the Solomon Islands are located in places that are **suitable** for farming. Some schools don't have enough **space** or land for a school farm. Others may have space for a farm but **unsuitable** soil that is too **rocky, sandy** or **swampy**.
- 2 Answers will vary. Sample answers: practice urban agriculture techniques like growing crops in boxes, containers or raised beds; if the area is swampy, dig drainage to remove excess water; if the area is rocky or sandy, select crops that can grow well in such conditions.
- 3 Answers will vary. Sample answers: lack of money, lack of time, lack of tools, lack of labour, lack of manpower to manage and organize farming activities. To address the problems, a school may provide tools and resources, teachers could organize and manage activities, the school could recruit laborers.

Suggested assessment

Investigate farming problems experienced by farmers around your home or school area.

Answers will vary depending on learners' observations/experience.

Unit 4

7.4 Improving agricultural production

4 periods

This sub-strand should enable learners to acquire relevant knowledge and understanding of the factors that help to improve agricultural production activities in the Solomon Islands.

General Learning Outcomes

By the end of this sub-strand, learners should:

- 7.4.1 Know ways in which agriculture has improved (k)
- 7.4.2 Understand the contribution of science and technology in agriculture (u)
- 7.4.3 Understand the contribution of improved agricultural practices in agriculture (u)
- 7.4.4 Appreciate government roles in agriculture (a)

Specific Learning Outcomes

By the end of this sub-strand, learners should be able to:

- 7.4.1.1** State ways in which agriculture is improved
- 7.4.2.1** Explain the contribution of science and technology in agriculture
- 7.4.3.1** Explain the contribution of improved practices in agriculture
- 7.4.4.1** Form an opinion about government roles in agriculture

Lesson 10: Ways agriculture is improved

Number of periods: 1

Learner's Book page 12

My goals

By the end of this lesson, learners should:

- 7.4.1.1** State ways in which agriculture is improved

Lesson summary

This lesson explains how agricultural production has improved in the Solomon Islands since the arrival of traders. Explain that since colonial times, traders and missionaries have improved crop varieties and introduced tools and other products. For example, people have changed from digging sticks to metal hoes, or from using fire to burn down big trees, to using an axe or knife. This has greatly improved agriculture production even at the subsistence level. Explain that these days we have advanced technology like the copra or oil palm mills, tractors and other processing equipment. This is regarded as the contribution of science and technology to the improvement of agriculture in the Solomon Islands.

Suggested teaching method

Step 1 Review Lesson 9.

Step 2 Introduce and preview lesson.

Step 3 Organize learners into pairs or small groups and instruct them to do questions 1 and 2 of Activity 1.11 on page 12. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 4 Ask learners to give a brief presentation of their findings.

Step 5 Summarize the lesson and activity with an emphasis on “Ways in which agriculture is improved”.

Step 6 Instruct learners to read “Contributions of science and technology” on pages 12 and 13 to prepare for Lesson 11.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.11

- 1** They introduced new tools, new crop varieties, improved breeds of animals and improved agricultural practices.
- 2** Answers will vary. Sample answer: the set-up of a government system and agencies, improvement in science and technology, and market demands for agricultural products.

Suggested assessment

Investigate specific ways in which agriculture has improved around your own home.

Answers will vary depending on learners' observations/experience.

Lesson 11: Contributions of science and technology

Number of periods: 1

Learner's Book pages 12–14

My goals

By the end of this lesson, learners should:

7.4.2.1 Explain the contribution of science and technology in agriculture

Lesson summary

This lesson explains that science and technology have contributed to agricultural production. Some of the advances are listed.

Emphasize the negative effects of science and technology on people and the environment if not used correctly.

Suggested teaching method

Step 1 Review Lesson 10.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read “Contributions of science and technology” on pages 12 and 13. While they read, walk around to see if any learners are having difficulty understanding the text. Explain the text. Also explain that some of these advances in science and technology can have bad effects on people or the environment.

Step 4 Instruct the learners to work in pairs or small groups to do Activity 1.12 on page 14. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Contributions of science and technology”.

Step 6 Instruct learners to read “Using improved agricultural practices” on page 14 to prepare for Lesson 12.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.12

- 1** The benefits for farmers include: availability of farm machinery, tools and chemicals; improved animal breeds; improved crop varieties; and information about weather and climate.
- 2** Some of the advantages of using agricultural tools and equipment include: they save time and effort compared to the use of traditional tools and technology, they are more convenient and efficient to use, they improve work output and improve production.
- 3** Learners should include two of the following: use of chemicals in agriculture can kill useful insects and soil organisms, chemicals can pollute rivers, people can get injured if not correctly using farm tools and equipment.

Suggested assessment

Investigate ways in which science and technology contribute in agricultural production around your home.

Answers will vary. Sample answers: use of chemicals, use of fertilizers, use of modern tools, use of the correct tools to harvest crops or slaughter animals.

Lesson 12: Using improved agricultural practices

Number of periods: 1

Learner's Book page 14-15

My goals

By the end of this lesson, learners should be able to:

7.4.3.1 Explain the contribution of improved practices in agriculture

Lesson summary

This lesson explains that new agricultural practices can improve agriculture production. Some of these practices are listed.

Give examples from areas near the school to describe the different types of farming practices. The main issue that must be emphasized here is that agriculture production can be improved with the use of suitable agriculture practices.

Suggested teaching method

Step 1 Review Lesson 11.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read "Using improved agricultural practices" on page 14. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text. Clarify the terms used in the text.

Step 4 Organize learners in pairs or small groups and instruct them to do Activity 1.13 on page 15. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on "Using improved agricultural practices".

Step 6 Instruct learners to read "Roles of the government in agriculture" and do Activity 1.14 questions 1 and 2 on page 16 to prepare for Lesson 13.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.13

- 1 Using **new or different** agricultural practices, like **composting** or mixed **cropping**, helps farmers maintain or **improve** crop production on their land.
- 2 Agricultural production can be improved by rotating crops, using pest and disease control methods, using terraces, covering crops and fertilizers.
- 3 Using compost or organic matter
- 4 Mixed cropping
- 5 They should use composting and mixed cropping.

Suggested assessment

Investigate improved agricultural practices used around your home area.

Answers will vary depending on learners' observations/experience.

Lesson 13: Roles of the government in agriculture

Number of periods: 1

Learner's Book pages 15–16

My goals

By the end of this lesson, learners should be able to:

7.4.4.1 Form an opinion about government roles in agriculture

Lesson summary

This lesson explains that the government plays a major role in the improvement of agriculture practices in the Solomon Islands. The ways in which the government is involved, and its contributions are listed.

Suggested teaching method

Step 1 Review Lesson 12.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read “Roles of the government in agriculture” on page 15.

Step 4 Organize learners in pairs or small groups and instruct them to do Activity 1.14 question 3 on page 16. Walk around and assist learners having difficulties. Go through the activity with the learners and ensure that each group presents a brief summary of their discussion.

Step 5 Summarize the lesson and activity with an emphasis on “Roles of the government in agriculture”.

Step 6 Instruct learners to read “Soil as a valuable resource” on page 18 and do Activity 2.01 on page 19 to prepare for Lesson 1 in Chapter 2.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 1.14

- 1** The **government** has a very important **role** in agricultural production and improvements in agricultural production. It performs these **roles** through various agencies, which include:
 - government **ministries**
 - **government** departments
 - **institutions**
 - donors
 - non-government organization partners.
- 2** Administration and financing, research, protection, processing, distribution and marketing, production, education and training
- 3** Answers will vary. Sample answers: farmer training and capacity-building, services and infrastructure development, creating market outlets, down processing of value-added products, creating facilities for farmers, financing projects, providing technical assistance and support to farmers, providing capital resources.

Suggested assessment

Share experiences of how the government assists in agricultural production around your area.

Answers will vary. Sample answers: building roads, setting up growth centres, subsidizing transportation costs, providing technical and financial assistance and support.

Chapter 2

Introduction to soil

12 periods

Unit 1

7.5 What is soil?

2 periods

This sub-strand should enable learners to acquire relevant knowledge and an understanding of soil as a valuable resource in relation to its importance, functions and usages.

General Learning Outcomes

By the end of this sub-strand, learners should:

- 7.5.1** Know soil as a valuable resource (k)
- 7.5.2** Understand the importance, functions and uses of soil (u)

Specific Learning Outcomes

By the end of this sub-strand, learners should be able to:

- 7.5.1.1** Describe the term “soil” and how it is a valuable resource
- 7.5.2.1** Explain the importance, functions and uses of soil

Lesson 1: Soil as a valuable resource

Number of periods: 1

Learner's Book pages 18–19

My goals

By the end of this lesson, learners should be able to:

- 7.5.1.1** Explain the term “soil” and how it is a valuable resource

Lesson summary

This lesson explains the term “soil”.

Emphasize that soil is a very valuable resource, as plants depend on it to grow, and animals depend on it because they eat plants. Explain that it is important we look after it.

Discuss how soil is a valuable resource because it is a source of minerals, building materials, and it feeds and supports food crops. Explain that gardening, roads, erosion and mining can damage the soil. Emphasize that it is important to care for the soil as it will continue to support us in the future.

Suggested teaching method

Step 1 Introduce and preview lesson.

Step 2 Instruct learners to read “Soil as a valuable resource” on page 18. While they read, walk around to see if any learners are having difficulty understanding the text. Explain the text and clarify some of the terms used.

Step 3 Instruct learners to work in pairs or small groups to summarize data collected from their investigation for Activity 2.01 on page 19. Each group should present its findings to the class. Go through the activity with the learners to ensure that they have correctly answered the questions.

- Step 4** Summarize the lesson and activity with an emphasis on “Soil as a valuable resource”.
- Step 5** Instruct learners to read “The importance, functions and uses of soil” on pages 19 and 20 to prepare for Lesson 2.
- Step 6** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.01

- 1 Answers will vary depending on learners’ observations/experience.
- 2 Answers will vary depending on learners’ observations/experience.

Suggested assessment

Around your home or school area, identify a practice that shows good care of soil and a practice that shows poor care of soil.

Answers will vary depending on learners’ observations/experience.

Lesson 2: The importance, functions and uses of soil

Number of periods: 1

Learner’s Book pages 19–20

My goals

By the end of this lesson, learners should be able to:

- 7.5.2.1 Explain the importance, functions and uses of soil

Lesson summary

This lesson explains why soil is important.

Emphasize that soil sustains life by helping plants grow, harboring organisms like worms, beetles, fungi and bacteria, and providing these organisms with nutrients to live. Soil also contains food, water and air that plants need to grow. The healthier the soil, the more nutrients a plant can have, the healthier it becomes for humans and animals to eat.

Suggested teaching method

- Step 1** Review Lesson 1.
- Step 2** Introduce and preview lesson.
- Step 3** Instruct learners to read “The importance, functions and uses of soil” on pages 19 and 20. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.
- Step 4** Instruct the learners to do Activity 2.02 on page 20. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.
- Step 5** Summarize the lesson and activity with an emphasis on “The importance, functions and uses of soil”.
- Step 6** Instruct learners to read “Soil formation” on page 20 to prepare for Lesson 3.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.02

- 1 Reasons listed may include: soil holds the plant roots, soil gives or provides plants with food or nutrients, soil gives water to the plant
- 2 Important uses of soil may include: it is a source of raw materials for building, it is a medium for storing heat, it can act as a medium to filter and remove pollutants from drinking water, it can control flow of water through the landscape, it can act as a foundation for structures or buildings and a biological habitat for many organisms.

- 3 It is important to look after our soil to avoid damaging it.
- 4 Crops will grow well in soil that is not damaged and therefore contains plant food, which plants require to grow.

Suggested assessment

Observe and find out how people use and look after soil around your home.
Answers will vary depending on learners' observations/experience.

Unit 2

7.6 Where does soil come from?

2 periods

This sub-strand should enable learners to acquire relevant knowledge and an understanding of how soil is formed as a result of the influence of weathering and other processes.

General Learning Outcomes

By the end of this sub-strand, learners should:

- 7.6.1 Understand how soil is formed (u)
- 7.6.2 Understand the influence of weathering in soil formation (u)

Specific Learning Outcomes

By the end of this sub-strand, learners should be able to:

- 7.6.1.1 Explain how soil is formed
- 7.6.2.1 Explain the term “weathering”
- 7.6.2.2 Classify the different types of weathering

Lesson 3: Soil formation

Number of periods: 1

Learner's Book pages 20–21

My goals

By the end of this lesson, learners should be able to:

- 7.6.1.1 Explain how soil is formed

Lesson summary

This lesson explains the process of soil formation and points out that soil comes from parent rocks. Factors that influence soil formation are listed and the terms “parent rocks” and “soil particles” are defined.

Emphasize to the learners that soil changes and it is important that we know where soil comes from and how it is formed. Explain that soil is formed from parent rocks with the contribution of five key factors.

Suggested teaching method

Step 1 Review Lesson 2.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to work in pairs or small groups to do Activity 2.03 on page 21. Ensure that resource materials are prepared for the activity. Ensure that learners carry out the activity as instructed.

Step 4 Go through the activity with the learners and ensure that they have correctly described the experiment.

- Step 5** Summarize the lesson and activity with an emphasis on “Soil formation”.
- Step 6** Instruct learners to read “Weathering” on pages 21 and 22 and do Activity 2.04 on page 23 to prepare for Lesson 4. Set an appropriate place for learners to do this activity. Learners will need to identify that any of the three types of weathering have taken place at the site.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.03

Answers will vary depending on learners’ observations/experience.

Suggested assessment

Around your home or school area, observe and identify an example of soil-forming factors.

Answers will vary depending on learners’ observations/experience.

Lesson 4: Weathering

Number of periods: 1

Learner’s Book pages 21–23

My goals

By the end of this lesson, learners should be able to:

- 7.6.2.1 Explain the term “weathering”
- 7.6.2.2 Classify the different types of weathering

Lesson summary

This lesson explains the term “weathering”, explores the different types of weathering and provides examples of the process. The lesson also involves practical observation and investigation of different types of weathering.

Suggested teaching method

- Step 1** Learners assemble at a designated practical site.
- Step 2** Review Lesson 3.
- Step 3** Introduce and preview lesson.
- Step 4** Take learners on a guided tour to identify signs of the three different types of weathering.
- Step 5** Instruct learners to work in pairs or small groups to do Activity 2.05 on page 23. While they are doing the activity, walk around to assist learners having difficulty. Go through the activity and ensure they have correctly answered the questions.
- Step 6** Summarize the lesson and activity with an emphasis on “Weathering”.
- Step 7** Instruct learners to read “Components of soil” on page 23 and do Activity 2.06 question 1 on page 24 to prepare for Lesson 5.
- Step 8** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.04

- 1 a** Weathering is the process by which large stones or rocks break down to form soil particles.
- b** Physical weathering is the breakdown of large rocks into smaller rocks without any change in the general composition of the rock.
- c** Chemical weathering is the breakdown of bigger rocks into smaller rocks through the action of chemicals. The smaller rocks have a different chemical composition than the original, larger rock.
- d** Biological weathering is the breakdown of bigger rocks into smaller rocks through the action of plants and animals.

2	Cause of weathering	Type of weathering
	Freezing and thawing of rocks	Physical weathering
	Freezing water	Physical weathering
	Rain falling on rocks	Physical weathering
	Chemicals in water	Physical weathering
	Wind and water	Physical weathering
	Growing plants	Biological weathering
	Flowing rivers	Physical weathering
	Rainwater collected on limestone	Chemical weathering
	Chemicals in plant roots	Chemical weathering

Activity 2.05

Answers will vary depending on learners' observations/experience. It is important that the learners identify signs of the three types of weathering.

Suggested assessment

Around your home or school area, observe and identify an example of the impact of weathering.

Answers will vary depending on learners' observations/experience.

Unit 3

7.7 What is in the soil?

6 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in relation to investigating and identifying things that make up the soil.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.7.1** Know the main component of soil (k)
- 7.7.2** Understand soil particles as a component of soil (u)
- 7.7.3** Understand air as a component of soil (u)
- 7.7.4** Understand water as a component of soil (u)
- 7.7.5** Understand organic matter as a component of soil (u)
- 7.7.6** Understand organisms as a component of soil (u)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.7.1.1** List the main components of soil
- 7.7.2.1** Explain soil particles as a component of soil
- 7.7.3.1** Explain air as a component of soil
- 7.7.4.1** Explain water as a component of soil
- 7.7.5.1** Explain organic matter as a component of soil
- 7.7.6.1** Explain organisms as a component of soil

Lesson 5: Components of soil

Number of periods: 1

Learner's Book pages 23–24

My goals

By the end of this lesson, learners should be able to:

7.7.1.1 List the main components of soil

Lesson summary

This lesson introduces the main components of soil as air, water, mineral matter and organic matter. It explains that the components vary with the conditions of the soil.

You should prepare for this lesson by collecting the resource materials required to carry out the experiment. It is important that learners know and are able to list the components of soil.

Suggested teaching method

Step 1 Review Lesson 4.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to work in pairs or groups to do Activity 2.06 questions 2, 3 and 4 on page 24. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly carried out the activity.

Step 4 Summarize the lesson and activity with an emphasis on “Components of soil”.

Step 5 Instruct learners to read “Soil particles” on page 24 and do Activity 2.07 on page 25 to prepare for Lesson 6.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.06

Answers will vary depending on learners' observations/experience.

Suggested assessment

Investigate components of soil on a given site.

Answers will vary depending on learners' observations/experience.

Lesson 6: Soil particles

Number of periods: 1

Learner's Book pages 24–25

My goals

By the end of this lesson, learners should be able to:

7.7.2.1 Explain soil particles as a component of soil

Lesson summary

This lesson explains the term “soil particles” and describes how soil particles combine in different ratios to form different types of soil.

Explain that soil particles can be grouped into different types to form sandy soil, clay soil and loam.

Suggested teaching method

Step 1 Review Lesson 5.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to work in pairs or small groups to do Activity 2.08 on page 25. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 4 Summarize the lesson and activity with an emphasis on “Soil particles”.

Step 5 Instruct the learners to read “Air” on page 26 to prepare for Lesson 7.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.07

Answers will vary depending on learners' observations/experience.

Activity 2.08

- 1 Soil particles come in different sizes and form distinct layers according to size once they settle at the bottom of the jar.
- 2 The biggest soil particles are at the bottom of the glass jar.
- 3 The soil particles take time to settle in the jar and form layers after the jar has been shaken.

Suggested assessment

Collect and display examples of soil particles according to their sizes.

Answers will vary depending on learners' observations/experience.

Lesson 7: Air

Number of periods: 1

Learner's Book page 26

My goals

By the end of this lesson, learners should be able to:

7.7.3.1 Explain air as a component of soil

Lesson summary

This lesson explains that soil contains air and the amount of air varies from soil to soil.

Explain that soil contains large connected holes or spaces, which are filled with air.

Instruct learners to carry out the experiment with caution to avoid spilling water. Encourage learners to carefully observe the results of the experiment.

Suggested teaching method

Step 1 Review Lesson 6.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to work in small groups to do Activity 2.09 on page 26. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they are correctly carrying out the experiment.

Step 4 Summarize the lesson and activity with an emphasis on “Air”.

Step 5 Instruct learners to read “Water” on pages 26 and 27 to prepare for Lesson 8.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.09

Answers will vary depending on learners' observations/experience. Learners should demonstrate that air, as a component of soil, is present in the soil. Sample answer: bubbles coming out after water is poured into the jar of dry soil.

Suggested assessment

List some things that enhance the movement of air in the soil.

Answers will vary. Sample answers: humans, reptiles, crabs, insects, plants.

Lesson 8: Water

Number of periods: 1

Learner's Book pages 26–27

My goals

By the end of this lesson, learners should be able to:

7.7.4.1 Explain water as a component of soil

Lesson summary

This lesson explains that soil contains water and the importance of water in soil. It shows that the amount of water varies from soil to soil. The lesson shows the most common way water leaves the soil and the functions it performs in the soil.

You need to carry out this experiment on a sunny day. The other option for this lesson if weather is not suitable is to use the science laboratory and equipment to heat the dry soil using a beaker and Bunsen burner.

Suggested teaching method

Step 1 Review Lesson 7.

Step 2 Introduce and preview lesson.

Step 3 Ensure that resource materials are prepared for the activity. Instruct the learners to work in small groups to do Activity 2.10 on page 27. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 4 Summarize the lesson and activity with an emphasis on "Water".

Step 5 Instruct learners to read "Organic matter" on page 27 and do Activity 2.11 on page 27 to prepare for Lesson 9.

Answers

Activity 2.10

Answers will vary depending on learners' observations/experience, but are likely to include: signs of water vapor appearing underneath the glass cover.

Suggested assessment

Give two reasons why it is important to have water in soil.

Sample answers: to dissolve nutrients, to transport nutrients from one part of the soil to another, it is needed by soil organisms.

Lesson 9: Organic matter

Number of periods: 1

Learner's Book pages 27–28

My goals

By the end of this lesson, learners should be able to:

7.7.5.1 Explain organic matter as a component of soil

Lesson summary

This lesson explains the term “organic matter” and the process involved in its decomposition. It describes the source of organic matter and outlines the importance of organic matter to the soil.

Make sure you prepare resource materials prior to carrying out this experiment. Ensure that learners carry out the experiment as instructed.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 8.

Step 3 Introduce and preview lesson.

Step 4 Instruct the learners to work in pairs or small groups to do Activity 2.12 on page 28.

While they are doing the activity, walk around to see if any learners are having difficulty.

Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Organic matter”.

Step 6 Instruct learners to do Activity 2.13 on page 28 to prepare for Lesson 10.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.11

1 Organic matter means of, or from, living material.

2 Examples of important functions may include: to hold soil particles together, to store and transmit air and water, to store and supply nutrients to plants and animals, to prevent soil particles from joining together and becoming hard, to reduce bad effects of chemicals, to hold moisture, to prevent soil erosion.

Activity 2.12

Answers will vary depending on learners' observations/experience, but are likely to include rotting sticks and leaves, bones, food scraps, dead insects and animal faeces.

Suggested assessment

Draw a simple poster showing organic matter being naturally recycled.

Answers will vary depending on learners' observations/experience.

Lesson 10: Organisms

Number of periods: 1

Learner's Book page 28

My goals

By the end of this lesson, learners should be able to:

7.7.6.1 Explain organisms as a component of soil

Lesson summary

This lesson explains that soil organisms can be classified as macro and micro. Some of them can be seen with the naked eye while some are so tiny that we can only see them using special equipment.

Learners need to know that soil organisms can be regarded as a part of soil and that they play a very important function in maintaining soil fertility.

Suggested teaching method

Step 1 Review Lesson 9.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to work in pairs or small groups to complete Activity 2.14 on page 28. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they are correctly carrying out the activity.

Step 4 Summarize the lesson and activity with an emphasis on “Organisms”.

Step 5 Instruct the learners to read “Soil profiles and soil horizons” and do Activity 2.15 on page 29 to prepare for Lesson 11.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.13

- 1 Important functions of soil organisms include to: break down organic matter and chemicals, improve amount of air in the soil, help water to flow into the soil and assist in drainage.
- 2 Examples of soil organisms include: bacteria, fungi, nematodes, insects, and earthworms.
- 3 Some soil organisms are useful to farmers while others are not so useful as they stop good crop production. These include rats, nematodes, and fungus that causes root rot.

Activity 2.14

Answers will vary depending on learners’ observations/experience but are likely to include: earthworms, ants, and centipedes.

Suggested assessment

Identify one soil organism and describe why it is useful to farmers.

Answers will vary depending on learners’ observations/experience.

Unit 4

7.8 What is a soil profile?

2 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills to examine soil surfaces, profiles and horizons.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.8.1** Know soil profiles and horizons (k)
- 7.8.2** Show skill in examining soil profiles (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.8.1.1** Describe the terms “soil profile” and “soil horizon”
- 7.8.2.1** Examine soil profiles and horizons of a given site
- 7.8.2.2** Draw and label soil profiles and horizons of a given site

Lesson 11: Soil profiles and soil horizons

Number of periods: 1

Learner's Book page 29

My goals

By the end of this lesson learners should be able to:

7.8.1.1 Describe the terms “soil profile” and “soil horizon”

7.8.2.2 Draw and label soil profiles and horizons of a given site

Lesson summary

This lesson explains the terms “soil profile” and “soil horizons”. It also explains that soil profiles differ from one location to another and they change depth. The different horizons in a soil profile are also listed.

Explain to learners that materials arrange themselves in the soil to form soil horizons.

Suggested teaching method

Step 1 Review Lesson 10.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read ‘Soil profiles and soil horizons’ on page 29 and complete questions 1 and 2 of Activity 2.15. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 4 Summarize the lesson and activity with an emphasis on “Soil profiles and soil horizons”.

Step 5 Instruct learners to read “Examining soil profiles and soil horizons” on page 30 to prepare for Lesson 12.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.15

1 a A soil profile is a side view, or a vertical section, of soil that shows its individual layers

b A soil horizon is each of the different layers shown in the soil profile.

2 Generally a **soil profile consists** of the following horizons:

- horizon O
- horizon A
- horizon B
- horizon C
- horizon R.

Suggested assessment

Describe features of different soil horizons. Answers will vary.

Lesson 12: Examining soil profiles and soil horizons

Number of periods: 1

Learner's Book page 30

My goals

By the end of this lesson, learners should be able to:

7.8.2.1 Examine soil profiles and horizons of a given site

7.8.2.2 Draw and label soil profiles and horizons of the site examined

Lesson summary

In this practical lesson, learners are given the opportunity to examine soil profiles and horizons by digging a pit, observing a riverbank or road cutting. Being able to observe and identify different layers is sufficient at this stage.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 11.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 2.16 on page 30. For some schools, it may not be possible to dig a hole to observe a soil profile. In this case, identify another site, like a cutting or cliff near a roadside or a riverbank to enable learners to observe a soil profile. While they are doing the activity, walk around to assist learners having difficulty. Ensure that learners have correctly carried out the tasks.

Step 5 Summarize the lesson and activity with an emphasis on “Examining soil profiles and soil horizons”.

Step 6 Instruct learners to read “Growing food in the Solomon Islands” on page 31 and work in pairs or small groups to do Activity 3.01 questions 1, 2, 3 and 4 on page 32 to prepare for Lesson 1 in Chapter 3.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 2.16

Answers will vary depending on learners’ observations/experience, but are likely to include: horizon O, horizon A, horizon B, horizon C and horizon R.

Suggested assessment

Write a small descriptive report about the soil profile and horizons of the site examined in Activity 2.16.

Answers will vary depending on learners’ observations/experience.

Chapter 3

Introduction to food crops

24 periods

Unit 1

7.9 Why grow food crops?

2 periods

This sub-strand should enable learners to acquire relevant knowledge and understanding of growing food in the Solomon Islands and the benefits of growing food crops.

General learning outcomes

By the end of this sub-strand, learners should:

7.9.1 Know the concept of growing food crops in the Solomon Islands (k)

7.9.2 Appreciate the benefits of growing food crops (a)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.9.1.1** Define the terms “farm” and “garden”
- 7.9.1.2** Describe the concepts of growing food in the Solomon Islands
- 7.9.2.1** Share the benefits of growing food crops

Lesson 1: Growing food in the Solomon Islands

Number of periods: 1

Learner's Book pages 31–32

My goals

By the end of this lesson, learners should be able to:

- 7.9.1.1** Define the terms “farm” and “garden”
- 7.9.1.2** Describe the concepts of growing food in the Solomon Islands

Lesson summary

This lesson defines the terms “farms” and “gardens” in the context of the Solomon Islands.

It shows that growing food crops is the responsibility of families.

Emphasise to learners that growing food crops should be regarded as a worthwhile occupation.

Suggested teaching method

Step 1 Introduce and preview lesson.

Step 2 Instruct learners to work in pairs or small groups to complete Activity 3.01 question 5 on page 32.

Step 3 Summarize the lesson and activity with an emphasis on “Growing food in the Solomon Islands”.

Step 4 Instruct learners to read “Benefits of growing food crops” on page 32 to prepare for Lesson 2.

Step 5 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.01

- 1 a** A farm is a large area of land that is used for growing crops or raising farm animals.
- b** A garden is a smaller plot of land to a farm.
- 2** Answers will vary depending on learners' observations/experience.
- 3** Answers will vary. Sample answer:

Farmer	Types of food crops grown	Reasons for growing food crops
Farmer 1	taro, sweet potatoes, yam, pana, sugarcane, slippery cabbage	for home consumption
Farmer 2	root crops like taro, cassava, yam, sweet potatoes, vegetables	some for consumption and some for sale

- 4** Answers will vary. Sample answers:
 - a** Have other work to do, have no area to grow food crops
 - b** Everyone will go hungry, people will starve and die
- 5** Answers will vary. It is important for learners to recognize the importance of agriculture in providing food security and sustaining human livelihood. Thus, the roles of producing and growing food crops should not be restricted to individual members of any household but taken up by everyone within a given household.

Suggested assessment

Describe the average size of the food crop farms or gardens around your home.

Lesson 2: Benefits of growing food crops

Number of periods: 1

Learner's Book pages 32–33

My goals

By the end of this lesson, learners should be able to:

7.9.2.1 Share the benefits of growing food crops

Lesson summary

This lesson points out that hard work is necessary for growing food crops.

Explain the main reasons why farmers benefit from growing food crops. Point out that people in urban areas do not have adequate land to grow food and therefore depend on processed foods, which do not always contain the nutrients that the body requires.

Suggested teaching method

Step 1 Review Lesson 1.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Benefits of growing food crops” on pages 32–33. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to work in pairs or small groups to do Activity 3.02 on page 33. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Benefits of growing food crops”.

Step 6 Instruct learners to read “Plant reproduction” on page 33 to prepare for Lesson 3.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.02

- 1 Learners should include three of the following: growing food crops means farmers have access to a variety of food, it improves food security of a household, it provides a source of income, it is a source of employment, it helps to supplement a person's diet.
- 2 Answers will vary. Reasons listed may include: farmers will have access to a variety of food crops, farmers feel secure that they can access food, food is readily available.
- 3 Answers will vary depending on learners' observations/experience.
- 4 Answers will vary. Sample answer: we can encourage people to grow more food crops by making awareness programs about the importance of food security.
- 5 Food produced from farms or gardens is usually more nutritious than food bought from a shop.

Suggested assessment

Assist your family or school to grow food crops.

Unit 2

7.10 Plant reproduction

3 periods

This sub-strand should enable learners to acquire relevant knowledge and an understanding of plant reproduction through the use of seeds or using vegetative parts of the plants.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.10.1** Know the term “plant reproduction” (k)
- 7.10.2** Understand sexual reproduction in plants (u)
- 7.10.3** Understand asexual reproduction in plants (u)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.10.1.1** Define and describe the term “plant reproduction”
- 7.10.2.1** Explain sexual reproduction in plants
- 7.10.3.1** Explain asexual reproduction in plants

Lesson 3: What is plant reproduction?

Number of periods: 1

Learner's Book page 33

My goals

By the end of this lesson, learners should be able to:

- 7.10.1.1** Define and describe the term “plant reproduction”

Lesson summary

This lesson describes the term “plant reproduction” and stresses that knowledge about plant reproduction is crucial in growing food crops. The lesson also outlines the two types of plant reproduction.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 2.

Step 3 Introduce and preview lesson.

Step 4 Accompany learners on a guided tour to observe different food crops and how they reproduce. Organize them to work in pairs or small groups and instruct them to do the additional activity included on page 31 of this Teacher's Guide. While they are doing the activity, walk around and assist learners having difficulty. Go through the activity with the learners and ensure they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Plant reproduction”.

Step 6 Instruct learners to read “Sexual reproduction” on page 33 and do Activity 3.03 question 1 on page 34 to prepare for Lesson 4.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Additional activity

Observe different food crops growing around your home or school area. Identify whether the crop can reproduce sexually or asexually.

Record the information in a table, like the one below.

Name of crop	Way in which crop reproduces
pawpaw	sexually
banana	asexually
sugarcane	asexually
sweet potato	asexually
coconut	sexually
slippery cabbage	asexually

Answers

Additional activity

Answers will vary depending on learners' observations/experience.

Suggested assessment

Identify food crops around your home or school area that can reproduce both sexually and asexually.

Answers will vary. Sample answers: tomato, eggplant, citrus crops, mango, cutnut.

Lesson 4: Sexual reproduction

Number of periods: 1

Learner's Book pages 33–34

My goals

By the end of this lesson, learners should be able to:

7.10.2.1 Explain sexual reproduction in plants

Lesson summary

This lesson describes the term “sexual reproduction” and explains processes involved in sexual reproduction. Bean seeds are used to illustrate the process.

Mention other examples of food crops that use this method.

Suggested teaching method

Step 1 Review Lesson 3.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Sexual reproduction” on pages 33 and 34. While they read, walk around to see if any learners are having difficulty understanding the text. Explain the text and clarify some of the terms used.

Step 4 Instruct learners to work in pairs or small groups to do Activity 3.03 questions 2, 3 and 4 on page 34. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 6 Summarize the lesson and activity with an emphasis on “Sexual reproduction”.

Step 7 Instruct learners to read “Asexual reproduction” on page 34 and do Activity 3.04 questions 1, 2 and 4 on page 35 to prepare for Lesson 5.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.03

- 1 A seed is the part of a plant that will eventually grow into a new plant.
- 2–3 Answers will vary depending on learners' observations/experience. Learners should carefully examine the seed's inner and outer parts.
- 4 Learners draw and correctly label the seeds. Refer to Figure 3.05 for correct labels. Note that labels and position of features will vary depending on the type of seed.

Suggested assessment

Collect and display seeds of other food crops grown around your home or school.

Answers will vary. Seeds collected may include: mango, guava, pawpaw, bush lime, orange.

Lesson 5: Asexual reproduction

Number of periods: 1

Learner's Book page 34-35

My goals

By the end of this lesson, learners should be able to:

- 7.10.3.1 Explain asexual reproduction in plants

Lesson summary

This lesson describes the term “asexual reproduction” and gives examples of food crops that propagate by way of asexual reproduction. It points out that this process of reproduction makes it possible to grow many food crops in the Solomon Islands.

Suggested teaching method

Step 1 Review Lesson 4.

Step 2 Introduce and preview lesson.

Step 3 Accompany learners on a guided tour and instruct them to complete Activity 3.04 question 3 on page 35. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 4 Summarize the lesson and activity with an emphasis on “Asexual reproduction”.

Step 5 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.04

- 1 Plant reproduction refers to the process when a plant makes another plant.
- 2 The two main ways a plant can reproduce are through sexual and asexual reproduction. In sexual reproduction, plants grow flowers and fruit that will develop seeds. In asexual reproduction, a new plant is grown from another part of the plant—not from seeds.
- 3 Answers will vary. Sample answer:

Name of crop	Parts of plant used for planting
1 taro	top, corm, runners, cormlets, tubers
2 sweet potato	vine, tuber
3 cassava	cutting (stem)
4 sugarcane	tops, stem
5 mango	seed, branches
6 kangkong	vine

- 4 A benefit of asexual reproduction is that farmers can plant crops directly, without using seeds.

Suggested assessment

Observe a garden or farm around your home or school and determine how the crops grown are being reproduced.

Answers will vary depending on learners' observations/experience.

Unit 3

7.11 Types of food crops

2 periods

This sub-strand should enable learners to acquire relevant knowledge and an understanding of the different food crops grown in Solomon Islands.

General learning outcomes

By the end of this sub-strand, learners should:

7.11.1 Understand the different types of food crops grown (u)

7.11.2 Appreciate the different types of food crops grown

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

7.11.1.1 Classify food crops

7.11.2.1 Share ideas about the different food crops grown

Lesson 6: Classification of food crops

Number of periods: 1

Learner's Book page 35

My goals

By the end of this lesson, learners should be able to:

7.11.1.1 Classify food crops

Lesson summary

This lesson sorts food crops into those that grow above ground and those that grow below ground. The two groups can be further divided based on the parts of the plant that are consumed.

Explain to the class why it is important to classify food crops.

Suggested teaching method

Step 1 Review Lesson 5.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read "Classification of food crops" on page 35. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to work in pairs or small groups to complete Activity 3.05 on page 37. Each group should present their findings to the class. Go through the activity with the learners and ensure they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on "Classification of food crops".

Step 6 Instruct learners to complete Activity 3.05 question 2 to prepare for Lesson 7.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.05

- 1 The two main groups of food crops are above-ground food crops and below-ground food crops.
- 2 Answers will vary. Sample answer:

Examples of above-ground food crops	Examples of below-ground food crops
pawpaw	pana
pineapple	yam
banana	taro
tomato	ginger
slippery cabbage	cassava

Suggested assessment

Investigate why farmers around your home or school area continue to grow the common food crops such as sweet potatoes and cassava.

Answers will vary. Sample answer: staple food, crops are common and easily grown around this area, crops are easy to manage.

Lesson 7: Examples of different food crops grown in the Solomon Islands

Number of periods: 1

Learner's Book pages 36–37

My goals

By the end of this lesson, learners should be able to:

- 7.11.2.1 Share ideas about the different food crops grown

Lesson summary

This lesson identifies examples of food crops grown around the learners' home or school area. Examples of food crops should be collected and displayed in the classroom.

Suggested teaching method

Step 1 Review Lesson 4.

Step 2 Introduce and preview lesson.

Step 3 Accompany the learners on a guided tour around the school and organize learners into pairs or small groups to complete Activity 3.06 question 1 on page 37. Each group should present its findings to the class. Go through the Activity with the learners and ensure they have correctly answered the questions.

Step 4 Summarize the lesson and activity with an emphasis on “Examples of food crops grown in the Solomon Islands”.

Step 5 Instruct learners to read “Planning to grow food crops” on page 37 to prepare for Lesson 8.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.06

- 1 Answers will vary depending on learners' observations/experience.
- 2 Answers will vary. Problems listed may include: availability of planting materials, size of area too small, some food crops may not grow well in the area, area not good for growing some types of food crops, farmers' preferences in growing food crops.

Suggested assessment

Design a simple awareness poster to encourage people around your home or school area to grow food crops.

Answers will vary.

Unit 4

7.12 Preparing to grow food crops

7 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in terms of planning to grow food, methods used for growing food crops, selecting suitable sites, using the right tools, clearing and preparing sites and selecting planting materials.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.12.1** Show skills in planning to grow food crops (s)
- 7.12.2** Show skills in choosing food crops to grow (s)
- 7.12.3** Show skills in using different cropping methods to grow food crops (s)
- 7.12.4** Show skills in choosing a suitable site (s)
- 7.12.5** Show skills in using the right tools (s)
- 7.12.6** Show skills in clearing and preparing a site (s)
- 7.12.7** Show skills in selecting suitable food crop planting materials (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.12.1.1** Plan to grow food crops
- 7.12.2.1** Choose food crops
- 7.12.3.1** Use different cropping methods to grow food crops
- 7.12.4.1** Choose a suitable site for growing food crops
- 7.12.5.1** Use the right tools to grow food crops
- 7.12.6.1** Clear and prepare a site
- 7.12.7.1** Select planting materials

Lesson 8: Planning to grow food crops

Number of periods: 1

Learner's Book page 37–38

My goals

By the end of this lesson, learners should be able to:

- 7.12.1.1** Plan to grow food crops

Lesson summary

The lesson explains why planning is important for growing food crops. The need to estimate costs involved from growing crops is also explained.

Explain why planning is important in any activity. Go through some of the things that must be considered when planning to grow food crops.

Suggested teaching method

Step 1 Review Lesson 7.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Planning to grow food crops” on page 37. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to do Activity 3.07 on page 38. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Planning to grow food crops”.

Step 6 Instruct learners to read “Choosing what to grow” on page 38 to prepare for Lesson 9.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.07

1 Planning involves **making** an **outline** of what you intend to do **before** you get **started**.

2 Learners should include three of the following: availability of land, resources you would need, costs involved, cropping method to use, types of food crops to grow, location of a suitable site, availability of planting materials, tools and equipment needed, preparation of the land, food requirements or needs of your household, and the market demand for different food crops.

3 Answers will vary depending on learners’ observations/experience. Learners should consider that every activity undertaken by farmers will involve some form of cost.

Suggested assessment

Design a simple budget that would enable you to grow one food crop.

Learners should demonstrate knowledge of planning and designing a simple budget.

Lesson 9: Choosing what to grow

Number of periods: 1

Learner’s Book page 38

My goals

By the end of this lesson, learners should be able to:

7.12.2.1 Choose food crops

Lesson summary

This lesson explains the factors that need to be considered when choosing which food crops to grow. The factors to be considered are outlined.

Explain to learners that choosing what crops to grow is an important part of planning and point out the factors that will influence the choice. Emphasize that the most important factor is suitability of the crop to the area.

Suggested teaching method

Step 1 Review Lesson 8.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Choosing what to grow” on page 38. Explain the text and clarify some of the terms used.

Step 4 Organize learners into pairs or small groups and complete Activity 3.08 on page 38. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

- Step 5** Summarize the lesson and activity with an emphasis on “Choosing what to grow”.
- Step 6** Instruct learners to read “Cropping methods” on pages 38 to 39 to prepare for Lesson 10.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.08

- 1 Factors that may influence what food crops to grow: food crops that people in your household enjoy eating, food crops that are sold in the market, food crops that are most often bought in the market, the price of the food crops in the market.
- 2 Answers will vary depending on learners’ observations/experience.
- 3 Answers will vary depending on learners’ observations/experience.
- 4 Answers will vary depending on learners’ observations/experience.

Suggested assessment

Justify the choices of farmers to grow certain types of food crops around your home or school area.

Answers will vary depending on learners’ observations/experience.

Lesson 10: Cropping methods

Number of periods: 1

Learner’s Book pages 38–40

My goals

By the end of this lesson, learners should be able to:

7.12.3.1 Use different cropping methods to grow food crops

Lesson summary

This lesson introduces learners to cropping methods that must be used to grow food crops.

Examples of cropping methods are given.

Explain that once the decision is made to grow food crops, the next step is to decide what cropping method to use. Explain that people in urban centers or atolls where there isn’t enough space to grow food crops can use the methods in figures 3.19 to 3.22. If possible take the learners on a guided tour to observe examples of each cropping method.

Suggested teaching method

Step 1 Review Lesson 9.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Cropping methods” on pages 38 and 39. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to work in pairs or small groups to complete Activity 3.09 and organize their work, which they will present to the class. Go through the activity with the learners to ensure they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Cropping methods”.

Step 6 Instruct learners to read “Choosing a site” on page 40 and complete Activity 3.10 questions 1 to 4 on page 41 to prepare for Lesson 11.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.09

1	Methods of cropping	Features of cropping methods
	Shifting cultivation or bush fallowing	Farmers cultivate a piece of land for 2 to 4 years. When the soil is exhausted of plant food, as indicated by a low crop yield, the farmer leaves the area and moves on to a farm a different piece of land. This allows the exhausted land to recover. The land should be allowed to recover for 10 to 20 years before it is used again.
	Continuous cropping	Growing crops on a piece of land for many years without resting the land.
	Monocropping	Growing the same crop on the same piece of land from year to year. Annual, or perennial, crops can be grown in monocropping.
	Mixed cropping or multiple cropping	Growing more than one type of crop on a piece of land at the same time.
	Crop rotation	Alternating growing different crops on the same land to maintain soil fertility and structures.
	Intercropping	Growing two crops in the same area using definite spacing.
	Home or school garden	Growing food crops in a small area around your house.
	Urban agriculture techniques	Growing food crops in a box or container around your house, especially in town or urban areas.

2 Answers will vary depending on learners' observations/experience. Sample answer:

Farmer	Cropping method used	Reasons for using this method
1	mixed cropping	have access to different food crops
2	mono cropping	grow crops over a large area of land

3 Answers will vary. Sample answer: people living in urban centres can grow crops on rooftops, in containers, in polythene bags and in tyres.

Suggested assessment

Justify advantages and disadvantages of the cropping methods used by farmers around your home or school area.

Answers will vary depending on learners' observations/experience.

Lesson 11: Choosing a site

Number of periods: 1

Learner's Book pages 40–41

My goals

By the end of this lesson, learners should be able to:

7.12.4.1 Choose a suitable site for growing food crops

Lesson summary

This lesson explains that it is necessary to consider a site that is suitable to grow food crops.

This should determine which crops are to be grown, and the method to be used.

Explain to the learners that a suitable site depends very much on the crop that you choose to grow. For example a suitable site for rice is a swampy area, while peanuts require a flat area.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 10.

Step 3 Introduce and preview lesson.

Step 4 Take learners on a guided tour around the school area to observe and identify a suitable site for growing food crops.

Step 5 Organize learners to work in pairs or small groups to do Activity 3.10 question 5 on page 41. While they are doing the activity, walk around to assist learners having difficulty. Ensure the learners have correctly completed the activity.

Step 6 Summarize the lesson and activity with an emphasis on “Choosing a site”.

Step 7 Instruct learners to read “Using the right tools” on page 41 and do Activity 3.11 questions 1 and 4 to prepare for Lesson 12.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.10

- 1 You should choose: an area that is quite flat, is near a water source, and that has a type of soil that is well drained and rich in organic matter.
- 2 Some general criteria used to indicate whether a site is suitable to grow food crops are given in question 1.
- 3 Things that might affect how suitable an area is include: whether an area is flat or sloped, whether there is water source nearby, and the quality of the soil, for instance whether it is well drained or the organic-matter content of soil is low, etc.
- 4 If the area is not suitable, there are ways in which you can grow food crops, such as planting in containers, boxes, tyres or raised beds.
- 5 Learners should demonstrate a knowledge of choosing a suitable site.

Suggested assessment

Plan how you would utilize an unsuitable area around your home or school area to grow food crops.

Answers will vary depending on learners’ observations/experience.

Lesson 12: Using the right tools

Number of periods: 1

Learner’s Book page 41

My goals

By the end of this lesson, learners should be able to:

7.12.5.1 Use the right tools to grow food crops

Lesson summary

This lesson points out that there are different tools required, starting from site preparation to harvesting. It is emphasized that the right tools must be used for the right job.

Explain that learners need to be cautioned about the proper way of using the tools for the right job. Keep reminding learners that they must use tools safely while working on their agricultural projects.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 11.

Step 3 Introduce and preview lesson.

Step 4 Accompany the learners on a guided tour around the school or a farmers' tool shed to observe and identify farm tools.

Step 5 Instruct learners to work in pairs or small groups to complete Activity 3.11 questions 2 and 3 on page 41. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 6 Summarize the lesson and activity with an emphasis on "Using the right tools".

Step 7 Instruct learners to read "Clearing and preparing a site" and do Activity 3.12 question 3 on page 42 to prepare for Lesson 13.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.11

- 1 It is important to have knowledge about tools to know which tool to use for each task.
- 2 Answers will vary depending on learners' observations/experience.
- 3 Answers will vary depending on learners' observations/experience.
- 4 Answers will vary. Sample answer: a digging bar wielded from scrap irons.

Suggested assessment

Investigate factors that may hinder people from obtaining basic farm tools.

Answers will vary. Sample answer: tools may be too expensive, tools may not be accessible for purchase.

Lesson 13: Clearing and preparing a site

Number of periods: 1

Learner's Book page 42

My goals

By the end of this lesson, learners should be able to:

7.12.6.1 Clear and prepare a site

Lesson summary

This lesson explains that once the site is selected, you must prepare the site in order to grow crops.

Emphasize that remains of cleared or cut down plants don't need to be burned or thrown away. They can be mixed with the soil as they contain plant food.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 12.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 3.12 questions 1 and 2 on page 42. Learners work in their groups to clear their plots. Ensure that learners are using the correct tools, using the tools in the right way, and that they understand what the tool is actually doing to the soil. Also ensure that organic matter is mixed well with the soil.

Step 5 Summarize the lesson and activity with an emphasis on "Clearing and preparing a site".

Step 6 Instruct the learners to read "Selecting planting materials" on page 42 and do Activity 3.13 questions 1, 3 and 4 on page 43 to prepare for Lesson 14.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.12

Answers will vary depending on learners' observations/experience. Learners should demonstrate knowledge of clearing and preparing a selected site.

Suggested assessment

Explain how people around your home or school area clear and prepare a site.

Answers will vary depending on learners' observations/experience.

Lesson 14: Selecting planting materials

Number of periods: 1

Learner's Book pages 42–43

My goals

By the end of this lesson, learners should be able to:

7.12.7.1 Select planting materials

Lesson summary

This lesson explains that before sowing or planting, it is important to obtain good planting materials. Farmers should prepare and use their own planting materials. Some of the guidelines for selecting planting materials are also given in the lesson.

Suggested teaching method

Step 1 Review Lesson 13.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to complete Activity 3.13 question 2 on page 43. Give learners the opportunity to display and present their sample collection to the class. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 4 Summarize the lesson and activity with an emphasis on "Selecting planting materials".

Step 5 Instruct learners to read "Direct sowing" on page 43 to prepare for Lesson 7.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.13

1 Answers will vary. Materials listed may include: cuttings, suckers, tubers, rhizomes, seedlings, corms.

2 Answers will vary depending on learners' observations/experience.

3 A healthy planting material is one that will grow and develop into a strong plant.

When selecting planting materials, select those which come from plants that grow well in the soil and climatic condition of your site, are healthy, resistant to pests and diseases, mature early and those that produce high yield or a large amount of food crops.

4 Answers will vary depending on learners' observations/experience.

Suggested assessment

Prepare planting materials for a given food crop.

Learners should demonstrate knowledge of how to prepare planting materials for a given food crop.

Unit 5

7.13 Raising seedlings

4 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in relation to direct sowing, establishing a seedling nursery, preparing soil mix and sowing seeds in the nursery.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.13.1** Understand direct sowing (u)
- 7.13.2** Show skills in constructing a seedling nursery (s)
- 7.13.3** Show skills in collecting and preparing soil mix (s)
- 7.13.4** Show skill in sowing seeds in the nursery (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.13.1.1** Explain the term “direct sowing”
- 7.13.2.1** Construct a seedling nursery
- 7.13.3.1** Collect and prepare soil mix for a nursery
- 7.13.4.1** Sow seeds in the nursery

Lesson 15: Direct sowing

Number of periods: 1

Learner's Book page 43

My goals

By the end of this lesson, learners should be able to:

- 7.13.1.1** Explain the term “direct sowing”

Lesson summary

This lesson explains the concept of direct sowing. It explains how plant cuttings or seeds can be directly sown.

Explain that some food crops are sown using cuttings while other seeds are sown. Describe the requirements that food crops that are sown directly must meet.

Suggested teaching method

Step 1 Review Lesson 14.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Direct sowing” on page 43. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to do Activity 3.14 on page 43. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Direct sowing”.

Step 6 Instruct learners to read “Starting a seedling nursery” and do Activity 3.15 question 1 on page 44 to prepare for Lesson 16.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.14

- 1 Direct sowing is sowing seeds directly into the planting bed without raising them first in the seedling nursery.
- 2 Some food crops can be sown directly because they have big seeds, can germinate easily, grow and establish easily and would be difficult to transplant if they are raised in the seedling nursery.
- 3 It is important to plant seeds at the correct depth and spacing to enable each plant to establish its rooting system firmly and to avoid crowding of plants.
- 4 It is important to plant two seeds per hole in case one seed doesn't germinate.

Suggested assessment

Demonstrate the direct sowing of one food crop.

Learners should demonstrate knowledge of direct sowing of seeds.

Lesson 16: Starting a seedling nursery

Number of periods: 1

Learner's Book page 44

My goals

By the end of this lesson, learners should be able to:

- 7.13.2.1 Establish a seedling nursery

Lesson summary

This lesson explains that some crops must be raised as seedlings before being transplanted into the field. The term “nursery” is explained and guidelines for choosing a nursery site are provided.

For the construction of a simple seedling nursery, it is vital that you prepare appropriate materials for learners to use.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 15.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to carry out Activity 3.15 question 2 on page 44. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Starting a seedling nursery”.

Step 6 Instruct learners to read “Preparing a soil mix” on page 45 and do Activity 3.16 and Activity 3.17 question 1 on page 45 to prepare for Lesson 17.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.15

- 1 Factors for a good site include: near a water source, short distance from a farm or garden site, free of pests, close to the farmer's house, flat area and well-drained soil.
- 2 Learners should complete the activity, demonstrating knowledge of constructing a seedling nursery.

Suggested assessment

Construct a simple open-bed or ground nursery.

Learners should demonstrate knowledge of how to construct a simple ground seedling nursery.

Lesson 17: Preparing a soil mix

Number of periods: 1

Learner's Book page 45

My goals

By the end of this lesson, learners should be able to:

7.13.3.1 Collect and prepare soil mix for a nursery

Lesson summary

This lesson explains the importance of a good soil mix for a nursery. The main combinations in a nursery and the method of soil preparation are outlined.

Emphasize the importance of a good soil mix and describe what comprises a good soil mix. Explain the term "soil sterilization" and why soils must be sterilized.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 16.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to do Activity 3.17 question 2 on page 45. While they are doing the activity, walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on "Preparing a soil mix".

Step 6 Instruct learners to read "Sowing seeds in the nursery" on page 46 to prepare for Lesson 18.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.16

Before we can sow seeds, we must **prepare a good** soil mix for the **nursery**. A good soil mix must **contain plant food** that will help the seedlings **grow** well.

Activity 3.17

Learners should complete the activity, demonstrating knowledge of how to prepare a soil mix.

Suggested assessment

Prepare suitable soil mix for the nursery using other appropriate materials.

Learners should demonstrate knowledge of how to design and prepare other suitable soil mix for the nursery.

Lesson 18: Sowing seeds in the nursery

Number of periods: 1

Learner's Book page 46

My goals

By the end of this lesson, learners should be able to:

7.13.4.1 Sow seeds in the nursery

Lesson summary

This lesson introduces learners to the steps needed to sow seeds in the nursery.

It is important that you demonstrate how to sow seeds. It must be noted that the seeds bought from the shop are quite expensive and that wasting seeds should be avoided. Make sure that learners carry out the task correctly.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 17.

Step 3 Introduce and preview lesson.

Step 4 Organize learners in pairs or small groups and instruct them to do Activity 3.18 on page 46. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Sowing seeds in the nursery”.

Step 6 Instruct learners to read “Seedling nursery care” on page 46 to prepare for Lesson 19.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.18

Learners should complete the activity, demonstrating knowledge of how to sow seeds.

Suggested assessment

Demonstrate sowing seeds in an open-bed nursery.

Learners should demonstrate knowledge of how to sow seeds in the open-bed nursery.

Unit 6

7.14 Caring for the seedlings

6 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in seedling care and nursery management.

General learning outcomes

By the end of this sub-strand, learners should:

7.14.1 Know the important caring practices for a seedling nursery (k)

7.14.2 Show skill in watering a seedling nursery (s)

7.14.3 Show skill in pricking newly germinated seedling (s)

7.14.4 Show skill in controlling weeds in the seedling nursery (s)

7.14.5 Show skill in controlling pests and diseases in the seedling nursery (s)

7.14.6 Show skill in hardening seedlings (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

7.14.1.1 List important caring practices for a seedling nursery

7.14.2.1 Water a seedling nursery

7.14.3.1 Prick newly germinated seedlings

7.14.4.1 Control weeds in the seedling nursery

7.14.5.1 Control pests and diseases in the seedling nursery

7.14.6.1 Harden seedlings

Lesson 19: Caring for the seedlings

Number of periods: 1

Learner's Book pages 46–47

My goals

By the end of this lesson, learners should be able to:

7.14.1.1 List important caring practices for a seedling nursery

Lesson summary

This lesson highlights the importance of proper care for seedlings in a nursery. Watering, pricking, weeding and pest and disease control are listed as the important activities to take care of seedlings.

Explain that once the seeds have been sown, it is important to care for the seedlings. Emphasize that when a seedling germinates in the nursery, it must be looked after properly until it is transplanted out into the field.

Suggested teaching method

Step 1 Review Lesson 18.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Seedling nursery care” on page 46. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to work in pairs or small groups to do Activity 3.19 on page 47.

While they are doing the activity, walk around to see if any learners are having difficulty.

Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Seedling nursery care”.

Step 6 Instruct learners to read “Watering” on page 47 to prepare for Lesson 20.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.19

- 1 Farmers need to care for newly germinated seedlings because seedlings need additional assistance to thrive, including regular watering, protection from pests, diseases and weeds, as well as pricking and hardening.
- 2 Some of the nursery caring practices include: watering, pricking, weeding, pest and disease control and hardening.

Suggested assessment

Investigate how food crop caring practices are carried out on a farm.

Answers will vary depending on learners' observations/experience.

Lesson 20: Watering

Number of periods: 1

Learner's Book page 47

My goals

By the end of this lesson, learners should be able to:

7.14.2.1 Water a seedling nursery

Lesson summary

This lesson describes the importance of watering seedlings and it suggests simple equipment to water seedlings in the nursery.

Emphasize the importance of watering seedlings in the nursery. Explain the importance of providing the right amount of water to the seedlings. Emphasize the importance of observing the seedling nursery daily to identify if seedlings require water. Note that the right timing of watering seedlings, using the right equipment and method, is important. Explain that over-watering seedlings should be avoided.

Suggested teaching method

- Step 1** Learners assemble at a designated practical site.
- Step 2** Review Lesson 19.
- Step 3** Introduce and preview lesson.
- Step 4** Instruct learners to work in pairs or small groups to carry out Activity 3.20 on page 47.
Walk around to ensure that the learners are carrying out the activity correctly.
- Step 5** Summarize the lesson and activity with an emphasis on “Watering”.
- Step 6** Instruct learners to read “Pricking” on page 47 to prepare for Lesson 21.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.20

Learners should complete the activity, demonstrating knowledge of watering.

Suggested assessment

Prepare and apply a water mixture containing animal manure to the nursery seedlings.

Learners should demonstrate knowledge of how to prepare and apply water mixture containing animal manure to nursery seedlings.

Lesson 21: Pricking

Number of periods: 1

Learner’s Book page 47

My goals

By the end of this lesson, learners should be able to:

- 7.14.3.1 Prick newly germinated seedlings

Lesson summary

This lesson explains the term “pricking” and describes the importance of carrying out the practice.

Define the term “pricking” and explain the reasons for practicing pricking in nurseries.

Suggested teaching method

- Step 1** Learners assemble at a designated practical site.
- Step 2** Review Lesson 20.
- Step 3** Introduce and preview lesson.
- Step 4** Instruct learners to work in pairs or small groups to carry out Activity 3.21 on page 47.
Walk around to ensure that the learners are carrying out the activity correctly.
- Step 5** Summarize the lesson and activity with an emphasis on “Pricking”.
- Step 6** Instruct learners to read “Weeding” on page 48 to prepare for Lesson 22.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.21

Learners should complete the activity, demonstrating knowledge of pricking.

Suggested assessment

Demonstrate pricking newly germinated seedlings.

Learners should demonstrate knowledge of how to prick newly germinated seedlings.

Lesson 22: Weeding

Number of periods: 1

Learner's Book page 48

My goals

By the end of this lesson, learners should be able to:

7.14.4.1 Control weeds in the seedling nursery

Lesson summary

This lesson explains that weeding is an important component of taking care of seedlings. It also points out the consequences of not weeding the seedlings.

Explain that weeding is an important practice in taking care of seedlings in a nursery.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 21.

Step 3 Introduce and preview lesson.

Step 4 Instruct the learners to work in pairs or small groups and do Activity 3.22 on page 48.
Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on "Weeding".

Step 6 Instruct learners to read "Controlling pests and diseases" on page 48 to prepare for Lesson 23.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.22

Learners should complete the activity, demonstrating knowledge of weeding.

Suggested assessment

Demonstrate the most appropriate way to control weeds in the nursery.

Learners should demonstrate knowledge of how to control weeds.

Lesson 23: Controlling pests and diseases

Number of periods: 1

Learner's Book page 48

My goals

By the end of this lesson, learners should be able to:

7.14.5.1 Control pests and diseases in the seedling nursery

Lesson summary

This lesson explains that controlling pests and diseases is very important in a seedling nursery.

Emphasize the importance of carrying out pest and disease control, as learners are in the nursery doing the activity.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 22.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 3.23 on page 48. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Controlling pests and diseases”.

Step 6 Instruct learners to read “Hardening” on page 49 to prepare for Lesson 24.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.23

Learners should complete the activity, demonstrating knowledge of controlling pests and diseases.

Suggested assessment

Identify common pests and diseases in a seedling nursery.

Learners should demonstrate knowledge of how to identify seedling nursery pests and diseases.

Lesson 24: Hardening

Number of periods: 1

Learner’s Book page 49

My goals

By the end of this lesson, learners should be able to:

7.14.6.1 Harden seedlings

Lesson summary

This lesson explains that it is important to harden seedlings before they are planted out in the field.

Describe the process of hardening, emphasizing that the process is different for different food crops. Prepare the materials required to carry out the lesson ahead of time and make sure that the seedlings are well prepared.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 23.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 3.24 on page 49. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Hardening”.

Step 6 Instruct learners to read “What are vegetables?” on page 51 to prepare for Lesson 25.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 3.24

Learners should complete the activity, demonstrating knowledge of hardening.

Suggested assessment

Demonstrate hardening of seedlings from an open-bed nursery.

Learners should demonstrate knowledge of hardening seedlings from an open bed nursery.

Chapter 4

Growing vegetable crops

23 periods

Unit 1

7.15 Why grow vegetable crops?

3 periods

This sub-strand should enable learners to acquire relevant knowledge and an understanding of what vegetable crops are in relation to their features and type.

General learning outcomes

By the end of this sub-strand, learners should:

7.15.1 Know vegetable crops (k)

7.15.2 Understand the different vegetable crops grown in the Solomon Islands

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

7.15.1.1 Define and describe the term “vegetable crops”

7.15.2.1 Classify vegetable crops

7.15.2.2 Identify examples of different vegetables

Lesson 1: What are vegetable crops?

Number of periods: 1

Learner's Book page 51–52

My goals

By the end of this lesson, learners should be able to:

7.15.1.1 Define and describe the term “vegetable crops”

Lesson summary

This lesson explains the term “vegetable crops” and what parts of plants are referred to as vegetables. The importance of including vegetable crops in our diet is emphasized. The lesson also gives some basic reasons for planting vegetable crops.

Briefly discuss that learners have learnt the first steps of growing food crops, and now they will learn about growing vegetables in the field. Introduce vegetables and give examples of the common vegetables found in the local area. Explain to the learners why they should eat vegetables.

Suggested teaching method

Step 1 Introduce and preview lesson.

Step 2 Instruct learners to read “What are vegetable crops?” on page 51. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text and explain some of the terms used.

Step 3 Instruct learners to do Activity 4.01 on page 52 in pairs or small groups. Instruct learners to give a presentation of their findings. Go through the activity with the learners and ensure that they have correctly answered the questions.

- Step 4** Summarize the lesson and activity with an emphasis on “What are vegetable crops?”
- Step 5** Instruct learners to read “Classifying vegetable crops” on page 52 and do Activity 4.02 questions 1, 2 and 4 of page 53 to prepare for Lesson 2.
- Step 6** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.01

- 1 Vegetables are the edible parts of plants.
- 2 Answers will vary depending on learners’ observations/experience.
- 3 Answers will vary depending on learners’ observations/experience. Learners will need to interpret the individual data obtained in relation to the different types of vegetable crops.
- 4 Answers will vary depending on learners’ observations/experience.
- 5 Vegetables contain nutrients which our bodies need and therefore people should be encouraged to plant and grow more vegetable crops in their area.

Suggested assessment

Find out what factors may hinder people around your home or school area from eating more vegetable crops.

Answers will vary depending on learners’ observations/experience.

Lesson 2: Classifying vegetable crops

Number of periods: 2

Learner’s Book pages 52–53

My goals

By the end of this lesson, learners should be able to:

- 7.15.2.1 Classify vegetable crops
- 7.15.2.2 Identify examples of different vegetables

Lesson summary

This lesson explains that vegetable crops can be classified according to the parts of the plant that are used. Examples of local and introduced vegetable crops are listed.

Explain that there are local vegetable crops growing in the Solomon Islands, which are not fully utilized in our diet. The learners need to know and identify these local vegetable crops. If available, see the “Live and Grow” resource book for additional information on local vegetable crops.

Suggested teaching method

- Step 1** Learners assemble at a designated practical site.
- Step 2** Review Lesson 1.
- Step 3** Introduce and preview lesson.
- Step 4** Instruct learners to work in pairs or small groups to do Activity 4.02 question 3 on page 53. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.
- Step 5** Summarize the lesson and activity with an emphasis on “Classifying vegetables”.
- Step 6** Instruct learners to read “Preparing planting beds” on page 54 and do Activity 4.03 on page 55 to prepare for Lesson 3.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.02

- 1 The six general categories of vegetable crops are: bulbous, cucurbit, fruit, leafy, legume and root vegetables.

- 2 Answers will vary depending on learners' observations/experience. Learners need to identify factors that affect vegetable crop production in their area.
- 3 Answers will vary. Sample answer:

Local or traditional vegetable crops	Introduced vegetable crops
pitpit	Chinese cabbage
fern	ball cabbage
taro leaves	bean
sandpaper leaves	onion
yellow leaves	tomato
betel nut flowers	lettuce

- 4 Answers will vary. Sample answer: most of the local vegetable crops can grow well and do not require additional input. Therefore, we should promote our local vegetable crops instead of growing those that will require additional effort to grow.

Suggested assessment

Collect and display examples of local and introduced vegetable crops.

Answers will vary depending on learners' observations/experience.

Unit 2

7.16 Preparing to grow vegetable crops

6 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in relation to starting, preparing and establishing a vegetable-crops farm.

General learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.16.1** Show skills in preparing planting beds for growing vegetable crops (s)
- 7.16.2** Show skills in using correct spacing when growing vegetable crops (s)
- 7.16.3** Show skills in transplanting vegetable-crop planting materials (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.16.1.1** Prepare soil for growing vegetable crops
- 7.16.2.1** Use correct planting space
- 7.16.3.1** Transplant vegetable-crop planting materials

Lesson 3: Preparing planting beds

Number of periods: 2

Learner's Book pages 54–55

My goals

By the end of this lesson, learners should be able to:

- 7.16.1.1** Prepare soil for growing vegetable crops

Lesson summary

After a farmer has completed planning and sowed seedlings in a nursery, the next step is to prepare soil and planting beds for growing vegetable crops. This lesson defines the term “planting beds” and explains the process of preparing a planting bed for growing vegetable crops. It shows the different types of planting beds and that the type of planting bed used depends on the type of soil.

Ensure that prior preparation, like allocation of plots and clearing of sites are in place before this practical lesson is carried out. Some schools will have difficulties carrying out Activity 4.04. In this case, carry out the activity by constructing planting beds using materials available, like timber or stones to build temporary beds filled with good soil mix.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 2.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 4.04 on page 55. While learners prepare planting beds, walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Preparing planting beds”.

Step 6 Instruct learners to read “Planting space” on page 55 and do Activity 4.05 question 1 on page 56 to prepare for Lesson 4.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.03

- 1 It is important to break up the soil because it will enable the plant roots to penetrate the soil easily. It will also increase the size and number of air spaces in the soil.
- 2 Planting beds include: raised beds, flat beds, ridges, sunken plots or mounds. Learners should draw pictures of each type of bed.
- 3 Answers will vary depending on learners’ observations/experience.

Activity 4.04

Learners should complete the activity, demonstrating knowledge of how to prepare planting beds.

Suggested assessment

Investigate how farmers around your home or school area prepare soil and planting beds for growing vegetable crops.

Answers will vary depending on learners’ observations/experience.

Lesson 4: Planting space

Number of periods: 2

Learner’s Book pages 55–56

My goals

By the end of this lesson, learners should be able to:

7.16.2.1 Use correct planting space

Lesson summary

This lesson explains the importance of correct spacing in growing vegetable crops. The correct spacing for the common vegetable crops is provided in the Learner’s Book. Learners need to know the importance and reasons for using correct planting space when growing vegetable crops.

Explain that incorrect spacing will have an impact on the production of crops in terms of growth and yield.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 3.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 4.05 questions 2, 3 and 4 on page 56. Walk around ensuring that each group is carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Planting space”.

Step 6 Instruct learners to read “Transplanting seedlings” on page 56 and 57 and do Activity 4.06 on page 58 to prepare for Lesson 5.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.05

1 It is important to plant vegetable crops using the correct amount of spacing to avoid plants competing for nutrients, sunlight, water and space to grow.

2–4 Answers will vary. Sample answer:

Crop type observed	Distance between plants	Distance between rows
Chinese cabbage	30 cm	60 cm
tomato	50 cm	100 cm
eggplant	50 cm	90 cm
saladeer	40 cm	70 cm

Suggested assessment

Take measurements of vegetable-crop planting spaces around your home.

Learners should demonstrate knowledge of how to take measurements of vegetable-crop planting spaces.

Lesson 5: Transplanting seedlings

Number of periods: 2

Learner's Book pages 56–58

My goals

By the end of this lesson, learners should be able to:

7.16.3.1 Transplant vegetable-crop planting materials.

Lesson summary

The lesson defines the term “transplanting” and outlines the factors that determine the correct time to transplant vegetables. It shows the correct process for transplanting vegetable crops.

Make prior preparation and ensure that some of the seedlings for transplanting are ready for Activity 4.07.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 4.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to carry out Activity 4.07 on page 58.

While the learners transplant seedlings on their allocated plots, walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Transplanting seedlings”.

Step 6 Instruct learners to read “Steps to care for vegetable crops” on page 58 to prepare for Lesson 6.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.06

- 1 Transplanting is moving seedlings raised in the nursery out into the farm or garden to allow them to grow and develop fully.
- 2 The factors that determine how and when we transplant seedlings include: the height of the seedlings, the time of day, the size of the seedling leaves, the prepared seed or planting beds.

Activity 4.07

Learners should complete the activity, demonstrating knowledge of how to transplant seedlings. Learners should carry out this activity according to steps outlined in the text.

Suggested assessment

Investigate how farmers around your home or school area transplant vegetable or crop planting materials.

Answers will vary depending on learners’ observations/experience.

Unit 3

7.17 Caring for vegetable crops

10 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in vegetable crop care and management.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.17.1 Know the steps to care for vegetable crops (k)
- 7.17.2 Show skills in watering vegetable crops (s)
- 7.17.3 Show skills in mulching vegetable crops (s)
- 7.17.4 Show skills in controlling weeds in vegetable crops (s)
- 7.17.5 Show skills in thinning out vegetable crops (s)
- 7.17.6 Show skills in staking and trellising vegetable crops (s)
- 7.17.7 Show skills in pruning vegetable crops (s)
- 7.17.8 Show skills in applying fertilizer to vegetable crops (s)
- 7.17.9 Show skills in controlling pests in vegetable crops (s)
- 7.17.10 Show skills in controlling diseases in vegetable crops (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.17.1.1 Identify steps to care for vegetable crops
- 7.17.2.1 Water vegetable crops
- 7.17.3.1 Provide mulch to vegetable crops
- 7.17.4.1 Control weeds in vegetable crops
- 7.17.5.1 Thin vegetable crops
- 7.17.6.1 Stake and trellis vegetable crops
- 7.17.7.1 Prune vegetable crops
- 7.17.8.1 Apply fertilizer to vegetable crops

7.17.9.1 Control pests in vegetable crops

7.17.10.1 Control diseases in vegetable crops

Lesson 6: Steps to care for vegetable crops

Number of periods: 1

Learner's Book page 58

My goals

By the end of this lesson, learners should be able to:

7.17.1.1 Identify steps to care for vegetable crops

Lesson summary

This lesson explores the many elements involved in caring for vegetable crops.

Emphasize that these things are important for any farmer to complete in order to grow healthier crops and produce high-yield vegetable crops.

This lesson involves taking learners on a guided tour of a farm to observe and try to identify caring practices that need to be carried out by the farmer. It is important to make prior arrangements with the farmer before learners visit their farm.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 5.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do the Additional activity below.

Give out sheets for learners to fill in. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on "Steps to care for vegetable crops".

Step 6 Instruct learners to read "Watering" on page 58 and do Activity 4.08 questions 1, 2, 3 and 4 on page 59 to prepare for Lesson 7.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Additional activity

Go on a guided tour of a farm and identify the caring practices that a farmer would need to do. Record your observations in the table below.

Caring practices that need to be carried out	Why do we need to carry out these practices?

Answers

Additional activity

Answers will vary. Sample answer:

Caring practices that need to be carried out	Why do we need to carry out these practices?
weeding	to remove unwanted plants from growing beside vegetable crops
mulching	to add organic matter to soil
watering	to supply water to vegetable crops
pruning	to remove the unwanted part of vegetable crops
controlling pests	to stop pests from damaging vegetable crops

Suggested assessment

Observe your school farm and identify caring practices that need to be carried out.

Answers will vary depending on learners' observations/experience.

Lesson 7: Watering

Number of periods: 1

Learner's Book pages 58–59

My goals

By the end of this lesson, learners should be able to:

7.17.2.1 Water vegetable crops

Lesson summary

The lesson emphasizes the importance of watering. It outlines several sources of water for vegetable crops and also shows ways that vegetable crops can receive water.

Explain why plants need water and define the term “wilting” and how it occurs in plants.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 6.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 4.08 question 5 on page 59. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Watering”.

Step 6 Instruct learners to read “Mulching” on page 60 to prepare for Lesson 8.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.08

1 Possible sources of water for vegetable crops include a well, tanks, streams, creeks and rivers.

2 Some methods of supplying water to crops include hose, sprinkler, watering can and flood irrigation.

3 Answers will vary depending on learners' observations/experience.

4–5 Learners should complete the activities, demonstrating knowledge of watering.

Suggested assessment

Construct a simple storage facility for storing water.

Learners should demonstrate knowledge of how to construct a simple water-storage facility.

Lesson 8: Mulching

Number of periods: 1

Learner's Book page 60

My goals

By the end of this lesson, learners should be able to:

7.17.3.1 Provide mulch to vegetable crops

Lesson summary

This lesson explains the term “mulching” and points out why it is important.

Introduce learners to different types of mulching materials that can be used for vegetable crops.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 7.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 4.09 on page 60.

Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Mulching”.

Step 6 Instruct learners to read “Weeding” on page 60 and do Activity 4.10 on page 61 to prepare for Lesson 9.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.09

1 Learners identify and collect examples of different materials for mulching, such as dried grass, dried leaves, rotting sticks and rotting coconut husks.

2 Learners should complete the activity, demonstrating knowledge of mulching.

Suggested assessment

Construct a composting structure using appropriate materials.

Learners should demonstrate knowledge of how to construct a composting structure.

Lesson 9: Weeding

Number of periods: 1

Learner's Book pages 60–61

My goals

By the end of this lesson, learners should be able to:

7.17.4.1 Control weeds in vegetable crops

Lesson summary

This lesson explains that weeding is an important practice when caring for vegetable crops.

Explain that any unwanted plants growing in vegetable crop plots are referred to as weeds. Emphasize why we need to get rid of weeds. Outline methods for weeding.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 8.

Step 3 Introduce and preview lesson.

- Step 4** Instruct learners to work in pairs or small groups to do Activity 4.11 on page 61. Walk around to ensure that the learners are carrying out the activity correctly.
- Step 5** Summarize the lesson and activity with an emphasis on “Weeding”.
- Step 6** Instruct learners to read “Thinning out” on page 61 and do Activity 4.12 on page 62 to prepare for Lesson 10.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.10

- 1 A weed is an unwanted plant growing in a farm or garden.
- 2 Weeds need to be controlled because they will take up all the nutrients, light and water necessary for vegetable crops to grow.

Activity 4.11

- 1 Learners identify and collect examples of weeds growing on their vegetable plots. These may include mile-a-minute, t-grass, and devil’s fig.
- 2 Learners should complete the activity, demonstrating a suitable weed-control method.

Suggested assessment

Demonstrate weed-control measures using other methods apart from the ones mentioned in the text.

Learners should demonstrate knowledge of various methods of weed control.

Lesson 10: Thinning out

Number of periods: 1

Learner’s Book pages 61–62

My goals

By the end of this lesson, learners should be able to:

7.17.5.1 Thin vegetable crops

Lesson summary

This lesson explains the term “thinning out” in relation to growing vegetable crops. It explains the concept of thinning out and why it is carried out. The timing of thinning out is emphasized.

Suggested teaching method

- Step 1** Learners assemble at a designated practical site.
- Step 2** Review Lesson 9.
- Step 3** Introduce and preview lesson.
- Step 4** Instruct learners to work in pairs or small groups to do Activity 4.13 on page 62. Walk around to ensure that the learners are carrying out the activity correctly.
- Step 5** Summarize the lesson and activity with an emphasis on “Thinning out”.
- Step 6** Instruct learners to read “Staking and trellising” and do Activity 4.14 and Activity 4.15 question 3 on page 63 to prepare for Lesson 11.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.12

- 1 Thinning out is the process of removing extra seedlings from the plant bed.
- 2 Thinning out is necessary to enable the remaining plants to grow strong.
- 3 Thinning should be carried out as early as possible when the roots of the plant are still small.

Activity 4.13

Learners should complete the activity, demonstrating knowledge of how to thin out crops.

Suggested assessment

Thin seedlings at the seedling nursery.

Learners should demonstrate knowledge of thinning seedlings.

Lesson 11: Staking and trellising

Number of periods: 1

Learner's Book pages 62–63

My goals

By the end of this lesson, learners should be able to:

7.17.6.1 Stake and trellis vegetable crops

Lesson summary

This lesson explains the terms “staking” and “trellising”. It also explains why these practices are important in vegetable crop production. The different types of trellises are illustrated.

Explain that some plants have weak stems and one way to support them is through staking.

Explain that other vegetable crops, which are climbers, are supported by erecting a structure called a trellis.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 10.

Step 3 Introduce and preview the lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 4.15 questions 1 and 2 on page 63. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Staking and trellising”.

Step 6 Instruct learners to read “Pruning” on page 63 and do Activity 4.16 and Activity 4.17 question 4 on page 64 to prepare for Lesson 12.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.14

1 Some plants have **weak** stems that must be **supported** as the plant grows. This is called **staking**.

Any **structure** built to support a **vine** or climbing plant is called a **trellis**.

2 a Staking is when you put a pole or a stick into the soil near a plant to support it as it grows.

b A trellis is any structure built to support a vine or climbing plant.

Activity 4.15

1 Answers will vary depending on learners' observations/experience.

2 Learners should complete the activity, demonstrating knowledge of how to build a trellis.

3 The best time to stake plants is when they are young and still growing.

Suggested assessment

Construct stakes and trellis structures for vegetable crops.

Learners should demonstrate knowledge of how to construct stake and trellis structures for vegetable crops.

Lesson 12: Pruning

Number of periods: 1

Learner's Book pages 63–64

My goals

By the end of this lesson, learners should be able to:

7.17.7.1 Prune vegetable crops

Lesson summary

This lesson describes the term “pruning” and explains that some vegetable crops must be pruned. The lesson discusses the importance of pruning.

Explain to the learners that some plants produce many branches that do not bear fruit and must be removed. Discuss that pruning must be carried out using the right tools.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 11.

Step 3 Introduce and preview the lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 4.17 questions 1, 2 and 3 on page 64. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Pruning”.

Step 6 Instruct learners to read “Applying fertilizer” on page 64 and do Activity 4.18 on page 65 to prepare for Lesson 13

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.16

- 1 Pruning is the removal of plant parts to improve or control plant growth and fruit size.
- 2 Learners should include three of the following: to improve plant growth, to control plant growth, to help the plant support the weight of the fruit, to remove any part of the plant that is infected by disease, to keep the plant healthy and maintain its life span.

Activity 4.17

- 1–3 Learners should complete the activities, demonstrating knowledge of pruning.
- 4 Use of a sharp, clean instrument is important to avoid the plant getting infected.

Suggested assessment

Observe and identify vegetable crops that require pruning.

Learners should demonstrate knowledge of how to observe and identify crops that require pruning.

Lesson 13: Applying fertilizer

Number of periods: 1

Learner's Book pages 64–65

My goals

By the end of this lesson, learners should be able to:

7.17.8.1 Apply fertilizer to vegetable crops

Lesson summary

This lesson explains the term “nutrients” in soil. It explains that the materials that supply nutrients to soil are called fertilizers. The lesson shows the two types of fertilizers: organic and inorganic. It emphasizes the importance of applying fertilizers with the correct timing, placement and quantity.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 12.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 4.19 on page 65.
Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Applying fertilizer”.

Step 6 Instruct learners to read “Controlling pests” on page 66 and do Activity 4.20 questions 1 and 2 on page 67 to prepare for Lesson 14.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.18

1 Plants need plant **food** or **nutrients** in the **soil** in order to **grow**.

2 The two main types of fertilizers are organic fertilizers, which are made of materials that originally came from plants and animals, and inorganic fertilizers, which are made by people.

3 Fertilizers should be applied to plants at the correct time, in the correct place, and in the correct amount.

Activity 4.19

Learners should observe as you demonstrate how to apply fertilizers. Learners should demonstrate knowledge of applying fertilizer to vegetable crops.

Suggested assessment

Calculate the amount of fertilizer required for a given plot of vegetable crops.

Learners should demonstrate knowledge of fertilizing vegetable crops.

Lesson 14: Controlling pests

Number of periods: 1

Learner's Book pages 66–67

My goals

By the end of this lesson, learners should be able to:

7.17.9.1 Control pests in vegetable crops.

Lesson summary

This lesson points out that as vegetable crops grow, they will be attacked by pests. Some examples of common vegetable pests are provided. The methods that can be used to control pests are listed.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 13.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 4.20 questions 3 and 4 on page 67. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Controlling pests”.

Step 6 Instruct learners to read “Controlling diseases” on page 67 and do Activity 4.21 questions 1 and 2 on page 68 to prepare for Lesson 15.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.20

- 1 **a** Pests are living things that eat or damage plants or plant parts.
- b** Pest control is keeping pests away from crops.
- 2
 - Chemical control: using chemicals to control pests
 - Biological control: using other plants and animals to control pests
 - Mechanical control: using traps or other mechanical devices to control pests
 - Cultural (manual) control: removing pests manually
 - PDP: using a collection of materials derived from plants or other sources to control pests
- 3–4 Learners should complete the activity, demonstrating knowledge of how to control pests using one of the methods learnt.

Suggested assessment

Identify one common vegetable-crop pest and describe how it causes damage.

Learners should demonstrate knowledge of identifying vegetable-crop pests and describing how pests cause damage.

Lesson 15: Controlling diseases

Number of periods: 1

Learner's Book pages 67–68

My goals

By the end of this lesson, learners should be able to:

7.17.10.1 Control diseases in vegetable crops

Lesson summary

This lesson defines the term “pathogens”. It points out that as vegetable crops grow, they will be attacked by pathogens. Some examples of common vegetable-crop pathogens are provided. The methods that can be used to control pests are listed.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 14.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 4.21 question 3 on page 68. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Controlling diseases”.

Step 6 Instruct learners to read “Harvesting vegetable crops” on page 68 and do Activity 4.22 question 3 on page 69 to prepare for Lesson 16.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.21

- 1 Besides pests, there are other **organisms** (some so small that we cannot see them with our eyes) that **cause** diseases in **vegetable** crops. These organisms are called **pathogens**.
- 2 Learners should include two of the following: bacteria, fungi, viruses, nematodes.
- 3 Learners should complete the activity, demonstrating that they can identify signs of disease.

Suggested assessment

Identify one common vegetable crop disease and describe how it causes damage.

Answers will vary depending on learners' observations/experience.

Unit 4

7.18 Harvesting, preparing, and selling

4 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in vegetable crop harvesting, preparation and selling.

General learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.18.1** Show skills in harvesting vegetable crops (s)
- 7.18.2** Show skills in preparing and selling vegetable crops (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.18.1.1** Identify features that indicate vegetable crops are ready for harvest
- 7.18.1.2** Harvest vegetable crops correctly
- 7.18.2.1** Prepare and sell vegetable crops

Lesson 16: Harvesting vegetable crops

Number of periods: 2

Learner's Book pages 68–69

My goals

By the end of this lesson, learners should be able to:

- 7.18.1.1** Identify features that indicate vegetable crops are ready for harvest
- 7.18.1.2** Harvest vegetable crops correctly

Lesson summary

This lesson explains that everybody involved in growing vegetable crops looks forward to the harvest.

Point out that every vegetable crop has a different harvesting time and it is important that farmers know the best time to harvest their crops. Emphasize that harvesting methods are different for different vegetable crops. Discuss factors that may influence harvesting.

Suggested teaching method

Step 1 Review Lesson 15.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to work in pairs or small groups to do Activity 4.22 questions 1, 2 and 4 on page 69. Give learners the opportunity to present their findings. While they are doing the activity, walk around to assist learners having difficulty. Go through the activity with the learners to ensure they have correctly answered the questions.

Step 4 Summarize the lesson and activity with an emphasis on “Harvesting vegetable crops”.

Step 5 Instruct learners to read “Preparing and selling vegetable crops” and do Activity 4.23 questions 1 and 2 on page 69 to prepare for Lesson 17.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.22

- 1 Every vegetable crop has a different **harvesting time**. It is important that **farmers** know the **best** time to **harvest** their vegetable crops.
- 2 The factors that determine the correct time to harvest vegetable crops include: plant color, plant size, the number of young leaves on the plant, the maturity stage of fruit, cobs and pods on the plant and the maturity stage of the stalks and roots of the plant.
- 3 Answers will vary depending on learners' observations/experience, but may include:

Crop	Not ready for harvest	Ready for harvest	Too late for harvest
tomato	fruit is green	fruit is yellow or red	fruit is reddish and soft
eggplant	fruit is small	fruit is big	fruit is yellowish
bean	fruit is small	fruit is big	fruit is becoming dry

- 4 Answers will vary depending on learners' observations/experience.

Suggested assessment

Harvest some vegetable crops that are ready.

Learners should demonstrate knowledge of harvesting crops.

Lesson 17: Preparing and selling vegetable crops

Number of periods: 2

Learner's Book pages 69–70

My goals

By the end of this lesson, learners should be able to:

- 7.18.2.1 Prepare and sell vegetable crops

Lesson summary

This lesson emphasizes that if a farmer intends to sell crops, they must be well prepared.

A case study of a vegetable-crop farmer is used to explain the importance of preparing and selling vegetable crops.

This is a practical lesson and learners will need to observe the quality and display of vegetable crops.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 16.

Step 3 Introduce and preview the lesson.

Step 4 Accompany learners on a guided tour of a market.

Step 5 Learners work in pairs or small groups to do Activity 4.23 questions 3 and 4 on page 69. Walk around to ensure learners are carrying out the activity properly.

Step 6 Summarize the lesson and activity with an emphasis on “Preparing and selling vegetable crops”.

Step 7 Instruct learners to read “What is a plantation” on pages 72 and 73 and do Activity 5.01 question 1 on page 73 to prepare for Lesson 1, Chapter 5.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 4.23

- 1 The main reason Lanir was successful in producing and selling vegetable crops was his focus on customer satisfaction by growing and selling the freshest vegetables.

- 2 To achieve customer satisfaction and maintain vegetable quality, a farmer should:
- wash, dry and store vegetables properly
 - trim vegetables to remove plant parts that are old, diseased or full of holes
 - grade and group vegetables according to size, shape, color and quality
 - place leafy or stem vegetables in bunches
 - put soft vegetables in strong baskets or containers to avoid bruising or damage
 - take care of vegetables to avoid damage while transporting them
 - display vegetables at the market in an orderly manner
 - display vegetables so that prices are easy to see
- 3–4 Answers will vary depending on learners' observations/experience.

Suggested assessment

Prepare and display one vegetable crop ready to sell.

Learners should demonstrate knowledge of preparing and displaying vegetable crops for sale.

Chapter 5

Introduction to plantation crops

24 periods

Unit 1

7.19 Plantation agriculture in the Solomon Islands

4 periods

This sub-strand should enable learners to acquire relevant knowledge and an understanding of plantation agriculture concepts and practices.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.19.1** Know what a plantation is (k)
7.19.2 Understand the development of plantation agriculture in the Solomon Islands (u)
7.19.3 Understand the benefits of plantation agriculture (u)
7.19.4 Appreciate the contribution of smallholdings in plantation agriculture (a)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.19.1.1** Describe the term “plantation”
7.19.2.1 Explain the development of plantation agriculture in the Solomon Islands
7.19.3.1 Explain the benefits of plantation agriculture
7.19.4.1 Explain the term “smallholdings”
7.19.4.2 Outline the contributions of smallholdings in plantation agriculture

Lesson 1: What is a plantation?

Number of periods: 1

Learner's Book pages 72–73

My goals

By the end of this lesson, learners should be able to:

7.19.1.1 Describe the term “plantation”

Lesson summary

This lesson defines the term “plantation agriculture” in the context of the Solomon Islands.

Explain that in English, the term “plantation” describes a large commercial farm where the same types of crops are grown, but in the Solomon Islands, it describes a small area of tree crops such as coconuts, banana or cocoa.

Suggested teaching method

Step 1 Learners assemble at a designated practical site. Introduce and preview lesson.

Step 2 Accompany learners on a guided tour to observe examples of plantation crops.

Step 3 Instruct learners to do Activity 5.01 on page 73. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 4 Summarize the lesson and activity with an emphasis on “What is a plantation?”.

Step 5 Instruct learners to read “Development of plantation agriculture” on page 73 to prepare for Lesson 2.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.01

1 A plantation is a **large** area of land that is owned **privately** or owned by the **government**.

2 Answers will vary. Learners should demonstrate understanding of what a plantation is and be able to identify examples of plantation agriculture. It is also important for learners to identify the owners of these plantations. Learners should be able to identify the types of crops grown and discuss whether the plantation is being used productively.

Suggested assessment

Identify examples of big plantations in the Solomon Islands.

Answers will vary depending on learners' observation/experience.

Lesson 2: Development of plantation agriculture

Number of periods: 1

Learner's Book page 73

My goals

By the end of this lesson, learners should be able to:

7.19.2.1 Explain the development of plantation agriculture in the Solomon Islands

Lesson summary

This lesson provides the history of plantation agriculture in the Solomon Islands. It explains who established plantation agriculture and the purpose for establishing plantations in the Solomon Islands.

Suggested teaching method

Step 1 Review Lesson 1.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to reread “Development of plantation agriculture” on page 73. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to work in pairs or small groups to do Activity 5.02 on page 73. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Development of plantation agriculture”.

Step 6 Instruct learners to read “Benefits of plantation agriculture” on page 74 to prepare for Lesson 3.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.02

- 1 One of the main goals of early plantation **agriculture** was to produce raw **material** to use to feed various **industries** in foreign countries.
- 2 Plantation agriculture was first introduced in the Solomon Islands by traders, missionaries and big companies. One of the main goals was to produce raw materials to use to feed various industries in foreign countries.

Suggested assessment

Research and find examples of raw materials produced by early plantations in the Solomon Islands. Answers will vary. Sample answers: copra, coconut oil, sugar, timber.

Lesson 3: Benefits of plantation agriculture

Number of periods: 1

Learner's Book page 74

My goals

By the end of this lesson, learners should be able to:

7.19.3.1 Explain the benefits of plantation agriculture

Lesson summary

This lesson explains that plantation agriculture is an example of commercial agriculture in the Solomon Islands. The benefits that Solomon Islanders obtain from plantation agriculture are discussed.

Suggested teaching method

Step 1 Review Lesson 2.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Benefits of plantation agriculture” on page 74. While they read, walk around to see if any learners are having difficulty. Explain and clarify text.

Step 4 Instruct learners to work in pairs or small groups to do Activity 5.03 on page 74. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

- Step 5** Summarize the lesson and activity with an emphasis on “Benefits of plantation agriculture”.
- Step 6** Instruct learners to read “Smallholdings” on page 74 and the case study on page 75 to prepare for Lesson 4.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.03

- 1 Plantation agriculture is an example of **commercial** agriculture. The purpose of plantation agriculture is to **sell** the products or **crops** grown in the **plantation** for a profit.
- 2 Benefits of plantation agriculture include that it is: a source of income and employment, a means of earning foreign currency, an additional source of tax revenue for the government.
- 3 By selling cocoa and copra, a farmer will receive money that can be used to purchase other products. The country earns revenue for the government.

Suggested assessment

Investigate additional benefits to be obtained from plantation agriculture.

Answers will vary depending on learners’ observations/experience.

Lesson 4: Smallholdings

Number of periods: 1

Learner’s Book pages 74–75

My goals

By the end of this lesson, learners should be able to:

- 7.19.4.1 Explain the term “smallholdings”
- 7.19.4.2 Share the contributions of smallholdings in plantation agriculture

Lesson summary

This lesson explains the concept of smallholdings as a plantation in the Solomon Islands.

The concept is reinforced using a case study.

Suggested teaching method

- Step 1** Review Lesson 3.
- Step 2** Introduce and preview lesson.
- Step 3** Instruct learners to read “Smallholdings” on page 74 and the Case study on page 75. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.
- Step 4** Instruct learners to work in pairs or small groups to do Activity 5.04 on page 74. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.
- Step 5** Summarize the lesson and activity with an emphasis on “Smallholdings”.
- Step 6** Instruct learners to read “Classifying plantation crops” on page 76 to prepare for Lesson 5.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.04

- 1 It is hard work, there are risks involved, you have people above you who are your bosses, you are disciplined.
- 2 A smallholder is a farmer growing commercial crop on a small scale or plantation.

- 3 The benefits of growing commercial crops on a small scale include: crops are easy to look after, income generated belongs to the farmer, it does not harm the environment.
- 4 Answers will vary depending on learners' observations/experience.
- 5 Answers will vary depending on learners' observations/experience. Some schools may own a small-scale cocoa or coconut plantation, which is beneficial in terms of income-generation for the school.

Suggested assessment

Investigate the contribution of small holders towards agriculture production around your home or school area.

Answers will vary depending on learners' observations/experience.

Unit 2

7.20 Crops grown in the plantation

4 periods

This sub-strand should enable learners to acquire relevant knowledge and an understanding of the different types of plantation crops grown in the Solomon Islands.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.20.1 Understand plantation crops (u)
- 7.20.2 Appreciate the different plantation crops grown (a)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.20.1.1 Explain the term "plantation crop"
- 7.20.1.2 Classify plantation crops
- 7.20.2.1 Study the different plantation crops grown in the Solomon Islands

Lesson 5: Classifying plantation crops

Number of periods: 2

Learner's Book page 76

My goals

By the end of this lesson, learners should be able to:

- 7.20.1.1 Explain the term "plantation crop"
- 7.20.1.2 Classify plantation crops

Lesson summary

This lesson explains the term "plantation crop". Different types of plantation crops are grouped.

Emphasize that plantation crops are referred to as "cash crops" because farmers grow them to sell for money.

Suggested teaching method

Step 1 Review Lesson 4.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read "Classifying plantation crops" on page 76. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

- Step 4** Instruct learners to work in pairs or small groups to do Activity 5.05 on page 76. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.
- Step 5** Summarize the lesson and activity with an emphasis on “Classifying plantation crops”.
- Step 6** Instruct learners to study the pictures on page 77 to prepare for Lesson 6.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.05

- 1 The term “plantation crop” is used to describe **perennial**, or **permanent** crops that are grown in **plantations**.
- 2 The six main groups of plantation crops are:
 - fruits and nuts—plants that produce fruits and nuts that people eat
 - oil plants—plants that can produce oil for people to use
 - beverage plants—plants that can produce flavored drinks
 - stimulant plants—plants with juice that people chew or drink to make them happy or relaxed
 - spice plants—plants that can be used to add flavor to food
 - vegetation (forest trees and ornamental plants)—plants that can be used to produce timbers or to decorate the landscape.
- 3 Answers will vary depending on learners’ observations/experience.

Suggested assessment

Outline potential products that can be obtained from one plantation crop growing around your home or school area.

Answers will vary depending on learners’ observations/experience.

Lesson 6: Examples of different plantation crops

Number of periods: 2

Learner’s Book page 77

My goals

By the end of this lesson, learners should be able to:

7.20.2.1 Study the different plantation crops grown in the Solomon Islands

Lesson summary

This lesson displays pictorial examples of some plantation crops that are growing in the Solomon Islands.

Emphasize that learners should recognise different plantation crops and the benefits associated with each crop growing around their home or school area.

Suggested teaching method

- Step 1** Learners assemble at a designated practical site.
- Step 2** Review Lesson 5.
- Step 3** Introduce and preview lesson.
- Step 4** Accompany the learners on a guided tour around the school to identify examples of plantation crops.
- Step 5** Instruct learners to work in pairs or small groups to do Activity 5.06 on page 76. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 6 Summarize the lesson and activity with an emphasis on “Examples of different plantation crops”.

Step 7 Instruct learners to read “Planning to grow plantation crops” on page 78 to prepare for Lesson 7.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.06

Learners should complete the activity, demonstrating knowledge of plantation crops.

Suggested assessment

Group plantation crops according to local and introduced crops.

Answers will vary depending on learners' observations/experience.

Unit 3

7.21 Preparing to grow plantation crops

8 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills for planning and preparing farm resources that are necessary to grow plantation crops.

General learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.21.1** Show skills in planning to grow plantation crops (s)
- 7.21.2** Show skills in choosing a suitable site for growing plantation crops (s)
- 7.21.3** Show skills in choosing suitable plantation crops to grow (s)
- 7.21.4** Show skills in preparing site for growing plantation crops (s)
- 7.21.5** Show skills in selecting plantation-crop planting materials (s)
- 7.21.6** Show skills in using different planting layouts to grow plantation crops

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.21.1.1** Plan to grow plantation crops
- 7.21.2.1** Choose a suitable site
- 7.21.3.1** Choose a plantation crop to grow
- 7.21.4.1** Prepare a site for growing plantation crops
- 7.21.5.1** Select plantation-crop planting materials
- 7.21.6.1** Use different planting layouts to grow plantation crops

Lesson 7: Planning to grow plantation crops

Number of periods: 1

Learner's Book page 78

My goals

By the end of this lesson, learners should be able to:

- 7.21.1.1** Plan to grow plantation crops

Lesson summary

This lesson outlines the reasons why planning is necessary when growing plantation crops. The lesson emphasizes that knowledge of crops is important. It explores the factors that a farmer must consider when planning to grow plantation crops.

Suggested teaching method

Step 1 Review Lesson 6.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Planning to grow plantation crops” on page 78. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to work in pairs or small groups to do Activity 5.07 page 78. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Planning to grow plantation crops”.

Step 6 Instruct learners to read “Choosing a plantation crop to grow” on page 79 to prepare for Lesson 8.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.07

- 1 Planning is **necessary** because it helps the farmer complete **important** tasks.
- 2 Planning helps a farmer to: make meaningful aims or goals, identify the tasks that must be completed to achieve these aims or goals, decide the right tools and methods to carry out the tasks, decide the wisest ways to use time and resources, and outline a work program.
- 3 Learners should include five of the following. A farmer must: select a nursery site, decide on a suitable type of nursery, select good planting materials, select a suitable farm or garden site, decide on a suitable plantation layout, decide on a suitable method of farming, prepare the site correctly, use the correct tools and equipment.
- 4 Answers will vary depending on learners’ observations/experience. Learners should observe that there are possibilities for people to increase plantation crop production in their area. This will depend on a number of factors like size of area, market demand, market outlets and willingness of an individual farmer to engage in plantation crop production.

Suggested assessment

Draw up a simple plan showing how you would grow a plantation crop.

Answers will vary depending on learners’ observations/experience.

Lesson 8: Choosing a plantation crop to grow

Number of periods: 1

Learner’s Book page 79

My goals

By the end of this lesson, learners should be able to:

7.21.3.1 Choose a plantation crop to grow

Lesson summary

The lesson explains that different plantation crops have different needs in order to grow well. Some of the requirements to consider when growing plantation crops are outlined.

Emphasize that information about the selected site will inform which plantation crop will best grow there.

Suggested teaching method

Step 1 Review Lesson 7.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to read “Choosing a plantation crop to grow” on page 79. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to work in pairs or small groups to do Activity 5.08 on page 79. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Choosing a plantation crop to grow”.

Step 6 Instruct the learners to read “Choosing a suitable site” on page 79 and do Activity 5.09 questions 1 and 3 on page 80 to prepare for Lesson 9.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.08

1 If the farmer has a **site** to use to grow plantation crops, they should find out **information** about the site, including the soil **type**, the amount of rainfall, and the amount of **sunlight** the area gets.

2 Answers will vary. Sample answer: a farmer may choose to grow plantation crops because it will bring income.

Suggested assessment

Investigate how a farmer around your home or school area chooses which plantation crops to grow.

Answers will vary depending on learners' observations/experience.

Lesson 9: Choosing a suitable site

Number of periods: 1

Learner's Book page 79-80

My goals

By the end of this lesson, learners should be able to:

7.21.2.1 Choose a suitable site

Lesson summary

This lesson explains the importance of choosing a suitable site for growing plantation crops. Factors to consider when choosing a site are outlined. It explains that we must understand the requirements of the different plantation crops.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 8.

Step 3 Introduce and preview lesson.

Step 4 Accompany the learners on a guided tour around their school or home area. Allow them to identify areas that are suitable for growing plantation crops.

Step 5 Instruct learners to work in pairs or small groups to do Activity 5.09 question 2 on page 80. Walk around to ensure that the learners are carrying out the activity correctly.

- Step 6** Summarize the lesson and activity with an emphasis on “Choosing a suitable site”.
- Step 7** Instruct learners to read “Preparing a site” and do Activity 5.10 question 1 on page 80 to prepare for Lesson 10.
- Step 8** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.09

- 1 Different plantation crops have different **needs** to grow **well**.
- 2 A farmer must consider: type of soil, amount of rainfall, amount of sunlight, temperature, planting space and crop nutrient needs.
- 3 Answers will vary depending on learners’ observations/experience.

Suggested assessment

Investigate how a farmer around your home or school area would select a site for growing plantation crops.

Answers will vary depending on learners’ observations/experience.

Lesson 10: Preparing a site

Number of periods: 2

Learner’s Book page 80

My goals

By the end of this lesson, learners should be able to:

- 7.21.4.1 Prepare a site for growing plantation crops

Lesson summary

This lesson explains the importance of clearing a site prior to growing plantation crops. The main activities involved in preparing a site are identified.

Explain that if a farmer chooses a site and a crop, the next step is to prepare the site for planting. Outline the different activities involved in site preparation. Point out that farmers must be discouraged from burning the bush while clearing a site.

Suggested teaching method

- Step 1** Learners assemble at a designated practical site.
- Step 2** Review Lesson 9.
- Step 3** Introduce and preview lesson.
- Step 4** Instruct learners to work in pairs or small groups to do Activity 5.10 question 2 on page 80. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.
- Step 5** Summarize the lesson and activity with an emphasis on “Preparing a site”.
- Step 6** Instruct learners to read “Selecting good planting materials” on page 80 and to do Activity 5.11 question 1 on page 81 to prepare for Lesson 11.

Answers

Activity 5.10

- 1 Clearing and preparing the land usually involves cutting down forest or bushes and clearing the debris by burning.
- 2 Learners should complete the activity, demonstrating knowledge of how to prepare a site.

Suggested assessment

Observe how farmers around your home or school area prepare a site for growing plantation crops.

Answers will vary depending on learners’ observations/experience.

Lesson 11: Selecting good planting materials

Number of periods: 2

Learner's Book pages 80–81

My goals

By the end of this lesson, learners should be able to:

7.21.5.1 Select plantation-crop planting materials

Lesson summary

This lesson introduces the concept of selecting good planting materials. Factors that must be considered to select good planting materials are outlined.

Make sure you prepare for this lesson, and provide the resources needed.

Suggested teaching method

Step 1 Review Lesson 10.

Step 2 Introduce and preview lesson.

Step 3 Accompany the learners on a guided tour to select planting materials, from the school nursery or area around the school, to plant in their plots.

Step 4 Instruct learners to work in pairs or small groups to do Activity 5.11, questions 2, 3 and 4 on page 81. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Selecting good planting materials”.

Step 6 Instruct learners to read “Planting layout” on page 81 and do Activity 5.12 on page 82 to prepare for Lesson 12.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.11

- 1** To have a **strong** and healthy seedling, the farmer must **start** with good seeds or **planting** materials.
- 2** Learners should include four of the following characteristics: produce a high yield, mature early, are healthy, are resistant to pests and diseases, germinate early and are adapted to the local environment.
- 3** Answers will vary. Sample answer:

Crops	How crop is grown
1 coconut	seedlings
2 cocoa	seedlings, cuttings
3 oil palm	seedlings
4 eucalyptus	seedlings

- 4** Learners should complete the activity, demonstrating knowledge of how to select good planting materials.

Suggested assessment

Investigate and report how farmers around your home or school area select planting materials.

Answers will vary depending on learners' observations/experience.

Lesson 12: Planting layout

Number of periods: 1

Learner's Book pages 81–82

My goals

By the end of this lesson, learners should be able to:

7.21.6.1 Use different planting layouts to grow plantation crops

Lesson summary

This lesson introduces learners to the different planting layouts that can be used for plantation crops.

Define the term “layout” and point out that factors that will determine what layout a farmer may use to plant include: the type of plantation crops grown, soil types and site selected.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 11.

Step 3 Introduce and preview lesson.

Step 4 Demonstrate how to use the different planting layouts.

Step 5 Instructs learners to work in pairs or small groups to do Activity 5.13 on page 82.
Walk around to ensure that the learners are carrying out the activity correctly.

Step 6 Summarize the lesson and activity with an emphasis on “Planting layout”.

Step 7 Instruct learners to read “Choosing a nursery site” on page 82 and do Activity 5.14 question 1 on page 83 to prepare for Lesson 13.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.12

1 Layout is the way crops are arranged during planting.

2 The different crop layouts include: square layout, rectangular layout, triangular layout, single row layout and double row layout.

Activity 5.13

Learners should complete the activity, demonstrating knowledge of different crop layouts.

Suggested assessment

Calculate the number of coconut seedlings required for one hectare of land, using a square planting layout and a spacing of 9 m × 9 m.

Learners should demonstrate knowledge of how to calculate the number of seedlings required for a given layout.

Unit 4

7.22 Seedling nurseries

8 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in starting and managing a seedling nursery.

General learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.22.1** Show skills in choosing a suitable nursery site (s)
- 7.22.2** Show skills in preparing soil mix for a nursery (s)
- 7.22.3** Show skills in caring for seedlings (s)
- 7.22.4** Show skills in hardening of seedlings (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.22.1.1** Choose a suitable nursery site
- 7.22.2.1** Prepare a good soil mix for a nursery
- 7.22.3.1** Care for seedlings
- 7.22.4.1** Harden seedlings

Lesson 13: Choosing a nursery site

Number of periods: 2

Learner's Book pages 82–83

My goals

By the end of this lesson, learners should be able to:

- 7.22.1.1** Choose a suitable nursery site

Lesson summary

This lesson explains that having a nursery is part of growing healthy plants in plantation farming. It explains the importance of choosing a good site for a nursery and outlines factors to consider when choosing a site.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 12.

Step 3 Introduce and preview lesson.

Step 4 Accompany the learners on a guided tour around the school area to identify a good site for a plantation crop nursery.

Step 5 Instruct learners to work in pairs or small groups to do Activity 5.14 questions 2 and 3 on page 83. Walk around to ensure that the learners are carrying out the activity correctly.

Step 6 Summarize the lesson and activity with an emphasis on “Choosing a nursery site”.

Step 7 Instruct learners to read “Preparing a soil mix” and do Activity 5.15 questions 1 and 2 on page 83 to prepare for Lesson 14.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.14

- 1 A farmer should consider: availability of water (near a water source such as well or stream), that it is close to the plantation site, that it is on a flat area or area with level ground and that it is in a flood-free area.
- 2–3 Learners should complete the activity, demonstrating knowledge of how to choose a nursery site and construct a nursery.

Suggested assessment

Construct a plantation crop nursery using available resources.

Learners should demonstrate knowledge of how to construct a nursery for plantation crops.

Lesson 14: Preparing a soil mix

Number of periods: 2

Learner's Book page 83-84

My goals

By the end of this lesson, learners should be able to:

- 7.22.2.1 Prepare a good soil mix for a nursery

Lesson summary

This lesson explains the importance of a good soil mix for a nursery. The use of different soil types as well as the use of polythene bags for plantation crops are outlined.

Prepare the resources required before the lesson to enable learners to carry out the practical tasks.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 13.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 5.15 questions 3 and 4 on page 83. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Preparing a soil mix”.

Step 6 Instruct learners to read “Caring for the seedlings” on page 84 to prepare for Lesson 15.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.15

- 1 It is **necessary** to prepare a good **soil** mix if we want our **seedlings** to grow healthy in the **nursery**.
- 2 A good soil mix consists of loamy or sandy soil mixed with clay, or other soils that are well-drained and contain organic matter.
- 3 Learners should complete the activity, demonstrating knowledge of preparing a good soil mix.
- 4 Learners should complete the activity, demonstrating knowledge of how to sow seeds and cuttings.

Suggested assessment

Investigate how farmers around your home or school area prepare soil mix for a plantation crop nursery.

Answers will vary depending on learners' observations/experience.

Lesson 15: Caring for the seedlings

Number of periods: 2

Learner's Book page 84

My goals

By the end of this lesson, learners should be able to:

7.22.3.1 Care for seedlings

Lesson summary

This lesson highlights the importance of proper care of seedlings in a nursery. It lists the activities that need to be done to care for seedlings.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 14.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 5.16 on page 84. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on "Caring for the seedlings".

Step 6 Instruct learners to read "Hardening seedlings" on page 84 to prepare for Lesson 16.

Answers

Activity 5.16

- 1 Seedlings in the nursery need water, shade, space, fertilizer and nutrients, weed control, and pest and disease control.
- 2 Learners should complete the activity, demonstrating knowledge of how to care for seedlings.

Suggested assessment

Observe a farm around your home or school area and report how seedling care practices are carried out.

Answers will vary depending on learners' observations/experience.

Lesson 16: Hardening seedlings

Number of periods: 2

Learner's Book page 84

My goals

By the end of this lesson, learners should be able to:

7.22.4.1 Harden seedlings

Lesson summary

This lesson explains that it is important to harden the seedlings before they are planted in the field. It explains the steps involved in hardening seedlings.

Emphasize the need for seedlings to be strong and healthy in the field.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 15.

Step 3 Introduce and preview lesson.

- Step 4** Instruct learners to work in pairs or small groups to do Activity 5.17 on page 84. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.
- Step 5** Summarize the lesson and activity with an emphasis on “Hardening seedlings”.
- Step 6** Instruct learners to read “Formation of fruits and nuts” on page 86 and do Activity 6.01 on page 87 to prepare for Lesson 1, Chapter 6.
- Step 7** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 5.17

Learners should complete the activity, demonstrating knowledge of caring for, hardening, and preparing seedlings prior to transplanting.

Suggested assessment

Observe farmers around your home or school area and report how they harden seedlings.

Learners should demonstrate knowledge of how to identify and prepare plantation crop seedlings for hardening.

Chapter 6

Growing fruit and nut crops

25 periods

Unit 1

7.23 What are fruit and nut crops?

4 periods

This sub-strand should enable learners to acquire relevant knowledge and understanding of fruit- and nut-crop formation, the need to grow them and their classification.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.23.1** Know the formation of fruit and nut crops (k)
- 7.23.2** Appreciate the need to grow fruit and nut crops (a)
- 7.23.3** Understand the different types of fruit and nut crops grown (u)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.23.1.1** Describe how fruit and nut crops are formed
- 7.23.2.1** Initiate the need to grow fruit and nut crops
- 7.23.3.1** Classify fruit and nut crops

Lesson 1: Formation of fruits and nuts

Number of periods: 2

Learner's Book pages 86–87

My goals

By the end of this lesson, learners should be able to:

7.23.1.1 Describe how fruit and nut crops are formed

Lesson summary

This lesson introduces the terms “fruit” and “nut”. It explains what parts of plants people eat as fruits and nuts and introduces the process by which fruit and nut crops are formed.

Suggested teaching method

Step 1 Introduce and preview lesson.

Step 2 Instruct learners to work in pairs or small groups to do Activity 6.02 on page 87. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 3 Summarize the lesson and activity with an emphasis on “Formation of fruits and nuts”.

Step 4 Instruct learners to read “The need to grow fruit and nut crops” on page 87 to prepare for Lesson 2.

Step 5 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.01

- 1 a** A fruit is a swollen ovary that contains one or more seeds.
- b** A nut is a swollen ovary that becomes hard and dry. It is the seed itself that we eat.
- 2** Fruit is usually formed after the ovule (unfertilized seed) is fertilized by the pollen. The wall of the ovary then starts to swell to form the outside skin and the inside flesh of the fruit.
- 3** Fruit formation is different from nut formation because when nuts form, the wall of the ovary becomes hard and dry.

Activity 6.02

- 1–2** Answers will vary depending on learners' observations/experience, but may include petals, seed, stigma, sepal, ovary and ovule.
- 3** Answers will vary. Learners should draw the flower and label the different parts.
- 4 a** Pawpaw has many seeds.
- b** The cutnut has only one seed.

Suggested assessment

Observe the different stages of fruit- and nut-crop flower development.

Answers will vary depending on learners' observations/experience.

Lesson 2: The need to grow fruit and nut crops

Number of periods: 1

Learner's Book pages 87–88

My goals

At the end of this lesson, learners to should be able to:

7.23.2.1 Initiate the need to grow fruit and nut crops

Lesson summary

This lesson explains the need to grow fruit and nut crops as agricultural crops.

Emphasize that fruit and nut crops are important and their availability depends on whether they are being grown. It is important to encourage the growing of these crops.

Suggested teaching method

Step 1 Review Lesson 1.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read “The need to grow fruit and nut crops” on page 87. While they read, walk around to see if any learners are having difficulty understanding the text. Explain the text and clarify some of the terms used.

Step 4 Instruct learners to work in pairs or small groups to do Activity 6.03 on page 88. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “The need to grow fruit and nut crops”.

Step 6 Instruct learners to read “Classifying fruit and nut crops” on page 88 and do Activity 6.04 question 1 on page 89 to prepare for Lesson 3.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.03

1 Answers will vary depending on learners’ observations/experience.

2 a Answers will vary. Problems listed may include: availability and access to fruit and nut crops, lack of money to buy fruits and nuts from the market, variation in fruit- and nut-crop production.

b Answers will vary. Sample answer: fruits and nuts are important for Solomon Islanders to eat because they contain important nutrients that the body needs.

c Answers will vary depending on learners’ observations/experience. Some of the ways may include: grown as a single crop, grown together as multi-storey cropping, grown in a large area.

Suggested assessment

Suggest how you could increase fruit- and nut-crop production in your home area.

Answers will vary depending on learners’ observations/experience.

Lesson 3: Classifying fruit and nut crops

Number of periods: 2

Learner’s Book pages 88–89

My goals

By the end of this lesson, learners should be able to:

7.23.3.1 Classify fruit and nut crops

Lesson summary

This lesson classifies fruit and nut crops into four general categories.

Explain that in the Solomon Islands, we have both introduced and local fruit and nut crops. Discuss why the local fruit and nut crops have market potential, are nutritious and can be processed into other products.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 2.

Step 3 Introduce and preview lesson.

Step 4 Accompany the learners on a guided tour to observe and identify fruit and nut crops growing around the school area.

Step 5 Instruct learners to work in pairs or small groups to do Activity 6.04 questions 2 and 3 on page 89. Walk around to ensure the learners are carrying out the activity correctly.

Step 6 Summarize the lesson and activity with an emphasis on “Classifying fruit and nut crops”.

Step 7 Instruct learners to read “Planting spaces” on page 89 and do Activity 6.05 question 1 on page 90 to prepare for Lesson 4.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.04

- 1 The four categories are: tree fruits, citrus fruits, small fruits and nuts.
- 2 Answers will vary depending on learners' observations/experience.
- 3 Answers will vary depending on learners' observations/experience.

Suggested assessment

Collect data on fruit and nut crops growing around your home or school area in terms of type and quantity.

Answers will vary depending on learners' observations/experience.

Unit 2

7.24 Preparing to grow fruit and nut crops

4 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills involved in preparing to grow fruit and nut crops.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.24.1 Show skills in using correct planting spaces to grow fruit and nut crops (s)
- 7.24.2 Show skills in transplanting fruit- and nut-crop planting materials (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.24.1.1 Use correct planting spaces to grow fruit and nut crops
- 7.24.2.1 Transplant fruit- and nut-crop planting materials (cuttings, seeds and seedlings)

Lesson 4: Planting spaces

Number of periods: 2

Learner's Book pages 89–90

My goals

By the end of this lesson, learners should be able to:

7.24.1.1 Use correct planting spaces to grow fruit and nut crops

Lesson summary

This lesson explains the importance of using correct planting spaces when growing fruit and nut crops. The spacing requirements of fruit and nut crops are emphasized.

Learners should be given the opportunity to mark out the spacing requirements of different fruit and nut crops. They can use the different design layouts mentioned on pages 81 and 82 of Chapter 5.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 3.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 6.05 question 2 on page 90. Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Planting spaces”.

Step 6 Instruct learners to read “Transplanting” on page 90 and do Activity 6.06 on page 91 to prepare for Lesson 5.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.05

1 Factors that influence fruit- and nut-crop spacing include: type of land or terrain, fruit- and nut-crop species, climate, soil, irrigation method and cropping method.

2 Learners should complete the activity, demonstrating knowledge of planting spaces.

Suggested assessment

Investigate planting layout methods used by farmers around your home or school area.

Answers will vary depending on learners' observations/experience.

Lesson 5: Transplanting

Number of periods: 2

Learner's Book pages 90–91

My goals

By the end of this lesson, learners should be able to:

7.24.2.1 Transplant fruit- and nut-crop planting materials (cuttings, seeds and seedlings)

Lesson summary

This lesson explains the process of transplanting. It explains that fruit- and nut-crop planting materials (seeds, seedlings and cuttings) must be prepared and seedlings must be hardened and transplanted out into the field.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 4.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 6.07 on page 91.
Walk around to ensure that the learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Transplanting”.

Step 6 Instruct learners to read “Weeding” on page 91 and do Activity 6.08 questions 1 and 2 to prepare for Lesson 6.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.06

1 Answers will vary. Factors listed may include: types of fruit- and nut-crop varieties, soil type, and size of planting materials.

2 It is important to add organic matter to planting holes because it contains plant food required by growing plants.

Activity 6.07

Learners should complete the activity, demonstrating knowledge of how to transplant.

Suggested assessment

Prepare planting holes for fruit and nut crops.

Learners should demonstrate knowledge of how to prepare planting holes for fruit and nut crops.

Unit 3

7.25 Caring for fruit and nut crops

10 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills involved in fruit- and nut-crop care and management.

General learning outcomes

By the end of this sub-strand, learners should:

7.25.1 Show skills in controlling weeds in fruit and nut crops (s)

7.25.2 Show skills in de-suckering fruit and nut crops (s)

7.25.3 Show skills in pruning fruit and nut crops (s)

7.25.4 Show skills in applying fertilizers to fruit and nut crops (s)

7.25.5 Show skills in debelling and propping fruit and nut crops (s)

7.25.6 Show skills in controlling pests and diseases in fruit and nut crops (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

7.25.1.1 Control weeds in fruit and nut crops

7.25.2.1 Desucker fruit and nut crops

7.25.3.1 Prune fruit and nut crops

7.25.4.1 Apply fertilizer to fruit and nut crops

7.25.5.1 Debell and prop fruit and nut crops

7.25.6.1 Control pests and diseases in fruit and nut crops

Lesson 6: Weeding

Number of periods: 1

Learner's Book page 91

My goals

By the end of this lesson, learners should be able to:

7.25.1.1 Control weeds in fruit and nut crops

Lesson summary

This lesson discusses weeding as one of the most important caring practices to be carried out on the farm.

Learners should be given the opportunity to carry out weed control at a farm at the school or surrounding area.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 5.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 6.08 question 3 on page 91. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Weeding”.

Step 6 Instruct learners to read “Desuckering” on page 92 and do Activity 6.09 to prepare for Lesson 7.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.08

- 1 The farmer is failing to control weeds on the fruit tree (pawpaw) plantation.
- 2 The farmer should remove the grass so that the tress can grow strong and healthy.
- 3 Learners should complete the activity, demonstrating knowledge of weeding.

Suggested assessment

Demonstrate weed control using other methods.

Learners should demonstrate knowledge of weed control using other appropriate methods.

Lesson 7: Desuckering

Number of periods: 2

Learner's Book page 92

My goals

At the end of this lesson learners should be able to:

7.25.2.1 Desucker fruit and nut crops

Lesson summary

This lesson defines the terms “suckers” and “desuckering” and points out that de-suckering is a very vital caring practice in certain fruit and nut crops such as banana. Several tools that can be used for desuckering are listed.

Give learners the opportunity to carry out this activity at the school or a nearby farm.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 6.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 6.10 on page 92. Walk around to ensure that the learners are carrying out the activity correctly. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Desuckering”.

Step 6 Instruct learners to read “Pruning” and do Activity 6.11 question 1 on page 93 to prepare for Lesson 8.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.09

1 Desuckering is the process of removing suckers from a growing plant.

2 Farmers should desucker fruit and nut crops to enable the plant to produce a large amount of fruit.

3 It varies. For bananas, four suckers should be allowed to grow at one time. For pineapples, one sucker can be allowed to grow at one time.

Activity 6.10

1 Answers will vary depending on learners’ observations/experience.

2 Learners should complete the activity, demonstrating knowledge of how to desucker.

Suggested assessment

Investigate how farmers around your home or school area carry out desuckering.

Answers will vary depending on learners’ observations/experience.

Lesson 8: Pruning

Number of periods: 2

Learner’s Book page 93

My goals

By the end of this lesson, learners should be able to:

7.25.3.1 Prune fruit and nut crops

Lesson summary

This lesson explains the term “pruning” and emphasizes the importance of pruning in order to care for fruit and nut crops. It also introduces the correct tools for pruning.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 7.

Step 3 Introduce and preview lesson.

Step 4 Demonstrate how to prune fruit and nut crops.

Step 5 Instruct learners to do Activity 6.11 question 2 on page 93. Walk around to ensure that the learners are carrying out the activity correctly. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 6 Summarize the lesson and activity with an emphasis on “Pruning”.

Step 7 Instruct learners to read “Applying fertilizer” on page 93 and do Activity 6.12 on page 94 to prepare for Lesson 9.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.11

- Pruning is the removal of any unwanted parts of a plant.
 - Pruning is carried out to: remove disease, remove shoots that will not produce good fruit, remove excess shoots to keep them from competing with the rest of the plant for nutrients, and to give a plant a good shape.
 - The correct tools are secateurs, a pruning knife, and a pruning saw.
- Learners should complete the activity, demonstrating knowledge of pruning.

Suggested assessment

Investigate how a farmer around your home or school area carries out pruning.

Answers will vary depending on learners' observations/experience.

Lesson 9: Applying fertilizer

Number of periods: 2

Learner's Book pages 93–94

My goals

By the end of this lesson, learners should be able to:

7.25.4.1. Apply fertilizer to fruit and nut crops

Lesson summary

This lesson explains that when there is a need, fertilizer should be added. It mentions that both organic and inorganic fertilizer can be used.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 8.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to do Activity 6.13 on page 94. Walk around to ensure that the learners are carrying out the activity correctly. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Applying fertilizer”.

Step 6 Instruct learners to read “Debelling and bunch propping” and do Activity 6.14 questions 1, 2 and 3 on page 94 to prepare for Lesson 10.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.12

- Any fertilizer applied to **fruit** and nut crops should help the plant **grow** and **produce** fruit.
- Most fruit and nut crops can grow and produce fruits and nuts in a wide range of soil types, provided that the soil is well drained and contains organic matter. Plants will also benefit from organic and inorganic fertilizers.

Activity 6.13

Learners should complete the activity, demonstrating knowledge of how to apply fertilizer.

Suggested assessment

Investigate how a farmer around your home or school area applies fertilizers to plantation crops.

Answers will vary depending on learners' observations/experience.

Lesson 10: Debelling and bunch propping

Number of periods: 2

Learner's Book page 94

My goals

By the end of this lesson, learners should be able to:

7.25.5.1 Debelling and prop fruit and nut crops

Lesson summary

This lesson defines the terms “debelling” and “propping” and explains the importance of carrying out these caring practices in certain fruit and nut crops.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 9.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 6.14 question 4 on page 94. Walk around to ensure that the learners are carrying out the activity correctly. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Debelling and bunch propping”.

Step 6 Instruct learners to read “Controlling pests and diseases” on pages 94 and 95 and do Activity 6.15 question 1 on page 96 to prepare for Lesson 11.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.14

- 1 a** Debelling is when the male flower is removed from a plant.
b Propping is when a plant is supported from falling with one or two poles or sticks.
- 2** Answers will vary. Reasons listed may include: to reduce fruit scarring, to reduce cigar-end rot disease.
- 3** Answers will vary. Reasons listed may include: to prevent bunches of fruit from falling, to prevent the whole plant from falling, to prevent fruiting branches from breaking.
- 4** Learners should complete the activity, demonstrating knowledge of debelling and propping.

Suggested assessment

Investigate how a farmer around your home or school area carries out debelling and propping.

Answers will vary depending on learners' observations/experience.

Lesson 11: Controlling pests and diseases

Number of periods: 1

Learner's Book pages 94–95

My goals

By the end of this lesson, learners should be able to:

7.25.6.1 Control pests and diseases in fruit and nut crops

Lesson summary

This lesson explains the importance of controlling pests and diseases in fruit- and nut-crop production. Some examples of the common pests and diseases are provided in the text.

Emphasize that measures for controlling pests and diseases in fruit and nut crops are similar to that of other crops.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 10.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 6.15 questions 2 and 3 on page 96. Walk around to ensure that the learners are carrying out the activity correctly. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Controlling pests and diseases”.

Step 6 Instruct learners to read “Correct timing and method to harvest” and do Activity 6.16 and Activity 6.17 question 1 on page 96 to prepare for Lesson 12.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.15

1 The best way to prevent **pests** and **diseases** is to grow the plant from **materials** that are free from **pests** and **diseases**.

2–3 Learners should complete the activity, demonstrating knowledge of pest and disease damage.

Suggested assessment

Control any pest and disease of fruit and nut crops using appropriate methods.

Learners should demonstrate knowledge of how to control pests and diseases of plantation crops.

Unit 4

7.26 Harvesting and selling fruits and nuts

6 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in harvesting, preparing and selling fruit and nut crops.

General learning outcomes

By the end of this sub-strand, learners should:

7.26.1 Show skills in harvesting fruit and nut crops (s)

7.26.2 Show skills in identifying fruit and nut crops that are ready for harvest (s)

7.26.3 Show skills in preserving fruit and nut crops (s)

7.26.4 Show skills in selling fruit and nut crops (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

7.26.1.1 Harvest fruit and nut crops with correct timing and methods

7.26.2.1 Identify signs that indicate fruit and nut crops are ready for harvest

7.26.3.1 Preserve fruit and nut crops

7.26.4.1 Sell fruit and nut crops

Lesson 12: Correct timing and method to harvest

Number of periods: 1

Learner's Book page 96

My goals

By the end of this lesson, learners should be able to:

7.26.1.1 Harvest fruit and nut crops with correct timing and methods

Lesson summary

This lesson places emphasis on the correct timing and method to harvest fruit and nut crops.

Explain that harvesting of fruit and nut crops should be carried out with care, to maintain the quality of fruit and nut products suitable for consumption and for sale. Point out that nowadays, fruits and nuts are transported longer distances to be sold. So knowing the correct time to harvest and the correct method to use is vital for farmers.

Suggested teaching method

Step 1 Review Lesson 11.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read "Correct timing and method to harvest" on page 96. While they read, walk around to see if any learners are having difficulty understanding the text. Explain the text and clarify some of the terms used.

Step 4 Instruct learners to work in pairs or small groups to do Activity 6.17 questions 2, 3 and 4 on page 97. Walk around to ensure that the learners are carrying out the activity correctly. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on "Correct timing and method to harvest".

Step 6 Instruct learners to read "Signs a fruit or nut crop is ready for harvest" and do Activity 6.19 on page 97 to prepare for Lesson 13.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.16

1 The fruit is not yet ready for harvest.

2 a Pawpaw

b The method being used to harvest the pawpaw is not suitable, because the fruit is likely to fall on the ground and get damaged.

Suggested assessment

Harvest fruit and nut crops using the appropriate method

Learners should demonstrate knowledge of harvesting fruit and nut crops using appropriate methods.

Lesson 13: Signs a fruit or nut crop is ready for harvest

Number of periods: 2

Learner's Book page 97

My goals

By the end of this lesson, learners should be able to:

7.26.2.1 Identify signs that indicate fruit and nut crops are ready for harvest

Lesson summary

This lesson explains that there are signs that fruit and nut crops are ready for harvesting.

Emphasize that it is extremely important for farmers to know these signs.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 12.

Step 3 Introduce and preview lesson.

Step 4 Instruct learners to work in pairs or small groups to do Activity 6.18 on page 97.

While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Signs a fruit or nut crop is ready for harvest”.

Step 6 Instruct learners to read “Preserving fruits and nuts” on page 98 and do Activity 6.20 on page 99 to prepare for Lesson 14.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.17

1 The most obvious sign that a fruit or nut crop is ready for harvest is a change in color. Taste and softness can also show that a fruit or nut crop is ready for harvest.

2–4 Learners should complete the activities, demonstrating knowledge of how to identify if a fruit or nut crop is ready for harvest.

Activity 6.18

Answers will vary depending on learners’ observations/experience. Learners should demonstrate an understanding that there are fruits that ripen naturally and those that ripen by force.

Activity 6.19

1 Letting fruit ripen naturally enables the fruit to maintain its natural flavors and tastes.

2 It prevents the fruits from being damaged by pests or stolen by other people.

3 Fruits can be damaged or infected by pests.

4 Forcing fruit to ripen can spoil the natural taste and flavor.

Suggested assessment

Compare the quality and taste of fruits that ripen naturally and those that are forced to ripen.

Answers will vary depending on learners’ observations/experience.

Lesson 14: Preserving fruit and nut crops

Number of periods: 2

Learner’s Book pages 98–99

My goals

By the end of this lesson, learners should be able to:

7.26.3.1 Preserve fruit and nut crops

Lesson summary

This lesson explains the importance of preserving fruit and nut crops especially using traditional methods. The lesson presents a case study involving the traditional process of preserving breadfruit.

Suggested teaching method

Step 1 Review Lesson 13.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read “Preserving fruit and nut crops” on page 98 and do Activity 6.20 on page 99. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Give learners the opportunity to present their products to the class. Go through the activity with the learners and ensure they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Preserving fruit and nut crops”.

Step 6 Instruct learners to read “Selling fruit and nut crops” on page 99 to prepare for Lesson 15.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.20

1 Answers will vary. Fruit and nut crops listed may include: ngali nuts, cutnuts, bananas, alite nuts, pineapples, pawpaw.

2–4 Learners should complete the activities, demonstrating knowledge of how to preserve fruits and nuts.

Suggested assessment

Investigate other ways in which fruit and nut crops can be preserved.

Answers will vary depending on learners’ observations/experience.

Lesson 15: Selling fruit and nut crops

Number of periods: 1

Learner’s Book page 99

My goals

By the end of this lesson, learners should be able to:

7.26.4.1 Sell fruit and nut crops

Lesson summary

This lesson explains that selling of fruit and nut crops depends on both the quality and quantity. The factors that determine quality and quantity are outlined.

Explain that supply of fruit and nut crops is influenced by season. Explain that there are ways to promote flowering in some fruit and nut crops. Emphasize the market potential of our local fruit and nut crops.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 14.

Step 3 Introduce and preview lesson.

Step 4 Accompany learners on a guided tour to observe and investigate the demand for fruit and nut crops at market outlets.

Step 5 Instruct learners to work in pairs or small groups to do Activity 6.21 on page 99. While they are doing the activity, walk around to assist learners having difficulty. Go through the activity with the learners and ensure they have correctly answered the questions.

Step 6 Summarize the lesson and activity with an emphasis on “Selling fruit and nut crops”.

Step 7 Instruct learners to read “What are farm animals?” on page 101 and do Activity 7.01 questions 1 and 2 on page 102 to prepare for Lesson 1, Chapter 7.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 6.21

Answers will vary depending on learners' observations/experience.

Suggested assessment

Investigate the market potential of one local fruit or nut crop growing around your school area.

Answers will vary depending on learners' observations/experience.

Chapter 7

Introduction to farm animals

20 periods

Unit 1

7.27 Why raise farm animals?

3 periods

This sub-strand should enable learners to acquire relevant knowledge and understanding of raising farm animals, the benefits of raising them and their classification.

General learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.27.1** Know farm animals (k)
- 7.27.2** Appreciate the benefits of raising farm animals (a)
- 7.27.3** Understand the different types of farm animals (u)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.27.1.1** Define and describe the term “farm animals”
- 7.27.2.1** Share the benefits of raising farm animals
- 7.27.3.1** Classify farm animals

Lesson 1: What are farm animals?

Number of periods: 1

Learner's Book pages 101–102

My goals

By the end of this lesson, learners should be able to:

- 7.27.1.1** Define and describe the term “farm animals”

Lesson summary

This lesson defines the term “farm animals” and explains that farm animals in the Solomon Islands are either native or introduced from other countries.

Go through the various reasons farmers raise farm animals. Emphasize that to raise farm animals, it is necessary to have a basic understanding and skills.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Introduce and preview lesson.

Step 3 Accompany learners on a guided tour to shops and identify products that come from farm animals.

Step 4 Instruct learners to work in pairs or small groups to do Activity 7.01 question 3 on page 102. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “What are farm animals”.

Step 6 Instruct learners to read “Benefits of raising farm animals” on pages 102 and 103 to prepare for Lesson 2.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.01

- 1 Birds, **mammals**, reptiles, **insects** and marine animals that are raised on a **farm** are called farm animals. Farm animals in the Solomon Islands are either **native** animals or animals **introduced** into the country from other places.
- 2 Learners should include three of the following: sell at the market, family consumption, social obligation, bride price, feasts, other special occasions like a birthday or Christmas party.
- 3 Answers will vary depending on learners' observations/experience. Some examples may include: corned beef, eggs, honey, milk, butter, ice cream, cheese, fruit juices, soft drinks.

Suggested assessment

State one economic reason for raising farm animals.

Answers will vary. Sample answers: to reduce dependency on imported animal products, to increase the income of the farmer and the country, to reduce the import of animal products, to increase the supply of animal products in the local market.

Lesson 2: Benefits of raising farm animals

Number of periods: 1

Learner's Book pages 102–103

My goals

By the end of this lesson, learners should be able to:

7.27.2.1 Share the benefits of raising farm animals

Lesson summary

This lesson uses a case study to explain the benefits we can get from raising farm animals.

The experiences of the person in the case study are the main focus of the lesson.

Suggested teaching method

Step 1 Review Lesson 1.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read “Benefits of raising farm animals” on page 102 and the Case study on page 103. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to work in pairs or small groups to do Activity 7.02 on page 102. While they are doing the activity, walk around to see if any learners are having difficulty. Go

through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Benefits of raising farm animals”.

Step 6 Instruct learners to read “Classifying farm animals” on page 104 to prepare for Lesson 3.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.02

- 1** This farmer was successful because he sought assistance from the Member of Parliament and got a loan. He also developed a project plan, which he implemented and achieved over time.
- 2** Learners should include four of the following benefits: source of income, source of employment, source of food and animal products, higher standard of living, increased status in the community, provide a venue for student learning.
- 3** Answers will vary. Sample answer: the demand for animal products in this country is increasing and most animal products are imported from other countries. There is potential to meet the demand for animal products, if more farmers got involved in farm animal production.

Suggested assessment

Investigate how people around your home or school area benefit from raising farm animals.

Answers will vary. Sample answers: people can benefit from raising farm animals because it will raise funds to pay for the cost of education, help to meet household needs, help to meet social obligations and improve their family income.

Lesson 3: Classifying farm animals

Number of periods: 1

Learner’s Book pages 104–105

My goals

By the end of this lesson, learners should be able to:

7.27.3.1 Classify farm animals

Lesson summary

This lesson introduces learners to one of the main ways of classifying farm animals.

Explain that farm animals can be classified into five categories. Emphasize that whether we raise native or introduced animals, it is important to know the characteristics of farm animals.

Suggested teaching method

Step 1 Review Lesson 2.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read “Classifying farm animals” on page 104. While learners are reading, walk around to see if any learners are having difficulty understanding the text. Explain the text and clarify some of the terms used.

Step 4 Instruct learners to work in pairs or small groups to do Activity 7.03 on page 105. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Classifying farm animals”.

Step 6 Instruct learners to read “Planning to raise farm animals” on pages 105 and 106 and do Activity 7.04 question 2 on page 106 to prepare for Lesson 4.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.03

1 Answers will vary. Sample answer:

Birds (poultry)	Animals (livestock)	Reptiles	Insects	Marine animals
chickens turkeys geese ducks	pigs goats sheep cattle buffalo rabbits horses	crocodiles snakes	butterflies honey bees	fish shrimp eels crabs seaweed pearls from oysters clam shells

2–4 Answers will vary. Sample answer:

Farm animals that are native to Solomon Islands	Farm animals that are introduced into Solomon Islands
pigs crocodiles butterflies clam shells dogs	cattle goats chickens horses honey bees tilapia ducks

Suggested assessment

Go to a farm around your home or school area. Collect data and put it in a table like the one below.

Type of farm animal	Number of animals

Answers will vary depending on learners' observations/experience.

Unit 2

7.28 Preparing to raise farm animals

8 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in planning, selecting farm animals, choosing a suitable site and using different methods of management to raise farm animals.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.28.1** Show skills in planning to raise farm animals (s)
- 7.28.2** Show skills in selecting farm animals to raise (s)
- 7.28.3** Show skills in selecting a suitable site (s)
- 7.28.4** Show skills in using different management methods to raise farm animals (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

7.28.1.1 Plan to raise farm animals

7.28.2.1 Select farm animals to raise

7.28.3.1 Select suitable sites to raise farm animals

7.28.4.1 Use different management methods to raise farm animals

Lesson 4: Planning to raise farm animals

Number of periods: 1

Learner's Book pages 105–106

My goals

By the end of this lesson, learners should be able to:

7.28.1.1 Plan to raise farm animals

Lesson summary

This lesson explains that planning is important for raising farm animals. For farmers to successfully raise farm animals they must have clear answers to basic questions such as “What farm animals should I raise?”, “Where should I raise the farm animals?”, “How should I raise them?” and “Who will use the farm animals?”

Remind learners that like all enterprises, planning is necessary when raising farm animals.

Suggested teaching method

Step 1 Review Lesson 3.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to work in pairs or small groups to do Activity 7.04 on page 106. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 4 Give learners the opportunity to present their findings to question 2.

Step 5 Summarize the lesson and activity with an emphasis on “Planning to raise farm animals”.

Step 6 Instruct learners to read “Selecting farm animals to raise” on page 106 and do Activity 7.05 on page 107 to prepare for Lesson 5.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.04

1 Farmers should answer the following questions:

- What farm animals should I raise?
- Where should I raise farm animals?
- How should I raise the farm animals?
- Who will use the farm animals?

2 Answers will vary depending on learners' observations/experience.

Suggested assessment

List the materials you need to raise one rooster and five hens.

Answers will vary depending on learners' observations/experience.

Lesson 5: Selecting farm animals to raise

Number of periods: 1

Learner's Book pages 106–107

My goals

By the end of this lesson learners should be able to:

7.28.2.1 Select farm animals to raise

Lesson summary

This lesson introduces factors that must be considered when selecting farm animals to raise. It emphasizes that selection is important so that you can get the best animals to meet your requirements.

Suggested teaching method

Step 1 Review Lesson 4.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read “Selecting farm animals to raise” on pages 106 and 107. While they read, walk around to see if any learners are having difficulty understanding the text. Briefly explain the text.

Step 4 Instruct learners to work in pairs or small groups to do Activity 7.06 on page 107. While they are doing the activity, walk around to see if any learners are having difficulty. Give learners the opportunity to present their findings. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Selecting farm animals to raise”.

Step 6 Instruct learners to read “Choosing a site” on page 107 and do Activity 7.07 question 2 on page 108 to prepare for Lesson 6.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.05

- 1 Answers will vary depending on learners' observations/experience. Learners should compare their findings with the criteria given in the Learner's Book, on page 106.
- 2 The chicken in figure 7.08 is most suitable to raise in a village, as it will be well-adapted to the local conditions. It can also survive with minimal care.

Activity 7.06

- 1–3** Answers will vary. Students should ask questions such as: What type of farm animal products do you prefer? How often do you eat this product? Where do you obtain this product? Is the price of this product reasonable? Who produces and supplies the market with this product? What factors may have affected the demand and supply of this product?

Suggested assessment

Investigate other factors that may influence which animals a farmer will select to raise.

Answers will vary. Sample answers: availability of farm-animal breeding stock, access to feed, size of area, market outlets, transportation, technical skills, a farmer's knowledge of the animal.

Lesson 6: Choosing a site

Number of periods: 1

Learner's Book pages 107–108

My goals

By the end of this lesson, learners should be able to:

7.28.3.1 Select suitable sites to raise farm animals

Lesson summary

This lesson emphasizes that choosing a location for raising farm animals is a very important decision for the farmer to make. Important things to consider when selecting a site are outlined.

Give learners the opportunity to observe the school area and decide on a suitable site for raising a particular farm animal, considering the factors outlined on page 107 of the Learner's Book.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 5.

Step 3 Introduce and preview lesson.

Step 4 Accompany the learners on a guided tour around the school area and instruct them to do Activity 7.07 question 1 on page 108. Ensure that learners use the criteria given in the text to identify a suitable site. Walk around to ensure learners are carrying out the activity correctly.

Step 5 Summarize the lesson and activity with an emphasis on “Choosing a site”.

Step 6 Instruct learners to read “Methods of raising farm animals” on page 108 and do Activity 7.08 questions 3 and 4 on page 109 to prepare for Lesson 7.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.07

1 Answers will vary depending on learners' observations/experience.

2 Answers will vary. Sample answer: it is possible to raise farm animals in these areas, depending on the purpose of raising the animals, the type of animal, the size of the area and location.

Suggested assessment

What other factors should be considered when selecting a site for raising farm animals?

Answers will vary. Sample answer: access to feed, the smell of farm animal waste, whether it is close to market outlets, the demand for farm animals.

Lesson 7: Methods of raising farm animals

Number of periods: 2

Learner's Book pages 108–109

My goals

By the end of this lesson, learners should be able to:

7.28.4.1 Use different management methods to raise farm animals

Lesson summary

This lesson explains that once the site to raise farm animals is selected, the farmer must have knowledge on which method they will use to raise the animals. Factors that will determine which method to be used to raise farm animals are explained.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 6.

Step 3 Introduce and preview lesson.

Step 4 Accompany the learners on a guided tour to observe how farmers raise farm animals. Instruct learners to do Activity 7.08 questions 1 and 2 on page 109. Instruct learners to observe carefully. Walk around to ensure learners are carrying out the activity correctly.

Step 5 Go through the activity with the learners. Ensure that they have correctly answered the questions.

Step 6 Summarize the lesson and activity with an emphasis on “Methods of raising farm animals”.

Step 7 Instruct learners to read “What is animal nutrition?” on page 109 to prepare for Lesson 8.

Step 8 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.08

1–2 Answers will vary depending on learners’ observations/experience.

3–4 Answers will vary, but may include the following:

Method of raising farm animals	Advantages	Disadvantages
Free-range	Animals find own food Animals find own shelter Costs less Less effort to keep animals	Animals are easily stolen Animals can get sick Poor quality animal product Animal not controlled
Semi-intensive	Animal provided with some form of shelter/food supplement	Farmer needs to work extra hard Some costs incurred Provision of extra feed
Intensive	Animal fully housed Pests and diseases easily controlled Animal diet is balanced Animals easily controlled	Costly to raise animals Need skills/knowledge Not suitable for rural farmers

Suggested assessment

What method of farming is most suitable to your area?

Answers will vary depending on learners’ observations/experience.

Unit 3

7.29 What is animal nutrition?

4 periods

This sub-strand should enable learners to acquire relevant knowledge and understanding of the importance of nutrition to the diet of farm animals.

General learning outcomes

By the end of this sub-strand, learners should:

7.29.1 Understand animal food (u)

7.29.2 Understand the importance of animal nutrition (u)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

7.29.1.1 Explain the term “animal food”

7.29.2.1 Explain the importance of animal nutrition

Lesson 8: What is animal food?

Number of periods: 2

Learner’s Book page 109

My goals

By the end of this lesson, learners should be able to:

7.29.1.1 Explain the term “animal food”

Lesson summary

The lesson explains the term “animal nutrition” and “animal feed”. It explains that to get the best out of farm animals, a farmer must have basic knowledge and understanding of animal nutrition.

Suggested teaching method

Step 1 Review Lesson 7.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read “What is animal food?” on page 109. While they read, walk around to see if any learners are having difficulty understanding the text. Explain the text and clarify some of the terms used.

Step 4 Instruct learners to work in pairs or small groups to do Activity 7.09 on page 109. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “What is animal food?”

Step 6 Instruct learners to read “Importance of animal nutrition” on page 110 to prepare for Lesson 9.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.09

- 1 Food that is processed and **fed** to animals or that the animals eat **raw** is called **animal feed**.
- 2 When an animal consumes food, it is digested and changed into nutrients that the animal needs for energy, and for the repair and growth of cell tissue.
- 3 Answers will vary. Sample answer:

Farm animal	Food they eat
Village chicken	Insects, food scraps, green leaves
Chicken raised for commercial meat production	Starter feed, grower feed, finisher feed
Goat	Pasture grasses and legumes
Cow	Pasture grasses and legumes

Suggested assessment

Plan a balanced diet for farm animals of your choice using locally-available food materials.

Answers will vary. Sample answer: combination of carbohydrates, proteins, fats and oils, minerals and vitamins.

Lesson 9: Importance of animal nutrition

Number of periods: 2

Learner's Book page 110

My goals

By the end of this lesson, learners should be able to:

7.29.2.1 Explain the importance of animal nutrition

Lesson summary

The lesson explains the importance of good nutrition for animals. The term “malnourished” is explained and problems that are associated with malnourished animals are described. The term “balanced diet” is also defined and the importance of a balanced diet for animals is reinforced.

Suggested teaching method

Step 1 Review Lesson 8.

Step 2 Introduce and preview lesson.

Step 3 Instruct the learners to read “Importance of animal nutrition” on page 110. While they read, walk around to see if any learners are having difficulty understanding the text. Explain the text and clarify some of the terms used.

Step 4 Instruct learners to work in pairs or small groups to do Activity 7.10 on page 110. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions.

Step 5 Summarize the lesson and activity with an emphasis on “Importance of animal nutrition”.

Step 6 Instruct learners to read “Nutrients and their functions” and to do Activity 7.11 on page 111 to prepare for Lesson 10.

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.10

- 1 Feeding animals food that is full of **nutrients** helps them to grow **healthy** and **strong**.
- 2 When an animal is malnourished, it is because it may be eating food that doesn't provide it with nutrients.
- 3 Learners should include three of the following: fighting diseases; producing good-quality meat; producing a large amount of products that are good quality, like milk and eggs; producing healthy offspring.
- 4 The animal in figure 7.15 is healthy because it eats food that is full of nutrients. The animal in figure 7.16 is malnourished, because it may be eating food that doesn't provide the nutrients required for proper growth and development.

Suggested assessment

Observe and report the nutritional status of farm animals raised around your home or school area.

Answers will vary depending on learners' observations/experience.

Unit 4

7.30 Components of animal food

5 periods

This sub-strand should enable learners to acquire relevant knowledge, understanding and skills in relation to different types of nutrients and their functions, types of animal feed, proper storage of animal feed and feeding of farm animals.

General learning outcomes

By the end of this sub-strand, learners should:

- 7.30.1** Understand nutrients and their function (u)
- 7.30.2** Show skills in classifying and storing animal feed (s)
- 7.30.3** Show skills in feeding farm animals (s)

Specific learning outcomes

By the end of this sub-strand, learners should be able to:

- 7.30.1.1** Explain the different nutrients and their functions
- 7.30.2.1** Classify and store animal feed
- 7.30.3.1** Feed farm animals

Lesson 10: Nutrients and their functions

Number of periods: 2

Learner's Book page 111–112

My goals

By the end of this lesson, learners should be able to:

- 7.30.1.1** Explain the different nutrients and their functions

Lesson summary

This lesson introduces learners to the different types of nutrients and their functions.

Emphasize that nutrients play a vital role in the overall growth and development of animals. Note that the process involved in the digestion of food helps to release nutrients.

Suggested teaching method

- Step 1** Review Lesson 9.
- Step 2** Introduce and preview lesson.
- Step 3** Instruct learners to work in pairs or small groups to do Activity 7.12 on page 112. While they are doing the activity, walk around to see if any learners are having difficulty. Go through the activity with the learners and ensure that they have correctly answered the questions. Instruct learners to present their findings to the class.
- Step 4** Summarize the lesson and activity with an emphasis on “Nutrients and their functions”.
- Step 5** Instruct learners to read “Classifying and storing animal feed” on pages 112 and 113 and do Activities 7.14 and 7.15 on page 113 to prepare for Lesson 11.
- Step 6** Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.11

- 1 The main component of food include: carbohydrates, fats and oils, proteins, vitamins, minerals and water.
- 2 When food is completely broken down in the body, the nutrients are absorbed into the animal's bloodstream.
- 3 The nutrients are absorbed into the animal's bloodstream for specific function that the body would use (refer to Table 7.03 for possible examples of specific bodily functions).

Activity 7.12

- 1–3** Learners should complete the activity, demonstrating knowledge of nutrients and their functions.

Activity 7.13

- 1–2** Answers will vary depending on learners' observations/experience.

Suggested assessment

Investigate and report the status of a farm animal's diet around your home or school area.

Answers will vary depending on learners' observations/experience.

Lesson 11: Classifying and storing animal feed

Number of periods: 2

Learner's Book pages 112–113

My goals

By the end of this lesson, learners should be able to:

- 7.30.2.1** Classify and store animal feed

Lesson summary

This lesson explains where animal feed comes from, and the importance of proper storage of animal feed.

Emphasize that proper storage maintains feed quality and avoids spoilage, damage and waste.

Suggested teaching method

Step 1 Review Lesson 10.

Step 2 Introduce and preview lesson.

Step 3 Instruct learners to work in pairs or small groups to do Activity 7.14. While they are doing the activity, walk around to assist learners having difficulty. Give learners the opportunity to display their collection and give a brief presentation. Go through the activity with the learners and ensure that they have correctly answered the question.

Step 4 Summarize the lesson and activity with an emphasis on “Classifying and storing animal feed”.

Step 5 Instruct learners to read “Feeding animals” on pages 113 and 114 and do Activity 7.15 on page 113 and Activity 7.16 question 1 on page 114 to prepare for Lesson 12.

Step 6 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.14

Learners should complete the activity, demonstrating knowledge of classifying animal feed.

Activity 7.15

- 1** Animal **feed** should be **stored** properly to maintain its **quality**, including its freshness and taste.
- 2–3** Learners should complete the activity, demonstrating knowledge of how to store animal feed. Examples of storing animal feed may include: strong plastic bags and air-tight containers.
- 4** It should be stored properly to maintain its quality, and to keep pests, such as rats and insects away from the feed.

Suggested assessment

Observe a farm around your home or school area and report the type of animal feed used and how it is stored.

Answers will vary depending on learners' observations/experience.

Lesson 12: Feeding animals

Number of periods: 2

Learner's Book pages 113–114

My goals

By the end of this lesson, learners should be able to:

7.30.3.1 Feed farm animals

Lesson summary

This lesson explains that it is important to feed animals properly. The factors that determine the method of feeding are outlined and some of the common methods of feeding animals are discussed.

Make sure you have made prior arrangements with farmers to allow learners to carry out the activity.

Suggested teaching method

Step 1 Learners assemble at a designated practical site.

Step 2 Review Lesson 11.

Step 3 Introduce and preview lesson.

Step 4 Accompany learners on a guided tour and instruct them to work in pairs or small groups. Give them the opportunity to carry out practical feeding of farm animals over a given period of time.

Step 5 Instruct learners to do Activity 7.16 questions 2, 3 and 4 on page 114. While they are doing the activity, walk around to assist learners having difficulty. Go through the activity and ensure they have correctly answered the questions.

Step 6 Summarize the lesson and activity with an emphasis on "Feeding animals".

Step 7 Instruct learners to complete the suggested assessment task for homework.

Answers

Activity 7.16

- 1** The method a farmer uses to feed farm animals is affected by the following factors: location, status of farmer, transport, weather and climate, and the farmer's knowledge and skills.
- 2–4** Answers will vary depending on learners' observations/experience.

Suggested assessment

Design and construct appropriate feeding equipment for farm animals using available resources.

Answers will vary. Learners should design and construct a simple structure using materials such as bamboo and timber.

Glossary

Chapter 1

agriculture: field cultivation

alkaline: salty

cash crops: crops grown to be sold instead of to be used by the farmer

commercial agriculture: growing crops and raising animals for sale, not personal use

commercial farmers: people engaged in commercial agriculture

compost: organic matter

fallow: land that is not cultivated

farm: an area of land where agriculture is practised—crops are grown and animals are raised

farmers: people who practise agriculture

fertile: able to grow crops well

hunting and gathering: a method of getting food that involves gathering wild plants and hunting wild animals

mixed cropping: growing two cash crops together over a large area of land

permanent cultivation: to keep land cultivated and used agriculturally without any fallow periods

primary industry: directly using natural resources to produce something

school farm: a place at school where crops are grown or animals are raised

secondary industry: producing manufactured goods

semi-subsistence agriculture: growing more crops and raising more animals than you can use and selling the excess

shifting cultivation: cultivating land until it becomes exhausted, then moving to different land

subsistence agriculture: only growing enough crops and raising enough animals to provide for yourself

Chapter 2

biological weathering: a larger rock breaks down into smaller pieces because of the actions of plants and animals

chemical weathering: a larger rock is broken into smaller pieces that have a different chemical composition by chemicals, such as from rain

clay soil: soil that feels smooth and contains a large amount of clay

loam: soil that feels smooth and rough and that contains a mixture of clay and sand

organic: of or from living material

parent rocks: rocks that are underneath the soil

physical weathering: a larger rock is broken into smaller pieces that are of the same general composition by the action of rain, wind and ice

sandy soil: soil that feels rough and contains a large amount of sand

soil: the natural material on the surface of the Earth in which plants grow

soil horizons: layers in soil

soil particles: small pieces of large stones and rocks

soil profile: a vertical section, or side view, of soil

weathering: the process in which large rocks or stones break down to form soil particles

Chapter 3

classified: sorted into groups

corm: a short, rounded underground stem

cotyledon: the largest part of the seed, found on the inner part of the seed, that supplies a growing plant with food

cuttings: the parts of a plant that are planted to make a new plant

direct sowing: planting seeds, cuttings, or suckers directly into the land where they will grow and develop

dormant: seeds that have not germinated

embryo: a part of the inner seed that can eventually develop into a new plant

friable: able to crumble easily

germinate: to begin to grow

hardening: to prepare a seedling for field conditions by removing shades, placing plants in the sun, or other such measures
hilum: the place on the outside of the seed where it was attached to the flower or fruit
micropyle: the opening on the outside of the seed that allows it to be fertilized
nursery: a place where seedlings are grown before they can be transplanted
planning: making an outline of what you intend to do before you actually get started
plant reproduction: making another plant
planting material: the part of the plant that will go into the soil and grow into the food crop
prepare: to get something ready
pricking: separating and removing seedlings in the nursery so that each plant grows well
rhizome: an underground stem
seed: the part of the plant that will grow into a new plant
seedlings: young plants
soil sterilization: heating soil to kill harmful pests and organisms
testa: the outer part of a seed that protects the inner parts
transplanted: to move a plant from one location to another
yield: the amount of a crop that grows successfully

Chapter 4

evaporation: when water is lost from soil on a hot day
excess shoots: parts of a plant that do not bear fruit
fertilizers: materials added to soil to give plants nutrients that help them to grow
mulching: covering and protecting the surface of the soil
nutrients: plant food in the soil
pathogens: organisms that cause diseases
pest control: keeping pests away from crops
pests: living things that eat or damage plants
planting bed: an area of land prepared for planting seeds, seedlings, or cuttings
pruning: removing unwanted plant parts to improve or control plant growth or fruit size
staking: tying a plant to a pole to support a weak stem

thinning out: removing extra seedlings from a plant bed
trellis: a structure built to support a vine or climbing plant
weeds: unwanted plants growing in a farm or garden
wilting: when a plant does not receive enough water and the leaves begin to droop

Chapter 5

layout: the way crops are arranged during planting
perennial: plants that grow for more than a year
plantation: a large area of land that is owned by the government or privately owned
plantation crop: a perennial, or permanent, crop grown in a plantation
smallholding: a small plantation

Chapter 6

debellung: removing the male flower from a plant
desuckering: removing suckers from a growing plant
multi-storey cropping: growing different crops together in a specific area
nambo: mature breadfruit that has been processed and preserved
ovule: unfertilized seed
propping: supporting a plant with sticks or poles
sucker: a part of a plant that can be used as planting material to grow a new plant

Chapter 7

animal feed: food that is processed and fed to animals or that the animals eat raw
balanced diet: an animal is fed all the nutrients it needs
farm animals: birds, animals, reptiles, insects, and marine animals that are raised on a farm
introduced: originated from a foreign country
malnourished: an animal that hasn't been provided with food containing nutrients
native: originated from the Solomon Islands

Appendix 1: Suggested teaching methods

A range of strategies for helping learners to achieve the overall learning outcomes are shown here.



Appendix 2: Lesson-plan format

Name of school:	Class teacher:
Lesson title:	Date:
Learning outcomes <ul style="list-style-type: none"> • What are the main things I want learners to learn and be able to do as a result of the lesson? How are lesson outcomes linked to syllabus outcomes? • What other things do I want learners to learn? 	
Lesson content and references <ul style="list-style-type: none"> • What are the key facts, concepts or procedures that I want learners to understand as a result of this lesson? • What resources can I use for reference? 	
Introduction <ul style="list-style-type: none"> • How will I get learners motivated, curious and ready to learn? (Allocate 3–5 minutes.) 	
Teacher activities <ul style="list-style-type: none"> • What am I going to do during the lesson to allow learners to achieve the learning outcomes? (Allocate 8–10 minutes.) 	Learner activities <ul style="list-style-type: none"> • What are the learners going to do during the lesson to allow them to achieve the learning outcomes? (Allocate 20–25 minutes.)
Conclusion <ul style="list-style-type: none"> • How will I bring the lesson to a logical and meaningful conclusion? (Allocate 5–7 minutes.) 	
Learner assessment <ul style="list-style-type: none"> • How will I know that learners have achieved what I wanted them to achieve? (Include a list of assessment tasks.) 	
Lesson evaluation <ul style="list-style-type: none"> • How will I evaluate the success of the lesson? (Do this after the lesson.) 	
Lesson endorsement: (To be signed by Head of Department/Head Teacher/Principal)	
Head of Department	Head teacher/Principal

Appendix 3: Sample individual-record form

Learner name:		Year:					Class:		
Strand:		Sub-strand:					Specific learning outcomes Achieved (A) Partially Achieved (PA) Not Achieved (NA) Key: 5 = A, 1-4 = PA, 0 = NA		
Assessment event	Specific learning outcomes (use appropriate code)	Achievement levels (ratings)							
	Code	Outcome assessed	5	4	3	2		1	0
1	7.1.1.1	Describe how people get food	*						A
2	7.1.2.1	Define the term "agriculture"			*				PA
3	7.1.3.1	Explain the importance of agriculture as a primary industry						*	NA
4	7.1.4.1	Describe how people get food		*					PA
Descriptive comments:									
Class teacher:					Signature:		Date:		

Appendix 4: Sample class-record form

Class:	Strand:	Sub-strand:	Year:
	Specific learning outcomes: A = Achieved, PA = Partially Achieved, NA = Not Achieved		Individual comments on the learning progress in the class
Assessment event	1		
Learning outcome assessed (code)	7.1.1.1		
Denis	A		
Ian	A		
Jack	A		
James	A		
John	PA		
Joyce	PA		
Lionel	PA		Steady/satisfactory
Liza	NA		
Luke	NA		
Mary	A		Improved/excellent progress
Michael	PA		
Nancy	NA		
Peter	A		
Tom	NA		
Yates	NA		Not improved/slow progress
Overall comments:			
Class teacher:			Date:
Signature:			

Appendix 5: Sample individual-monitoring form

Learner name:		Class:		Year:		
Strand:		Topic/unit:				
Sub-strand:		Specific learning outcomes: A = Achieved, PA = Partially Achieved, NA = Not Achieved				
Assessment event	Code	Description of outcome assessed	A	PA	NA	Remarks
1	7.1.1.1	Describe how people get food	*			Improved from previous assessment event
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
Class teacher:		Signature:				Date:

Appendix 6: Sample class-monitoring form

Class:		Term/semester:						Year:
Strand:								Topic/unit:
Sub-strand:								Remarks
Assessment event	1	2	3	4	5	6	Comment on learning progress: improved, steady or not improved	
Specific learning outcome assessed (code)	7.1.1.1	7.1.1.2	7.1.2.1	7.1.3.1				
Mary Kasi	NA	PA1	PA3	PA4	A	A	Improved with excellent progress	
John Niga	A							
Liza Joe	NA							
Peter Glen	PA							
James Iro	PA							
Luke Bilo	A							
Class teacher:							Signature:	Date:

Appendix 7: Sample monitoring-of-specific-learning-outcome form

Class:		Term/Semester:				Year:	
Strand/Sub-strand:		Total number of learners: 40				Topic/Unit remarks	
Assessment event	Code	Specific learning outcome assessed (use appropriate code)	A	PA	NA	Enrichment support	Remedial work
1	7.1.1.1	Describe how people get food	5	25	10	5 learners have achieved outcome assessed	35 learners have not achieved outcome assessed
Class teacher:						Signature:	Date:

Appendix 8: Sample individual-remedial-work form

Learner name:		Class:		Term/Semester:		Year:	
Strand:		Sub-strand:					
Assessment event		Specific learning outcomes (use appropriate code)					
	Code	Outcome assessed	A	PA	NA	Remedial work required	Results after remedial work
1	7.1.1.1	Describe how people get food		PA4		Five or more ways to get food described correctly	Able to describe correctly five or more ways to get food.
Class teacher:						Signature:	Date:

Appendix 9: Sample individual-report form

Learner name:		Class:	Term:	Year:
Strand:		Specific learning outcomes:		
Sub-strand:		Achieved (A), Partially Achieved (PA) or Not Achieved (NA)		
Code	Specific learning outcome assessed (use appropriate code)	A	PA	NA
7.1.1.1		*		
Descriptive remarks:				
Strand:		Specific learning outcomes:		
Sub-strand:		Achieved (A), Partially Achieved (PA) or Not Achieved (NA)		
Code	Specific learning outcome assessed (use appropriate code)	A	PA	NA
7.1.1.2			*	
Descriptive remarks (must include results after remedial work has been completed by the learner):				
Results for summative assessment: The progressive achievement level for summative assessment is ...				

cont. on page 119

Strand:	Combination of sub-strands:	Specific Learning Outcomes		
		Achieved (A), Partially Achieved (PA), or Not Achieved (NA)	PA	NA
7.3.1.1		*		
7.1.2.1			*	
7.1.3.1				*
Descriptive remarks from summative assessment:				
Overall achievement level:		Overall achievement award:		
School administration report on learner's behaviour and character:				
Class teacher:		Signature:	Date:	
Class teacher comments:				
Head teacher/Principal:		Signature:	Date:	
Head teacher/Principal comments:				

Appendix 10: Sample school report

Takwa Community High School

Name: _____ Level: _____

Reporting period: _____

Subjects	Score	Overall achievement level, award & certification	Grade	Comments
English	95%	5, AWE and Gold	A	Well done
Mathematics				
Science				
Social Studies	90%	4, AWM and Silver	B	Good work
Health Education				
Christian Education	60%	3, AWMS and Bronze	C	Satisfactory work
Creative Arts and Culture				
Physical Education	21%	2 and ABMS	D	Need to attend practical sessions in PE
ICT	0%	0 and NA	E	Need to put more effort in ICT
Teacher comments on learner's attitude, behaviour and character:				
Head teacher comments:				
<p>Key 95%–100% is AWE: Achieved with excellence and Gold 80%–94% is AWM: Achieved with merit and Silver 50%–79% is AWMS: Achieved with minimum standards and Bronze 20%–49% is ABMS: Achieved below minimum standards 1%–19% is AFBMS: Achieved far-below minimum standards 0% is NA: Not achieved</p>				

Solomon Islands Agriculture Year 7

Teacher's Guide

The *Solomon Islands Agriculture Year 7 Teacher's Guide* provides support material to the *Solomon Islands Agriculture Year 7 Learner's Book*. The Teacher's Guide is designed to assist teachers in helping students to learn the intended knowledge, skills, understanding and attitudes contained in the Agriculture syllabus, which was developed during the Solomon Islands curriculum reform of 2005–2012.

Each unit in the Learner's Book is covered in this Teacher's Guide as well as tailored lesson plans that include the following information:

- links to the syllabus
- goals
- number of periods required
- a lesson summary
- suggested teaching method
- answers to activities in the Learner's Book
- additional assessment activities.

As the Solomon Islands' agricultural sector is a major employer and source of livelihood in rural areas, where approximately 80 per cent of the population is involved mainly in subsistence farming, the importance of ensuring that learners develop basic skills in general agriculture, crop and animal production in relation to making a living cannot be overestimated

