



**education**

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Department:  
Education  
REPUBLIC OF SOUTH AFRICA

**NATIONAL CURRICULUM STATEMENT  
GRADES 10-12 (GENERAL)**

**LEARNING PROGRAMME GUIDELINES**

**AGRICULTURAL MANAGEMENT PRACTICES**

**JANUARY 2008**

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# SECTION 1

## INTRODUCTION

### 1.1 INTRODUCING THE NATIONAL CURRICULUM STATEMENT

#### 1.1.1 BACKGROUND

In 1995 the South African government began the process of developing a new curriculum for the school system. There were two imperatives for this. First, the scale of change in the world, the growth and development of knowledge and technology and the demands of the 21st Century required learners to be exposed to different and higher level skills and knowledge than those required by the existing South African curricula. Second, South Africa had changed. The curricula for schools therefore required revision to reflect new values and principles, especially those of the Constitution of South Africa.

The first version of the new curriculum for the General Education Band, known as Curriculum 2005, was introduced into the Foundation Phase in 1997. While there was much to commend the curriculum, the concerns of teachers led to a review of the Curriculum in 1999. The review of Curriculum 2005 provides the basis for the development of the Revised National Curriculum Statement for General Education and Training (Grades R–9) and the National Curriculum Statement for Grades 10–12.

#### 1.1.2 THE NATIONAL CURRICULUM STATEMENT

The National Curriculum Statement consists of 29 subjects. Subject specialists developed the Subject Statements which make up the National Curriculum Statement. The draft versions of the Subject Statements were published for comment in 2001 and then re-worked to take account of the comments received. In 2002 24 subject statements and an overview document were declared policy through Government Gazette. In 2004 five subjects were added to the National Curriculum Statement. The National Curriculum Statement now consists of the Subject Statements for the following subjects:

- Languages – 11 official languages (each counted as three subjects to cater for the three levels Home Language, First Additional Language and Second Additional Language); 13 non-official languages
- Mathematics; Mathematical Literacy; Physical Sciences; Life Sciences; Computer Applications Technology; Information Technology
- Accounting; Business Studies; Economics
- Geography; History; Life Orientation; Religion Studies
- Consumer Studies; Hospitality Studies; Tourism
- Dramatic Arts; Dance Studies; Design; Music; Visual Arts
- Agricultural Sciences, Agricultural Management Practices, Agricultural Technology

- Civil Technology; Mechanical Technology; Electrical Technology; Engineering Graphics and Design

### **1.1.3 NATIONAL SENIOR CERTIFICATE**

*The National Senior Certificate: A Qualification on Level 4 of the National Qualifications Framework (NQF)* provides the requirements for promotion at the end of Grades 10 and 11 and the awarding of the National Senior Certificate at the end of Grade 12. This document replaces two of the original National Curriculum Statement documents: the *Overview* and the *Qualifications and Assessment Policy Framework*.

### **1.1.4 SUBJECT ASSESSMENT GUIDELINES**

The Subject Assessment Guidelines set out the internal or school-based assessment requirements for each subject and the external assessment requirements. In addition, the *National Protocol for Recording and Reporting (Grades R-12)* (an addendum to the policy, *The National Senior Certificate*) has been developed to standardise the recording and reporting procedures for Grades R to 12. This protocol came into effect on 1 January 2007.

## **1.2 INTRODUCING THE LEARNING PROGRAMME GUIDELINES**

### **1.2.1 PURPOSE AND CONTENT OF THE LEARNING PROGRAMME GUIDELINES**

The Learning Programme Guidelines aim to assist teachers and schools in their planning for the introduction of the National Curriculum Statement. The Learning Programme Guidelines should be read in conjunction with the National Senior Certificate policy and the National Curriculum Statement Subject Statements.

Section 2 of the Learning Programme Guidelines suggests how teaching the particular subject may be informed by the principles which underpin the National Curriculum Statement.

Section 3 suggests how schools and teachers might plan for the introduction of the National Curriculum Statement. The Department of Education encourages careful planning to ensure that the high skills, high knowledge goals of the National Curriculum Statement are attained.

The Learning Programme Guidelines do not include sections on assessment. The assessment requirements for each subject are provided in the Subject Assessment Guidelines which come into effect on 1 January 2008.

### **1.2.2 WHAT IS A LEARNING PROGRAMME**

#### **INTRODUCTION**

A Learning Programme assists teachers to plan for sequenced learning, teaching and assessment in Grades 10 to 12 so that all Learning Outcomes in a subject are achieved in a progressive manner. The following three phases of planning are recommended:

- Phase 1 – develop a *Subject Framework* for grades 10 to 12
- Phase 2 – develop a *Work Schedule* for each grade
- Phase 3 – develop *Lesson Plans*

It is recommended that the teachers of a subject at a school or cluster of schools first put together a broad subject outline (Subject Framework) for the three grades to arrive at an understanding of the content of the subject and the progression which needs to take place across the grades (see Section 3.3.1). This will assist with the demarcation of content for each grade. Thereafter, teachers of the subject teaching the same grade need to work together to develop a year long Work Schedule. The Work Schedule should indicate the sequence in which the content and context will be presented for the subject in that particular grade (see Section 3.3.2). Finally, individual teachers should design Lesson Plans using the grade-specific Work Schedule as the starting point. The Lesson Plans should include learning, teaching and assessment activities that reflect the Learning Outcomes and Assessment Standards set out in the Subject Statements (see Section 3.3.3). Learning Programmes should accommodate diversity in schools and classrooms but reflect the core content of the national curriculum.

An outline of the process involved in the design of a Learning Programme is provided on page 6.

## **DESIGNING A LEARNING PROGRAMME**

A detailed description of the process involved in the design of a Learning Programme is provided in Sections 3.3.1 – 3.3.3 of the Learning Programme Guidelines. The first stage, the development of a Subject Framework does not require a written document but teachers are strongly advised to spend time with subject experts in developing a deep understanding of the skills, knowledge and values set out in the Subject Statements. The quality and rigour of this engagement will determine the quality of teaching and learning in the classroom.

Once the Subject Framework has been completed, teachers should develop Work Schedules and Lesson Plans. Examples of Work Schedules and Lesson Plans are provided in the Learning Programme Guidelines. Teachers are encouraged to critically engage with these formats and develop their own.

### **Developing a Subject Framework (Grades 10-12)**

Planning for the teaching of subjects in Grades 10 to 12 should begin with a detailed examination of the scope of the subject as set out in the Subject Statement. No particular format or template is recommended for this first phase of planning but the steps recommended should be used as a checklist.

Although no prescribed document is required for this stage of planning, school-wide planning (timetables, requisitioning, teacher development, classroom allocation) as well as the development of grade-specific work schedules would benefit from short documents which spell out:

- The scope of the subject – the knowledge, skills and values; the content; the contexts or themes; electives etc. to be covered in the three grades for each subject
- A three-year assessment plan for the subject
- The list of LTSM required for the subject

### **Designing Work Schedules**

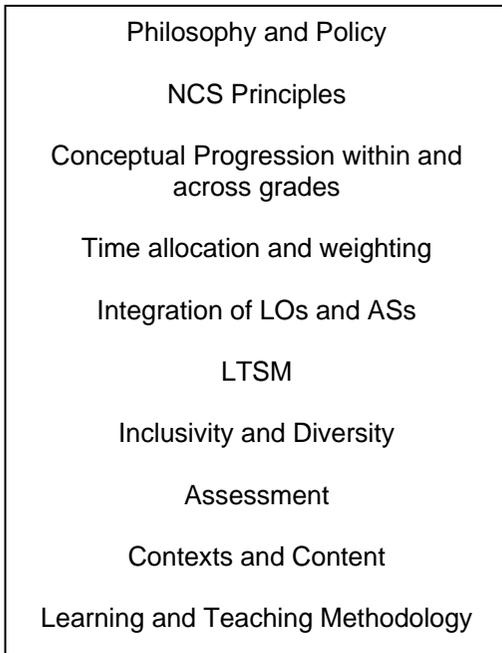
This is the second phase in the design of a Learning Programme. In this phase teachers develop Work Schedules for each grade. The Work Schedules are informed by the planning undertaken for the Subject Framework. The Work Schedules should be carefully prepared documents that reflect what teaching and assessment will take place in the 36-40 weeks of the school year.

### **Designing Lesson Plans**

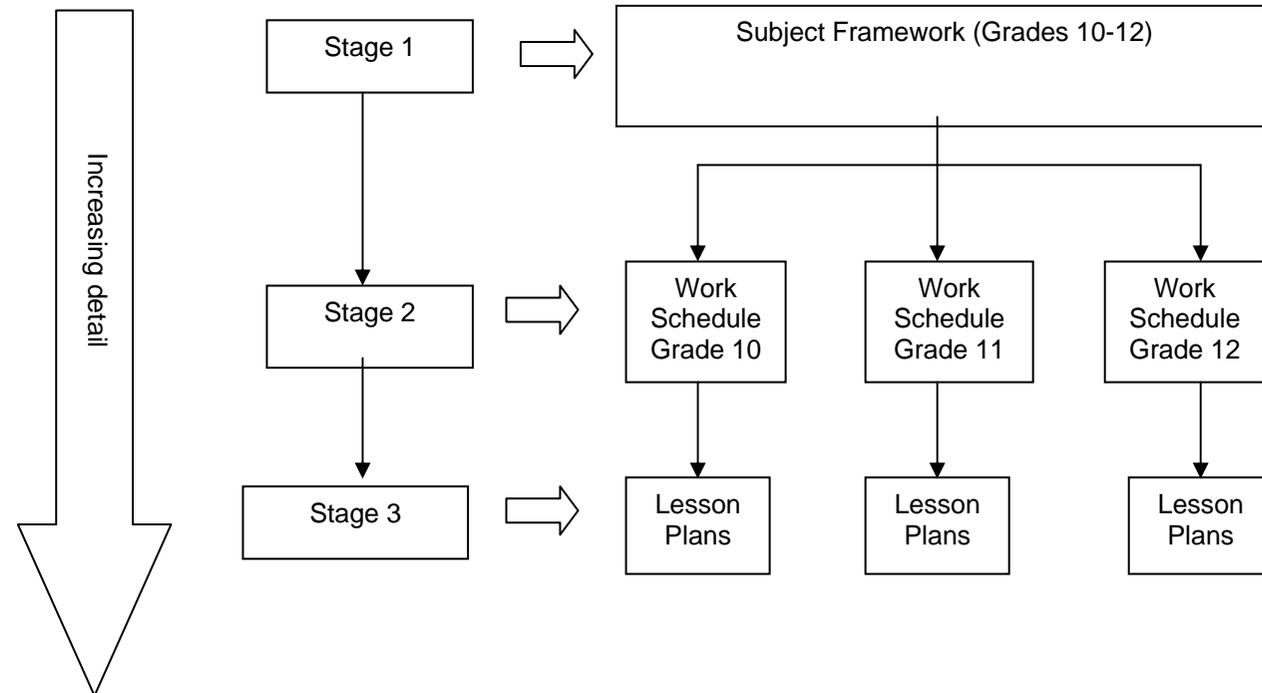
Each grade-specific Work Schedule must be divided into units of deliverable learning experiences, that is, Lesson Plans. Lesson Plans are not equivalent to periods in the school timetable and each contains a coherent series of teaching, learning and assessment activities. A Lesson Plan adds to the level of detail for each issue addressed in the Work Schedule. It also indicates other relevant issues to be considered when teaching and assessing a subject.

**FIGURE 1: RELATIONSHIP BETWEEN THE 3 STAGES OF PLANNING WHEN DEVELOPING A LEARNING PROGRAMME**

**ISSUES TO BE CONSIDERED**



**STAGES**



## SECTION 2

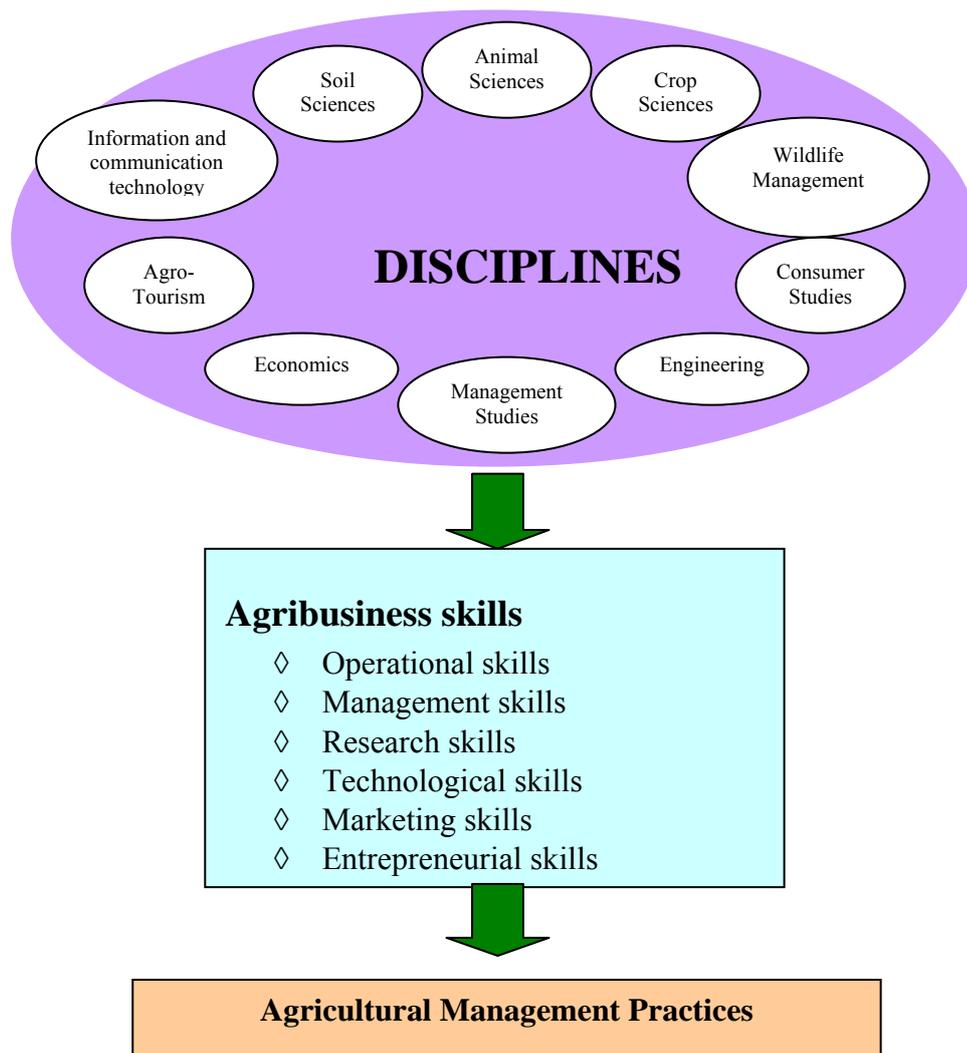
### INTRODUCING AGRICULTURAL MANAGEMENT PRACTICES

#### 2.1 WHAT IS AGRICULTURAL MANAGEMENT PRACTICES?

Agricultural Management Practices is the study and application of economic and management principles that are used in the production, transformation and marketing of food and agricultural products. The foregoing principles are used in the production and value adding of high quality agricultural products that have economic, aesthetic, social and cultural value.

Agricultural Management Practices draws knowledge and skills from disciplines such as Crop Sciences, Animal Sciences, Soil Sciences, Economics and Management Sciences, Engineering and Information and Communication Technology and links mainly with subjects like Agricultural Sciences, Agricultural Technology, Life Sciences, Consumer Studies, Mathematics, Physical Sciences, Geography, Accounting, Economics and Business Studies.

**FIGURE 2: DISCIPLINES AND SKILLS INVOLVED IN AGRICULTURAL MANAGEMENT PRACTICES**



The emphasis in Agricultural Management Practices is on the development of knowledge, skills and values within an agribusiness environment in order for a learner to achieve the following Learning Outcomes:

**Table 1: Learning Outcomes in Agricultural Management Practices**

LO 1 Knowledge and understanding of the interrelationships between Agricultural Management Practices, society and the environment.	<i>The learner is able to demonstrate knowledge and understanding of the interrelationship between Agricultural Management Practices, society and the environment</i>
LO 2 Management Practice Process.	<i>The learner is able to understand and apply the management practice process.</i>
LO 3 Knowledge and understanding of management practices in Agriculture.	<i>The learner is able to demonstrate an understanding of the principles and concepts used in Agricultural Management Practices.</i>
LO 4 Application of knowledge and skills in Agriculture.	<i>The learner is able to apply the principles, practices and skills used in Agricultural Management Practices by organising and managing activities in a responsible and effective way.</i>

The subject Agricultural Management Practices provides a unique framework for the attainment of a high level of knowledge, skills and values within an agribusiness environment. Furthermore, Agricultural Management Practices will emphasize the mastering of skills in the application of knowledge, gained within the various agricultural enterprises.

## 2.2 WHAT IS THE PURPOSE OF AGRICULTURAL MANAGEMENT PRACTICES?

Through the study of the subject Agricultural Management Practices, learners within their agro-ecological region will:

- understand the social and economic contribution of Agricultural Management Practices;
- foster a positive attitude towards rural lifestyle associated with farming in general;
- gain insights into the management of a farming enterprise;
- collect, analyse, evaluate and present agricultural information for improved decision making;
- master and apply the skills gained within Agricultural Management Practices;
- be competent, informed and demonstrate an awareness of Indigenous Knowledge Systems (IKS);
- enhance entrepreneurial skills through creative, innovative and critical thinking in agribusiness;
- identify and solve agribusiness management problems;
- understand the need to care for the environment through the sustainable management of natural resources; and
- effectively utilize relevant technology in agriculture.

## **2.3 WHAT IS THE RELATIONSHIP BETWEEN AGRICULTURAL MANAGEMENT PRACTICES AND THE NATIONAL CURRICULUM STATEMENT PRINCIPLES?**

*The Constitution of the Republic of South Africa (Act 108 of 1996)* provided a basis for curriculum transformation and development in South Africa. The National Curriculum Statement Grades 10-12 (General) provides a foundation for the achievement of these goals through the Learning Outcomes and Assessment Standards. The Agricultural Management Practices Subject Statement supports the application of the nine principles of the National Curriculum Statement as follows:

### **2.3.1 Social transformation**

Agricultural Management Practices will achieve social transformation through the development of the potential of the learner and the removal of artificial barriers to the attainment of qualifications within an agribusiness environment. Agricultural Management Practices aims to expose learners to the various principles in the production of food whether for subsistence or profit. Emphasis will be placed on national priorities within agriculture.

### **2.3.2 Outcomes-Based Education**

Agricultural Management Practices makes use of Learning Outcomes and Assessment Standards to describe what a learner should know and be able to demonstrate i.e. the skills, knowledge, and values that are the results of learning. Agricultural Management Practices builds its Learning Outcomes for Grades 10-12 on the Critical and Developmental Outcomes that were inspired by the Constitution.

### **2.3.3 High knowledge and high skills**

Agricultural Management Practices aims at developing knowledge and mastering of management, operational, and research skills in learners. It sets high expectations of what all South African learners can achieve.

### **2.3.4 Integration and applied competence**

Integration within a subject involves the grouping of Assessment Standards that link naturally. Integration should be used to enrich learning, teaching and assessment. Agricultural Management Practices allows for an integrated approach to learning, teaching and assessment in that the issues dealt with in the subject are integrated across the four Learning Outcomes of the subject. Agricultural Management Practices seeks to promote applied competence and aims at integrating three discrete competences- namely practical, foundational and reflective competences.

### **2.3.5 Progression**

Progression in Agricultural Management Practices refers to the process of developing more advanced and complex knowledge and skills. The progression across the grades is reflected in the degree of complexity of the content and context. Each Learning Outcome is followed by an explicit statement of the level of performance expected for the outcome per grade.

### **2.3.6 Articulation and Portability**

Agricultural Management Practices in Grades 10-12 links the exit levels of the General Education and Training (GET) Band and the entrance levels of careers within Agriculture and Higher Education and Training (HET).

### **2.3.7 Human Rights, Inclusively, Environmental and Social Justice**

Agricultural Management Practices acknowledges that all learners should be able to develop to their full potential provided they receive the necessary support. The intellectual, social, emotional, spiritual and physical needs of learners will be addressed through the design and development of appropriate Learning Programmes and through the use of appropriate assessment instruments.

### **2.3.8 Valuing Indigenous Knowledge Systems**

With IKS (Indigenous Knowledge Systems) people recognize the wide diversity of knowledge systems through which people make sense of and attach meaning to the world in which they live. In the South African context IKS refer to a body of knowledge embedded in African philosophical thinking and social practices that have evolved over thousands of years. An example of IKS in Agricultural Management Practices is the traditional way of conservation practices in sustaining livelihoods.

### **2.3.9 Credibility, quality and efficiency**

Agricultural Management Practices, as offered in South African schools, is comparable with other progressive countries. The Subject Statement, developed in consultation with local and international specialists, encapsulates the essence of progressive international thinking, adapted to South African conditions.

## **2.4 PROFILE OF AN AGRICULTURAL MANAGEMENT PRACTICES LEARNER**

Learners wishing to pursue a study of agricultural principles in the agribusiness environment and its use in a variety of situations are encouraged to take Agricultural Management Practices. Depending on the local circumstances, some learners may have a relatively advanced knowledge of content and communication skills within agriculture.

The learner, who chooses this subject, will do so for the following reasons, namely to:

- pursue further studies in agribusiness management in Higher Education Institutions and FET Colleges;
- embark on their own agribusiness enterprises (i.e. small- to medium- scale) for self-employment; and
- enter the formal labour market as junior managers in the agricultural industry in SA.

The Agricultural Management Practices learner should demonstrate the following qualities to excel in the subject:

- practical skills (i.e. operational skills)
- positive attitude towards learning Agriculture
- sensitivity to cultural diversity and responsibility to environmental management (i.e. sustainable management skills)
- communication and computer literacy (i.e. information technology skills)
- innovative, creative and critical thinking skills (i.e. entrepreneurial skills)
- logical, deductive and problem-solving skills (i.e. research skills).

They should also be able to apply agribusiness skills ethically and responsibly using appropriate information and communication technologies.

All four Learning Outcomes of Agricultural Management Practices have strong links with Learning Areas in the NCS for Grades R-9, namely Natural Sciences, Economic and Management Sciences, Mathematics, Languages, Life Orientation, Human and Social Sciences and Arts and Culture as illustrated in Table 2.1 below.

**Table 2.1 Comparison between NCS (Grades R-9) and NCS (Grades 10-12)**

<b>GET Learning Areas</b>	<b>Learning Outcomes NCS (Grades R-9)</b>	<b>Learning Outcomes NCS (Grades 10-12)</b>
Natural Sciences	1, 2 and 3	1, 2, 3 and 4
Economic and Management Sciences	3	3 and 4
Mathematics	4 and 5	3 and 4
Languages	1, 2, 3, 4, 5 and 6	1, 2, 3 and 4
Life Orientation	1, 2, 3, 4 and 5	1
Arts and Culture	1 and 4	3 and 4
Human and Social Sciences		4

## **2.5 RELATIONSHIP BETWEEN AGRICULTURAL MANAGEMENT PRACTICES LEARNING OUTCOMES AND CRITICAL AND DEVELOPMENTAL OUTCOMES**

The Critical and Developmental Outcomes can also be regarded as fundamental to the aims of Agricultural Management Practices. These outcomes enable learners to become competent and sensitive across a range of social contexts in the agricultural field.

The table below illustrates the relationship between the Critical and Developmental Outcomes, the Agricultural Management Practices Learning Outcomes and possible application in developing Agricultural Management Practices skills, knowledge and values.

**Table: 2.2 Relationship between Critical and Developmental Outcomes, Learning Outcomes and application in Agricultural Management Practices**

CRITICAL AND DEVELOPMENTAL OUTCOMES	APPLICATION IN AGRICULTURAL MANAGEMENT PRACTICES	AGRICULTURAL MANAGEMENT PRACTICES LEARNING OUTCOMES
<b>Identify and solve</b> problems and make decisions using critical and creative thinking.	Engage problem solving skills in order to provide innovative solutions that meet the needs of different stakeholders in agriculture	1, 2, 3 and 4
<b>Work effectively with others</b> as members of a team, group or organisation and community.	The agricultural management process requires participants to work together which involves sharing of ideas, developing interviewing skills, democratic practices and ethical responsibilities.	1, 2, 3 and 4
<b>Organise and manage</b> themselves and their activities responsibly and effectively.	Agricultural Management Practices learners should be self-disciplined, must be able to plan, organise and manage work, keep to time schedules, be committed to the task and take responsibility for their actions.	1, 2, 3 and 4
<b>Collect, analyse, organise and critically evaluate</b> information.	Learners should be able to observe and record data accurately so that they are able to analyse, interpret and critically evaluate information and apply it to the theory and practice of Agricultural Management Practices.	1, 2, 3 and 4
<b>Communicate effectively</b> using visual, symbolic and / or language skills in various modes.	Learners communicate through verbal, non-verbal and symbolic language forms that characterise the Agricultural field.	1, 2, 3 and 4
Use science and technology effectively and critically <b>showing responsibility</b> towards the environment and the health of others.	Concepts and agricultural practices of Agricultural Management Practices should demonstrate effective social, ethical and environmental responsibility.	1, 2, 3 and 4
Demonstrate an understanding of the world as a set of related systems by recognising that <b>problem solving contexts do not exist in isolation.</b>	Agricultural Management Practices enables learners to understand how their own problem solving activities are influenced by, or may impact on, local, national and global contexts.	1, 2, 3 and 4
<b>Reflect and explore</b> a variety of strategies to learn more effectively.	Agricultural Management Practices combines theory with practice which enables learners to continually evaluate their knowledge and skills while at the same time supporting and enhancing teaching and learning.	1, 2, 3 and 4
Participate as <b>responsible citizens</b> in the life of local, national and global communities.	Learners develop responsibility towards their communities - locally, nationally and globally - to understand the contribution of Agricultural Management Practices towards the development of a vibrant agribusiness.	1, 2, 3 and 4
Be <b>culturally and aesthetically sensitive</b> across a range of social contexts.	Agricultural Management Practices can influence or be influenced by other cultures and has the potential to be a powerful agent for change, transformation and affirmation.	1, 2, 3 and 4
<b>Explore</b> education and career opportunities.	The Agricultural Management Practices field offers a varied range of professional and vocational opportunities for learners to make a significant economic contribution to self and society through specific training.	1,2, 3 and 4
Develop <b>entrepreneurial</b> opportunities.	The Agricultural Management Practices field offers a varied range of professional and vocational opportunities through commitment to best practice, in enterprise management, product processing and marketing.	1, 2, 3 and 4

## **2.6 WAYS TO ACHIEVE AGRICULTURAL MANAGEMENT PRACTICES LEARNING OUTCOMES**

### **Resource materials**

Schools offering Agricultural Management Practices as a subject must have the necessary physical, human, educational and training resources to support the four required production lines, consisting of at least one Animal or Plant enterprise in a group of four enterprises. These production enterprises must at least be representative of each specific Agro-ecological region.

### **Approach to Agricultural Management Practices in the NCS**

The NCS encourages active learning, problem solving, lateral thinking, critical reflection, decision-making, and working co-operatively, in groups or independently. Agricultural Management Practices methodology promotes these skills.

Continuous Assessment allows learners and teachers the opportunity to continually reflect on the development and progression of skills, knowledge and values over a period of time, through a grade and through grades 10 to 12.

### **Every Learning Outcome should be achieved**

The Learning Outcomes for Agricultural Management Practices are the same for all grades. Learners have to achieve each Learning Outcome in order to proceed to the next grade. Each Learning Outcome has its own Assessment Standards, which give more detail with regard to content and context, and application of such content. The Assessment Standards describes ways of achieving the Learning Outcomes. They have been crafted in such a way that there is a natural progression in the development of skills, processes, concepts, content knowledge and values within as well as across grades. The performance of learners in the learning outcomes is measured against the Assessment Standards. Each grade builds on the competencies developed in the previous grade.

### **Interrelationship of Learning Outcomes**

The four Learning Outcomes of Agricultural Management Practices are integrated and not presented in any specific order. They should not be considered sequential as each one supports and underpins each other. According to Bloom's taxonomy model the learner should benefit from development of knowledge and intellect (Cognitive Domain); Attitude and beliefs (Affective Domain); and the ability to put physical and bodily skills into effect – to act (Psychomotor Domain). This approach supports and expands learners' opportunities to attain skills, acquire knowledge and develop values across the curriculum.

### **Content within context**

The content of Agricultural Management Practices needs to be dealt with in such a way as to assist the learner to progress towards the achievement of the Learning Outcomes. Content must serve the Learning Outcomes and not be an end in itself. The contexts suggested will enable the content to be embedded in situations that are meaningful to the learner and so assist learning and teaching. The teacher should be aware of and use local contexts, not necessarily indicated here, which could be more suited to the experiences of the learner.

It is however important to note that Agricultural Management Practices assessment does not only rely on the cognitive domain. The psychomotor domain also plays a very important role in Agricultural Management Practices.

The following taxonomy designed by Bloom provides a useful framework for assessment of Agricultural Management Practices:

Level		COGNITIVE Knowledge	AFFECTIVE Attitude	PSYCHOMOTOR Skills
1	Low Level	Recall data	Receive (awareness)	Imitation (copy)
2		Understand	Respond (react)	Manipulation (Follow instructions)
3	Medium Level	Apply (use)	Value (understand/act)	Develop precision
4		Analyse (Structure/ elements)	Organise personal value system	Articulation (Combine, integrate related skills)
5	High Level	Synthesize (Create/ build)	Internalise value system (Adopt behaviour)	Naturalization (Become expert)
6		Evaluate (assess, judge in relational terms)		

Agricultural Management Practices addresses skills development relating to manual tasks and physical involvement and it also covers modern day business and social skills such as the operation of IT equipment and communications. Skills extend beyond the traditionally imagined manual and physical skills; the following table illustrates the development of such activities that cut across all domains.

Level	BEHAVIOUR DESCRIPTIONS FOR COMPLEXITY LEVELS	EXAMPLES OF ACTIVITIES	KEYWORDS OF INSTRUCTIONS
1	Copy action of another: observe and replicate	Watch teacher or trainer and repeat action, process or activity	Copy, follow, replicate, repeat, adhere
2	Reproduce activity from instruction/memory	Carry out task from written or verbal instruction	Recreate, build, perform, execute, implement
3	Execute skill reliably, independent of help	Perform a task or activity with expertise	Demonstrate, complete, calibrate, show control
4	Adapt and integrate expertise to satisfy a non-standard objective	Relate and combine associated activities	Construct, combine, coordinate, integrate, develop, formulate, modify, master
5	Automated unconscious mastery of activity and related skills at strategic level	Define aim and design a strategy to meet strategic needs	Design, manage, invent, project manage

All the Learning Outcomes are of equal importance but not all have the same weighting in the allocation of time and resources. Learning Outcome 3 reflects knowledge and understanding, whilst Learning Outcome 4 deals with the application of this knowledge. These two outcomes are underpinned by Learning Outcome 1 and Learning Outcome 2, reflecting the interrelationship of Agricultural Management Practices, society and the environment as well as the managerial process that is used as the organising concept. See Annexure 1 for the content framework for Agricultural Management Practices.

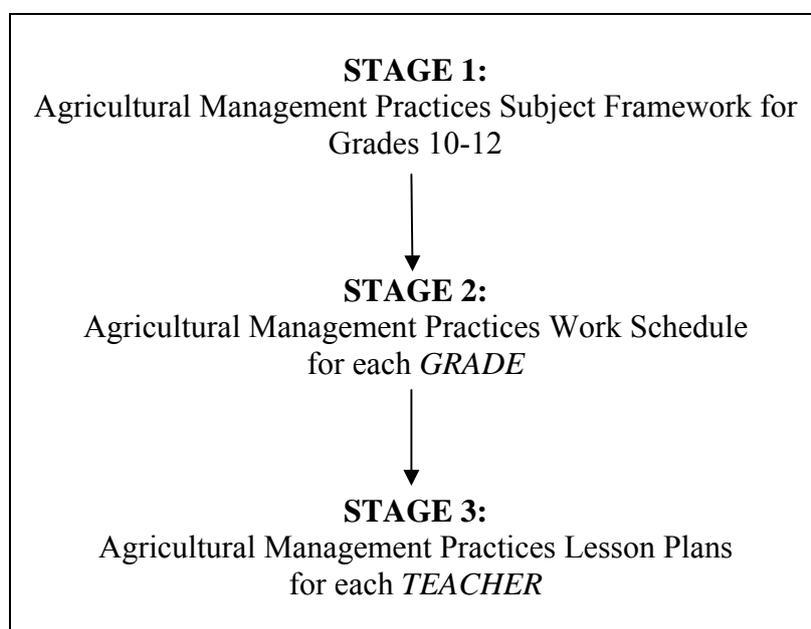
## SECTION 3

### DESIGNING A LEARNING PROGRAMME FOR AGRICULTURAL MANAGEMENT PRACTICES

#### 3.1 INTRODUCTION

A Learning Programme is a tool to plan for sequenced learning, teaching and assessment across Grades 10-12 so that all four Learning Outcomes in Agricultural Management Practices are achieved in a progressive manner. It is recommended that the Agricultural Management Practices teachers at a school first put together a broad subject outline (i.e. Subject Framework) for Grades 10-12 to arrive at an understanding of the progression which needs to take place across the grades (see Section 3.3.1). This will assist with the demarcation of content for each grade. Thereafter, Agricultural Management Practices teachers teaching the same grade need to work together and draw from the content and context identified for their grade in the Subject Framework, to develop a Work Schedule in which they indicate the sequence in which the content and context will be presented for Agricultural Management Practices in that particular grade (see Section 3.3.2). Finally, the individual Agricultural Management Practices teacher should design Lesson Plans using the grade-specific Work Schedule as the starting point. The Lesson Plans should include learning, teaching and assessment activities (see Section 3.3.3).

An outline of the process involved in the design of a Learning Programme for Agricultural Management Practices is provided in the diagram below:



The process to be followed in the development of a Learning Programme is not a neatly packaged sequence of numbered steps that follow one another in a particular order. Teachers may find themselves moving back and forth in the process as they plan and critically reflect on decisions taken before moving on to the next decision in the process. The process is therefore not strictly linear and is reflective in nature. For this reason the steps provided in this Section are a guide and should be used as a checklist in the planning process.

### 3.2 ISSUES TO ADDRESS WHEN DESIGNING A LEARNING PROGRAMME

The issues to be addressed in the development of an Agricultural Management Practices Learning Programme are presented in a tabular format to indicate the implications of each issue at each of the three stages of the development of a Learning Programme:

- Stage 1 – Subject Framework
- Stage 2 – Work Schedule
- Stage 3 – Lesson Plan

#### 3.2.1 Policies and Principles

<b>STAGE 1 Subject Framework</b>	The various Policies that impact on curriculum implementation should be considered throughout the planning process. <i>NCS:</i>
<b>STAGE 2 Work Schedule</b>	<ul style="list-style-type: none"> <li>• Principles: Refer to Section 2.3 to see how Agricultural Management Practices supports the application of the nine principles of the NCS</li> <li>• Critical and Developmental Outcomes: Refer to Section 2.5 to see how Agricultural Management Practices supports the application of the Critical and Developmental Outcomes</li> </ul>
<b>STAGE 3 Lesson Plan</b>	<i>Other Policies and Legislation:</i> <ul style="list-style-type: none"> <li>• White Paper 6, Language in Education Policy, Religion and Education Policy, HIV/AIDS Policy– all have implications for LTSM and teaching methods in Agricultural Management Practices</li> <li>• White Paper 7 – gives an indication on the use of computers in the classroom and therefore has implications for LTSM and teaching methods in Agricultural Management Practices</li> </ul>

#### 3.2.2 Content

In the NCS Grades 10-12 content means the combination of knowledge, skills and values.

<b>STAGE 1 Subject Framework</b>	The content is provided by the ASs. These give an indication of the knowledge, skills and values (KSVs) to be covered in each of the three grades. The Subject Framework sets out the content for the three years (i.e. Grades 10, 11 and 12).
<b>STAGE 2 Work Schedule</b>	The Work Schedule sets out the content for one year. Here the focus falls on the grade-specific KSVs required by the NCS.
<b>STAGE 3 Lesson Plan</b>	The Lesson Plans set out the content to be covered in each coherent series of learning, teaching and assessment activities. Each Lesson Plan can be one or more weeks in duration.

#### 3.2.3 Integration

Integration involves the grouping of Assessment Standards according to natural and authentic links.

<b>STAGE 1 Subject Framework</b>	Integration within the subject should be considered in broad terms during discussions at this stage. All Grade 10-12 teachers should consider integration of ASs within and across the grades.
<b>STAGE 2 Work Schedule</b>	The integration and sequencing of the ASs is undertaken in the Work Schedule to ensure that all ASs for a particular grade are covered in the 40-week contact period.
<b>STAGE 3 Lesson Plan</b>	The same groupings of LOs and ASs as arrived at in the Work Schedule should be used to develop a coherent series of learning, teaching and assessment activities for each Lesson Plan.

### 3.2.4 Conceptual Progression

<b>STAGE 1 Subject Framework</b>	The Subject Framework should indicate the increasing depth of difficulty across Grades 10-12. Progression across the three grades is shown in the ASs per Learning Outcome.
<b>STAGE 2 Work Schedule</b>	Progression in a grade is evident in the increasing depth of difficulty in that particular grade. Grade-specific progression is achieved by appropriately sequencing the groupings of integrated LOs and AS in the Work Schedule.
<b>STAGE 3 Lesson Plan</b>	In the individual Agricultural Management Practices classroom increasing depth of difficulty is shown in the activities and Lesson Plans. Progression is achieved by appropriately sequencing the activities contained within each Lesson Plan and in the series of Lesson Plans.

### 3.2.5 Time Allocation and Weighting

<b>STAGE 1 Subject Framework</b>	4 hours per week is allocated to Agricultural Management Practices in the NCS. This is approximately 160 hours per year. The teachers of the subject should plan how this time will be used for the teaching of Agricultural Management Practices in the three grades.
<b>STAGE 2 Work Schedule</b>	The groupings of ASs as arrived at in the integration process should be paced across the 40 weeks of the school year to ensure coverage of the curriculum.
<b>STAGE 3 Lesson Plan</b>	The amount of time to be spent on activities should be indicated in the Lesson Plans.

### 3.2.6 LTSM

LTSM refers to any materials that facilitate learning and teaching. LTSM need to be chosen judiciously because they have cost implications for the school and the learner. The NCS provides scope for the use of a variety of resources. All teachers and learners must have a textbook. However, teachers are required to go beyond the textbook. They do not necessarily need exotic, specialised materials. Rather common and readily available items can be used.

<b>STAGE 1 Subject Framework</b>	Compile a list of general LTSM (text books and other resources) that will be necessary and useful in the teaching, learning and assessment of the content. This assists with the requisition and availability of LTSM at a school.
<b>STAGE 2 Work Schedule</b>	List grade-specific LTSM (resources) required in the learning, teaching and assessment process for the grade.
<b>STAGE 3 Lesson Plan</b>	Identify specific resources related to the individual activities contained within a Lesson Plan.

### 3.2.7 Assessment

All grade 10 and 11 learners are expected to complete 7 assessment tasks including a Performance Assessment Task. All grade 12 learners are expected to complete 8 assessment tasks including an external examination and a Performance assessment task. See section 3 of the Subject Assessment Guidelines for Agricultural Management Practices for more information.

In order to administer effective assessment one must have a clearly defined purpose. It is important that all the tasks are well covered as spelt out in the Subject Assessment Guideline document. By answering the following questions the teacher can decide what assessment activity is most appropriate:

- What concept, skill or knowledge needs to be assessed?
- What should the learners know?
- At what level should the learners be performing?
- What type of knowledge is being assessed: reasoning, memory or process?

**Observation-based** assessment requires that learner performance be assessed while the learner is actually performing a skill in the classroom as there will be no concrete product for the teacher to assess after the performance. Not all observations need culminate in a formally recorded assessment of learner performance. **Performance-based** assessment relies on the availability of a product as evidence of learner performance that can be assessed by the teacher after the completion of the performance. Test-based assessment focuses on assessing the presentation and application of knowledge.

<b>STAGE 1 Subject Framework</b>	Develop a three-year assessment plan using the Subject Assessment Guidelines for Agricultural Management Practices. This should ensure the use of a variety of assessment forms relevant to the subject and progression across the three grades.
<b>STAGE 2 Work Schedule</b>	Use the Subject Assessment Guidelines for Agricultural Management Practices to develop a grade-specific assessment plan. The forms of assessment listed must facilitate the achievement of the particular LOs and ASs in each grouping.
<b>STAGE 3 Lesson Plan</b>	Indicate more classroom-specific assessment strategies, by mentioning the methods, forms and tools that will be used to assess learner performance in each activity. HINT: Not all activities need to be assessed – some may just be introductory in nature or for enrichment. The choice of an assessment strategy is determined by the LOs and ASs that have been grouped together for a particular Lesson Plan. The assessment strategy chosen must facilitate the achievement of these particular LOs and ASs in the classroom.

### 3.2.8 Inclusivity and Diversity

The following steps can be taken to effectively address diversity in the classroom when planning Agricultural Management Practices teaching activities:

- consider individual past experiences, learning styles and preferences;
- develop questions and activities that are aimed at different levels of ability;
- provide opportunity for a variety of participation levels such as individual, pairs and small group activities;
- consider the value of individual methods ; and
- assess learners based on individual progress.

<b>STAGE 1 Subject Framework</b>	Teachers should be sensitive to inclusivity and diversity when identifying content, teaching styles and methods, forms of assessment and LTSM (Resources). Diversity should be accommodated in the following areas:
<b>STAGE 2 Work Schedule</b>	<ul style="list-style-type: none"> <li>• Learning styles: provide optional activities / different ways of doing same activity</li> <li>• Pace of learning: provide for both slower and faster learners by providing optional extra activities, reading or research, as well as multiple assessment opportunities</li> <li>• Differences in levels of achievement: provide optional extra activities, challenges and materials that cater for these differences between learners.</li> <li>• Gender diversity: ensure that teachers do not inadvertently allow or contribute towards discrimination against boys or girls in the classroom on the basis of gender.</li> <li>• Cultural diversity: recognise, celebrate and be sensitive when choosing content, assessment tasks and LTSM.</li> </ul>
<b>STAGE 3 Lesson Plan</b>	This is catered for as EXPANDED OPPORTUNITIES in the Lesson Plan. Enrichment is provided for high achievers and remediation or other relevant opportunities for learners requiring additional support. It is not necessary to develop an activity to cater for each type of diversity which arises in the classroom. Teachers may find it possible to cater for different diversities within one activity with effective planning.

### 3.2.9 Learning and Teaching Methodology

<b>STAGE 1 Subject Framework</b>	It is not necessary to record Teaching Methods for either of these stages.
<b>STAGE 2 Work Schedule</b>	
<b>STAGE 3 Lesson Plan</b>	This is catered for as TEACHING METHOD in the Lesson Plan. It provides an indication of how teaching and learning will take place, that is, how each activity will be presented in the classroom.

## 3.3 DESIGNING A LEARNING PROGRAMME

A detailed description of the process involved in the design of a Learning Programme for Agricultural Management Practices is provided in this section (see Sections 3.3.1 – 3.3.3). The process presented here is a suggestion of how to go about designing a Learning Programme.

### 3.3.1 Subject Framework (Grades 10-12) for Agricultural Management Practices

Planning for the teaching of Agricultural Management Practices in Grades 10 to 12 should begin with a detailed examination of the scope of the subject as set out in the Subject Statement. No particular format or template is recommended for this first phase of planning but the five steps provided in Table 3.1 should be used as a checklist.

Although no prescribed document is required for this stage of planning, school-wide planning (timetables, ordering, teacher development, classroom allocation) as well as the development of grade-specific work schedules would benefit from short documents which spell out:

- The scope of the subject – the knowledge, skills and values; the content; the contexts or themes; electives etc. to be covered in the three grades (see Annexure 1)
- A three-year assessment plan
- The list of LTSM required

### 3.3.2 Designing Work Schedules for Agricultural Management Practices

This is the second phase in the design of a Learning Programme. In this phase teachers develop Work Schedules for each grade. The Work Schedules are informed by the planning undertaken for the Subject Framework. The Work Schedules should be carefully prepared documents that reflect what teaching and assessment will take place in the 40 weeks of the school year. Table 3.1 provides steps on how to approach the design of a Work Schedule. See Annexure 2 for examples of Work Schedules for Grades 10, 11 and 12.

### 3.3.3 Designing Lesson Plans for Agricultural Management Practices

Each grade-specific Work Schedule for AGRICULTURAL MANAGEMENT PRACTICES must be divided into units of deliverable learning experiences, that is, Lesson Plans. A Lesson Plan adds to the level of detail in the Work Schedule. It also indicates other relevant issues to be considered when teaching and assessing Agricultural Management Practices.

A Lesson Plan is not equivalent to a subject period in the school timetable. Its duration is dictated by how long it takes to complete the coherent series of activities contained in it.

Table 3.1 provides steps on how to approach the design of Lesson Plans. See Annexure 3 for examples of Lesson Plans.

### **3.3.4 Reflection and review of the Agricultural Management Practices Learning Programme**

After the Learning Programme has been delivered by means of Lesson Plans in the classroom, the teacher should reflect on what worked, how well it worked and what could be improved. Teachers need to note these while the experience is still fresh in their minds, so that if necessary, they can adapt and change the affected part of the Agricultural Management Practices Learning Programme for future implementation. It is advisable to record this reflection on the Lesson Plan planning sheets.

**Table 3.1: The following steps provide guidelines for the design of a Learning Programme for Agricultural Management Practices:**

	<b>Subject Framework for Agricultural Management Practices (Grades 10-12)</b>	<b>Work Schedule for Agricultural Management Practices (per grade)</b>	<b>Lesson Plans for Agricultural Management Practices</b>
Step 1	<p><b>Clarify the Learning Outcomes and Assessment Standards.</b></p> <p>The essential question for Agricultural Management Practices is: What Learning Outcomes do learners have to master by the end of Grade 12 and what Assessment Standards should they achieve to show that they are on their way to mastering these outcomes?</p> <p>All learning, teaching and assessment opportunities must be designed down from what learners should know, do and produce by the end of Grade 12. The Learning Outcomes and Assessment Standards that learners should master by the end of Grade 12 are specified in the Agricultural Management Practices Subject Statement.</p>	<p><b>Package the content.</b></p> <p>Study the Learning Outcomes and Assessment Standards prescribed for the particular grade in Agricultural Management Practices and group these according to natural and authentic links.</p>	<p><b>Indicate the content, context, Learning Outcomes and Assessment Standards.</b></p> <p>Copy this information from the Work Schedule for the particular grade.</p>
Step 2	<p><b>Study the conceptual progression across the three grades.</b></p> <p>Study the Assessment Standards for Agricultural Management Practices across the three grades. Progression should be clearly evident across the grades.</p>	<p><b>Sequence the content.</b></p> <p>Determine the order in which the groupings of Learning Outcomes and Assessment Standards will be presented in the particular grade in Agricultural Management Practices. Besides the conceptual progression in the Assessment Standards for Agricultural Management Practices, context can also be used to sequence groupings in Agricultural Management Practices.</p>	<p><b>Develop activities and select teaching method.</b></p> <p>Decide how to teach the Learning Outcomes and Assessment Standards indicated in Step 1 and develop the activity or activities that will facilitate the development of the skills, knowledge and values in the particular grouping. Thereafter, determine the most suitable teaching method(s) for the activities and provide a description of how the learners will engage in each activity.</p>

	<b>Subject Framework for Agricultural Management Practices (Grades 10-12)</b>	<b>Work Schedule for Agricultural Management Practices (per grade)</b>	<b>Lesson Plans for Agricultural Management Practices</b>
Step 3	<p><b>Identify the content to be taught.</b></p> <p>Analyse the Assessment Standards to identify the skills, knowledge and values to be addressed in each grade. Also consider the content and context in which they will be taught.</p>	<p><b>Pace the content.</b></p> <p>Determine how much time in the school year will be spent on each grouping of Learning Outcomes and Assessment Standards in the particular grade.</p>	<p><b>Consider diversity.</b></p> <p>Explore the various options available within each activity that will allow expanded opportunities to those learners that require individual support. The support provided must ultimately guide learners to develop the skills, knowledge and values indicated in the grouping of Learning Outcomes and Assessment Standards.</p>
Step 4	<p><b>Identify three-year plan of assessment.</b></p> <p>Use the Subject Assessment Guidelines to guide the three-year assessment plan. Consider what forms of assessment will be best suited to each of the Learning Outcomes and Assessment Standards. This ensures that assessment remains an integral part of the learning and teaching process in Agricultural Management Practices and that learners participate in a range of assessment activities. See Subject Assessment Guidelines.</p>	<p><b>Review forms of assessment.</b></p> <p>Revisit the forms of assessment listed for the particular grade in the Subject Assessment Guidelines, and refine them to address each grouping of Learning Outcomes and Assessment Standards as developed in Step 1. See Subject Assessment Guidelines.</p>	<p><b>Review assessment and LTSM.</b></p> <p>Indicate the details of the assessment strategy and LTSM to be used in each activity.</p>
Step 5	<p><b>Identify possible LTSM (resources).</b></p> <p>Consider which LTSM will be best suited to the learning, teaching and assessment of each Learning Outcome in the three grades using the Assessment Standards as guidance.</p>	<p><b>Review LTSM.</b></p> <p>Revisit the LTSM (resources) listed for the particular grade in the Subject Framework, and refine them to address each grouping of Learning Outcomes and Assessment Standards as developed in Step 1.</p>	<p><b>Allocate time.</b></p> <p>Give an indication of how much time will be spent on each activity in the Lesson Plan.</p>

## ANNEXURE 1: CONTENT FRAMEWORK FOR AGRICULTURAL MANAGEMENT PRACTICES

The following tables provide an indication of the content that should be addressed per Assessment Standard in Learning Outcomes 3 and 4 in each of Grades 10, 11 and 12. The skills highlighted in Learning Outcomes 1 and 2 should be presented in combination with the content suggested for Learning Outcomes 3 and 4.

### Grade 10

<b>The learner is able to apply</b>		
	<b>Assessment Standards</b>	<b>Possible content</b>
<b>10.3.1</b>	identifying and describing management principles used in crop and animal production enterprises	<b>Management functions</b> <ul style="list-style-type: none"> <li>▪ Planning</li> <li>▪ Coordination</li> <li>▪ Motivation</li> <li>▪ Control and Communication.</li> </ul>
<b>10.4.2</b>	identifying basic management aspects related to various agricultural production enterprises	
<b>10.3.2</b>	identifying and describing farming systems (subsistence/ commercial regarding inputs, production and markets), and the classification (types, breeds, cultivars) of crop and animal production enterprises	<b>Introduction to production enterprises</b>  <b>Crop production</b> <ul style="list-style-type: none"> <li>▪ Farming systems</li> <li>▪ Classification of crops according to agronomic characteristics of seed and plant</li> <li>▪ Main cultivars available within each crop.</li> </ul> <b>Animal production: Farming systems</b> <ul style="list-style-type: none"> <li>▪ General classification of farm animals</li> <li>▪ Breeds available within each animal group.</li> </ul>
<b>10.4.3</b>	demonstrating the handling of animals and the use of basic agricultural equipment according to the manufacturer's instruction manual and the OHS Act	
<b>10.3.3</b>	demonstrating an awareness of the economic importance of crop and animal production enterprises	<b>Economic importance of crop and animal production</b>  <b>Crop production</b> <ul style="list-style-type: none"> <li>▪ Crop production factors and an overview of economic importance of crop production</li> <li>▪ Potential role in industry</li> <li>▪ Main production areas in the RSA.</li> </ul> <b>Animal production</b> <ul style="list-style-type: none"> <li>▪ Animal production factors and an overview of economic importance of production</li> <li>▪ Potential role in industry</li> <li>▪ Main production areas in the RSA</li> <li>▪ Farming systems.</li> </ul>

**Grade 10 continued**

<b>The learner is able to apply</b>		
	<b>Assessment Standards</b>	<b>Possible content</b>
<b>10.3.4</b>	investigating and describing general soil- and water management practices (use and care, soil nutrition, climatic requirements) in plant and animal production	<p><b>Soil and water management</b></p> <p><b>Crop production</b></p> <ul style="list-style-type: none"> <li>▪ General climatic requirements (temperature, rainfall, humidity, evaporation and radiation)</li> <li>▪ Collection of weather data</li> <li>▪ Basic soil aspects</li> <li>▪ Land use and care</li> <li>▪ Soil cultivation methods and types of implements</li> <li>▪ Irrigation and drainage (methods and types).</li> </ul> <p><b>Animal production</b></p> <ul style="list-style-type: none"> <li>▪ Waste management</li> <li>▪ Land care and land use</li> <li>▪ Water resources.</li> </ul>
<b>10.3.5</b>	acquiring general knowledge (establishment, protection, nutrition, reproduction, aftercare) and distinguishing between various crop and animal management practices	<p><b>General knowledge and management principles</b></p> <p><b>Crop management aspects</b></p> <ul style="list-style-type: none"> <li>▪ Crop establishment practices: Plant density, depth and methods (factors influencing each)</li> <li>▪ Weed (methods, types and control)</li> <li>▪ Disease (methods, types and control)</li> <li>▪ Pest (methods, types and control)</li> <li>▪ Crop rotation, mono-culture and inter-cropping</li> <li>▪ Keeping of records (Financial, Physical, Production records)</li> <li>▪ Crop protection programmes and</li> <li>▪ Awareness of relevant legislation.</li> </ul>
<b>10.4.1</b>	planning and investigating, collecting, organising and analysing information (e.g. soil aspects, reproduction, nutrition & aftercare) in order to apply agricultural principles and identify basic agricultural problems	<p><b>Animal management aspects</b></p> <ul style="list-style-type: none"> <li>▪ Handling of farm animals</li> <li>▪ Care of farm animals</li> <li>▪ Behaviour of farm animals</li> <li>▪ Housing and facilities</li> <li>▪ After-care of animals (dehorning, removal of extra teats, castration etc.)</li> </ul>
<b>10.4.4</b>	applying and using basic information technology skills to enhance production enterprises  (e.g. crop rotation, simple records and health programmes)	<ul style="list-style-type: none"> <li>▪ Identification methods (earmarks, tattooing, ear tags etc.)</li> <li>▪ Basic concepts of feeding (classification and terminology)</li> <li>▪ Diseases (identification, types, and methods of control)</li> <li>▪ Parasites: internal and external (identification, types and methods of control)</li> <li>▪ Keeping of records (Financial, Physical, Production and Health records)</li> <li>▪ Management programmes and</li> <li>▪ Awareness of relevant legislation.</li> </ul>

## Grade 11

<b>The learner is able to apply</b>		
	<b>Assessment Standards</b>	<b>Possible content</b>
<p><b>11.3.1</b></p> <p><b>11.4.2</b></p>	<p>identifying, describing and explaining management principles used in specific crop and animal production enterprises</p> <p>identifying management aspects (e.g. planning, organising, control, evaluation, feedback) related to production aspects related to agro-ecological region to solve agricultural related problems</p>	<p><b>Management</b></p> <ul style="list-style-type: none"> <li>▪ Management principles used in specific crop and animal production enterprises.</li> </ul>
<p><b>11.3.2</b></p> <p><b>11.4.3</b></p>	<p>identifying, describing and explaining farming systems, as utilized by specific crop and animal production enterprises</p> <p>demonstrating the responsible (ethical treatment) handling of animals and the use of related agricultural equipment according to the manufacturer’s instruction manual and the OHS Act</p>	<p><b>Farming systems</b></p> <ul style="list-style-type: none"> <li>▪ Intensive</li> <li>▪ Extensive and</li> <li>▪ Semi-intensive.</li> </ul> <p><b>Crop production</b></p> <ul style="list-style-type: none"> <li>▪ Main production areas in the RSA and potential role in industry</li> <li>▪ Overview of economic importance of crop production</li> <li>▪ Classification of crops according to agronomic characteristics of seed and plant</li> <li>▪ Growth curve and critical period during growth</li> <li>▪ Important cultivars available within each selected crop and reasons for use</li> <li>▪ Methods of crop protection and</li> <li>▪ Precision farming.</li> </ul> <p><b>Animal production</b></p> <ul style="list-style-type: none"> <li>▪ Breed standards (evaluation and judging a breed)</li> <li>▪ Selection of breeding stock (progeny testing; general appearance; selection procedures)</li> <li>▪ Breeding systems (e.g. cross breeding, inbreeding, etc) and</li> <li>▪ Breeding aids (e.g. stud-book registers; production records etc.</li> </ul>
<p><b>11.3.3</b></p>	<p>identifying, describing and explaining the economic importance of specific crop and/or animal production enterprises</p>	<p><b>Crop production (specific crop)</b></p> <ul style="list-style-type: none"> <li>▪ Main production areas in the RSA and potential role in industry</li> <li>▪ Economic importance</li> <li>▪ Potential role in industry</li> <li>▪ Overview of economic importance of crop production</li> <li>▪ Keeping of records (Financial, Physical and Production records)</li> <li>▪ Crop protection programme.</li> </ul> <p><b>Animal production</b></p> <ul style="list-style-type: none"> <li>▪ Economic importance</li> <li>▪ Potential role in industry</li> <li>▪ Main production areas</li> <li>▪ Keeping of records (Financial, Physical and Production records)</li> <li>▪ Crop protection programme.</li> </ul>

## Grade 11 continued

<p><b>11.3.4</b></p>	<p>investigating, characterizing and analysing soil and water management aspects (use and care, soil nutrition, climatic requirements) for specific crop and animal production enterprises</p>	<p><b>Soil and water management aspects</b></p> <p><b>Crop and animal production</b></p> <ul style="list-style-type: none"> <li>▪ Soil sampling and profile studies</li> <li>▪ Soil characteristics and properties</li> <li>▪ Soil cultivation and tillage practices (methods and aims)</li> <li>▪ Irrigation (methods and types)</li> <li>▪ Water scheduling where applicable</li> <li>▪ Climatic requirements: precipitation, temperature, evaporation, radiation, humidity</li> <li>▪ Use of weather information</li> <li>▪ Risk management.</li> </ul> <p><b>Fertilizer management and application</b></p> <ul style="list-style-type: none"> <li>▪ Soil and plant analyses</li> <li>▪ Fertilizing according to soil analyses</li> <li>▪ Fertilizing methods and programme.</li> </ul>
<p><b>11.3.5</b></p> <p><b>11.4.1</b></p> <p><b>11.4.4</b></p>	<p>acquiring specific knowledge (establishment, protection, nutrition, reproduction, aftercare) and distinguishing management practices (breeding program, fodder flow, health program, yearly program) related to the relevant crop and animal production enterprises</p> <p>planning and investigating collecting, organising and analysing information (e.g. soil analyses, reproduction, nutrition &amp; aftercare) in order to apply agricultural principles in production aspects related to agro-ecological region to solve agricultural related problems</p> <p>applying and using information technology skills to enhance specific production enterprises (e.g. breeding programmes, basic crop simulation programmes)</p>	<p><b>Enterprise specific management practices</b></p> <p><b>Crop management aspects</b></p> <ul style="list-style-type: none"> <li>▪ Crop establishment practices</li> <li>▪ Basic principles and terminology (e.g. plant density, depth and planting time, treatment of seed, methods and factors influencing each)</li> <li>▪ Weeds (types, identification, prevention, methods of control)</li> <li>▪ Disease (types, identification, prevention, methods of control)</li> <li>▪ Pests (types, identification, prevention, methods of control)</li> <li>▪ Principles of crop rotation, mono-culture, inter-cropping</li> <li>▪ Calibration and setting of different farm implements</li> <li>▪ Manipulation of plant growth (pruning, trellising, green housing, etc.)</li> <li>▪ Production related legislation; and farmer health issues.</li> </ul> <p><b>Animal Production</b></p> <ul style="list-style-type: none"> <li>▪ Reproduction: Aspects related to production unit (Oestrus cycle, mating, Artificial Insemination, embryo transplant, cloning, gestation period, service register)</li> <li>▪ Housing and facilities: Types and function</li> <li>▪ After care: Applying of de-horning, castration, identification etc.</li> <li>▪ Disease: Types, identification of symptoms, prevention, methods of control</li> <li>▪ Animal handling and facilities</li> <li>▪ Basic veterinary practices: diagnostic procedure, blood smear, blood sample and tissue sample</li> <li>▪ Immunology: active and non active</li> <li>▪ Parasitology: internal and external types, identification, prevention, methods of control</li> <li>▪ Treatment of sick animals: injections, dosing, types of injuries</li> <li>▪ Feeding aspects according to physiological status</li> <li>▪ Requirements, rations, procedures and methods</li> <li>▪ Production related legislation</li> <li>▪ Farmer health issues</li> </ul> <p><b>Rangeland management (compulsory for ruminant enterprises)</b></p> <ul style="list-style-type: none"> <li>▪ Objectives of veld management</li> <li>▪ Grazing systems: Extensive and Intensive principles (selective grazing, non selective grazing, rotational grazing etc)</li> <li>▪ Utilization (fodder flow planning)</li> <li>▪ Carrying capacity and relevant terminology and</li> <li>▪ Veld composition and determining of carrying capacity.</li> </ul>

**Grade 12**

<b>The learner is able to apply</b>		
	<b>Assessment Standards</b>	<b>Possible content</b>
12.3.1  12.4.2	<p>analysing and explaining management principles used in the relevant agribusinesses</p> <p>identifying management aspects (e.g. planning, organising, control, evaluation, feedback) related processing and marketing aspects related to the specific agribusiness in a given agro-ecological region</p>	<p><b>Relevant Agribusiness management functions</b></p> <ul style="list-style-type: none"> <li>▪ Planning</li> <li>▪ Coordination</li> <li>▪ Motivation</li> <li>▪ Control</li> <li>▪ Communication.</li> </ul>
12.3.2  12.4.3	<p>analysing farming systems, as utilized by specific crop and animal production enterprises</p> <p>demonstrating the responsible (ethical treatment) handling of animals and the use of related agricultural equipment according to the manufacturer’s instruction manual and the OHS Act</p>	<p><b>Farming Systems</b></p> <ul style="list-style-type: none"> <li>▪ Any system</li> </ul> <p><b>Farm Planning Aspects: (comparison)</b></p> <ul style="list-style-type: none"> <li>▪ Physical and biological planning (camps, contours, soil, resource utilization, precision farming, mechanisation)</li> <li>▪ Economical: financial introduction to farm budget, balance sheets, cash flow summary and income statement</li> <li>▪ Management and utilization of labour and implements.</li> </ul>
12.3.3	<p>analysing the economic and financial aspects of specific agribusiness enterprises or supply chains</p>	<p><b>Record keeping</b></p> <ul style="list-style-type: none"> <li>▪ Recording of physical data</li> <li>▪ Recording of financial data</li> <li>▪ Refer to suitable production records for updating relevant data.</li> </ul>
12.3.4	<p>analysing the post-harvesting, product assessment practices and other value adding activities (marketing and processing) for relevant enterprises</p>	<p><b>Post harvesting and value adding</b></p> <p><b>Product harvesting</b></p> <ul style="list-style-type: none"> <li>▪ Harvesting and product collection procedures, as required for the specific enterprise</li> <li>▪ Post-harvest and product assessments: Sorting and grading, as required for the specific enterprise</li> <li>▪ Marketing as required for different enterprises</li> <li>▪ The role of producer organizations for specific enterprises.</li> </ul> <p><b>Value adding</b></p> <ul style="list-style-type: none"> <li>▪ Produce regarding relevant enterprise</li> <li>▪ Processing (relevant enterprises)</li> <li>▪ Packaging and distribution</li> <li>▪ Marketing and control</li> <li>▪ Agro-tourism.</li> </ul>

**Grade 12 continued**

<b>The learner is able to apply</b>		
	<b>Assessment Standards</b>	<b>Possible content</b>
<b>12.3.5</b>	applying specific knowledge related to the relevant crop and animal production enterprises in an agribusiness environment	<b>Enterprise specific management practices</b> <b>Entrepreneurship</b> <ul style="list-style-type: none"> <li>▪ Development of business plan</li> <li>▪ Industry attachment and project report preparation.</li> </ul>
<b>12.4.1</b>	planning and investigating, collecting, organising and analysing information in order to apply agricultural principles in processing and marketing aspects (e.g. value adding) related to the specific agribusiness in a given agro-ecological region, to predict and solve agricultural related problems through responsible decision-making	
<b>12.4.4</b>	applying and using information technology skills to enhance specific agribusiness practices (e.g. record keeping, cash flow, basic feed formulation and fodder flow programs)	

## ANNEXURE 2: WORK SCHEDULES FOR GRADES 10-12

### Example of a Grade 10 Work Schedule for Agricultural Management Practices

Duration	Context	Content	Learning Outcomes	Assessment	Resources
2 weeks 8 hours	<b>Crop production</b> Introduction to crop production	<ul style="list-style-type: none"> <li>▪ Crop production factors and an overview of economic importance of crop production;</li> <li>▪ Potential role in industry;</li> <li>▪ Main production areas in the RSA ;</li> <li>▪ Farming systems;</li> <li>▪ Classification of crops according to agronomic characteristics of seed and plant; and</li> <li>▪ Main cultivars available within each crop.</li> </ul>	LO 1 LO 2 LO 3 LO 4	Observation Projects Assignments Presentation Homework Classwork	Books Charts Field charts Excursions Brochures ARC-leaflets
7 weeks 28 hours	<b>Soil and water management in crop production</b>          <b>Soil and water management in animal production</b>	<ul style="list-style-type: none"> <li>▪ General climatic requirements (temperature, rainfall, humidity, evaporation and radiation)</li> <li>▪ Collection of weather data;</li> <li>▪ Basic soil aspects;</li> <li>▪ Land use and care;</li> <li>▪ Soil cultivation methods and types of implements; and</li> <li>▪ Irrigation and drainage (methods and types).</li> <li>▪ Waste management;</li> <li>▪ Land care and land use; and</li> <li>▪ Water resources.</li> </ul>		Formal test Informal test Examinations Worksheets Portfolio Case studies Research Practical work Management task Measurement Demonstration Field trip	Multi media such as internet Electronic media (DVD,CD) Videos Magazines Farming equipment Animals Plant facilities Agricultural experts Guidelines Specimens Maps Photos
2 weeks 8 hours	<b>Crop management aspects</b>	<ul style="list-style-type: none"> <li>▪ Crop establishment practices: Plant density, depth and methods (factors influencing each);</li> <li>▪ Weed (methods, types and control);</li> <li>▪ Disease (methods, types and control);</li> <li>▪ Pest (methods, types and control); and</li> <li>▪ Crop rotation, monoculture and inter- cropping.</li> <li>▪ Keeping of records (financial, physical, production records);</li> <li>▪ Crop protection programmes; and awareness of relevant legislation.</li> </ul>			
11 weeks 44 hours	<b>Animal production</b> Introduction to animal production	<ul style="list-style-type: none"> <li>▪ Animal production factors and an overview of economic importance of production;</li> <li>▪ Potential role in industry;</li> <li>▪ Main production areas in the RSA;</li> <li>▪ Farming systems;</li> <li>▪ General classification of farm animals; and</li> <li>▪ Breeds available within each animal group.</li> </ul>			

<b>Duration</b>	<b>Context</b>	<b>Content</b>	<b>Learning Outcomes</b>	<b>Assessment</b>	<b>Resources</b>
11 weeks 44 hours	<b>Animal management aspects:</b>	<ul style="list-style-type: none"> <li>▪ Handling of farm animals;</li> <li>▪ Care of farm animals;</li> <li>▪ Behaviour of farm animals;</li> <li>▪ Housing and facilities;</li> <li>▪ After-care of animals (dehorning, removal of extra teats, castration etc.);</li> <li>▪ Identification methods (earmarks, tattooing, ear tags etc);</li> <li>▪ Basic concepts of feeding (classification and terminology);</li> <li>▪ Diseases (identification, types, and methods of control);</li> <li>▪ Parasites: internal and external (identification, types and methods of control);</li> <li>▪ Keeping of records (financial, physical, production and health records);</li> <li>▪ Management programmes; and</li> <li>▪ Awareness of relevant legislation.</li> </ul>	LO 1 LO 2 LO 3 LO 4		
2 weeks 8 hours	<b>Management principles</b>	<ul style="list-style-type: none"> <li>▪ Definition of management</li> <li>▪ Management principles <ul style="list-style-type: none"> <li>▪ Planning</li> <li>▪ Control</li> <li>▪ Coordination</li> <li>▪ Motivation</li> <li>▪ Communication.</li> </ul> </li> </ul>			
5 weeks		<b>Revision and examinations</b>			

### Example of a Grade 11 Work Schedule for Agricultural Management Practices

Duration	Context	Content	Learning Outcomes	Assessment	Resources
2 weeks 8 hours	<b>Crop production</b>	<ul style="list-style-type: none"> <li>• Main production areas in the RSA and potential role in industry;</li> <li>• Overview of economic importance of crop production;</li> <li>• Classification of crops according to agronomic characteristics of seed and plant;</li> <li>• Growth curve and critical period during growth; and</li> <li>• Important cultivars available within each selected crop, reasons for use.</li> </ul>	LO 1 LO 2 LO 3 LO 4	Observation Projects Assignments Presentation Homework Classwork Formal test Informal test Examinations Worksheets Portfolio Case studies Research Practical work Management task Measurement Demonstration	Videos Books Charts Field charts Excursions Brochures ARC-leaflets Multi media such as internet Electronic media (DVD,CD) Magazines Farming equipment Animals Plant facilities Agricultural experts Guidelines Specimens Maps Photos
4 weeks 16 hours	<b>Soil and water management aspects</b>	<ul style="list-style-type: none"> <li>▪ Soil sampling and profile studies;</li> <li>▪ Soil characteristics and properties;</li> <li>▪ Soil cultivation and tillage practices (methods and aims);</li> <li>▪ Irrigation (methods and types);</li> <li>▪ Water scheduling where applicable;</li> <li>▪ Climatic requirements: precipitation, temperature, evaporation, radiation, humidity; and</li> <li>▪ Use of weather information.</li> </ul>			
2 weeks 8 hours	<b>Fertilizer management and application</b>	<ul style="list-style-type: none"> <li>▪ Soil and plant analyses;</li> <li>▪ Fertilizing according to soil analyses; and</li> <li>▪ Fertilizing methods and programme.</li> </ul>			
10 weeks 40 hours	<b>Crop management aspects</b>	<ul style="list-style-type: none"> <li>▪ Crop establishment practices</li> <li>▪ Basic principles and terminology (e.g. Plant density, depth, planting time, treatment of seed, methods and factors influencing each);</li> <li>▪ Weeds: Types, identification, prevention, methods of control;</li> <li>▪ Disease: Types, identification, prevention, methods of control;</li> <li>▪ Pests: Types, identification, prevention, methods of control;</li> <li>▪ Principles of crop rotation, mono-culture, inter-cropping;</li> <li>▪ Calibration and setting of different farm implements;</li> <li>▪ Methods of crop protection;</li> <li>▪ Precision farming;</li> <li>▪ Manipulation of plant growth (pruning, trellising, green housing etc.);</li> <li>▪ Keeping of records (financial, physical and production records)</li> <li>▪ Crop protection programme;</li> <li>▪ Production related legislation, farmer health issues; and</li> <li>▪ Risk management.</li> </ul>			





## ANNEXURE 3: EXAMPLES OF LESSON PLANS

### Example 1 of a Lesson Plan for Agricultural Management Practices

<b>Teacher:</b> _____		<b>School:</b> _____						
<b>Duration of lesson:</b> 2 weeks		<b>Grade:</b> 10		<b>Class:</b> <input type="text"/>				
		<b>Learning Outcomes</b>	<b>Assessment Standards</b>					
			1	1	2	3	4	5
			2	1	2	3	4	5
			3	1	2	3	4	5
		4	1	2	3	4		
<b>Knowledge Area: Soil and water management</b>		<b>Assessment</b>		<b>Strategies/Method of Assessment collection</b>				
<b>Sub-content:</b> Irrigation methods		<b>Method</b>	<b>Tools</b>	<b>Test based</b>	<b>Observation based</b>	<b>Task based</b>		
<b>Prior Knowledge</b>		Peer	Mark sheet	• Test	•	• Presentation		
		Self	Rubric	•	•	•		
		Teacher		•	•	•		
<b>Teacher's actions</b>	<b>Learners' activities</b>	<b>Resources</b>		<b>Assessment Evidence</b>	<b>Estimated time</b>			
Divide learners into groups.  Provide and expose learners to resources for the activity.  Teaching moment	<b>Activity: 1</b> Learners identify and collect information and pictures of irrigation systems from magazines and paste on a poster.  <b>Activity: 2</b> Learners identify the irrigation systems represented on the poster.  <b>Activity: 3</b> Learners write possible advantages and disadvantages of the irrigation systems represented on the poster.  <b>Activity: 4 (Practical Activity)</b> Learners identify the most suited irrigation system for a specific need and specified conditions	Magazines, marking pens pair of scissors, bostik, flip charts, Koki pens  Worksheet  Homework book, learners guide.  Visit to different irrigation plots.	Learners identify and collect information and pictures of water management equipment.  Learners identify the equipment related to water management equipment represented on the poster.  Learners write possible advantages and disadvantages of the irrigation systems represented on the poster.  Learners apply their knowledge by identifying the most suited water management equipment for specified conditions ( <i>Groupwork</i> )  Learners need to know the required knowledge involved in this area (individual assessment)	3 hours minimum  1 Hour  1 Hour  2 Hours				
<b>Homework</b> Worksheets in which they inset information they obtained from relevant agricultural resources  <ul style="list-style-type: none"> <li>Practical Activity (Performance based)</li> <li>(Develop irrigation system for the school yard and sport grounds)</li> </ul>		<b>Expanded opportunities</b> <ul style="list-style-type: none"> <li>Learners get exposure to irrigation systems and soil as medium.</li> </ul> <b>Special needs</b> <ul style="list-style-type: none"> <li>Attend to those learners with barriers to learning. Slow learners guided with extra time</li> </ul> <b>Enrichment</b> <ul style="list-style-type: none"> <li>Reporting skills, research skills-finding facts about ecological regions in South Africa.</li> </ul>						

## Example 2 of a Lesson Plan for Agricultural Management Practices

<b>Teacher:</b> _____		<b>School:</b> _____						
<b>Duration of lesson:</b> 2 weeks		<b>Grade:</b> 11		<b>Class:</b> <input type="text"/>				
<b>Knowledge Area: Soil and water management</b>		<b>Learning Outcomes</b>	<b>Assessment Standards</b>					
			1	1	2	3	4	5
			2	1	2	3	4	5
			3	1	2	3	4	5
		4	1	2	3	4		
		<b>Strategies/Method of Assessment collection</b>						
<b>Sub-content:</b> Soil cultivation methods		<b>Method</b>	<b>Tools</b>	<b>Test based</b>	<b>Observation based</b>	<b>Task based</b>		
<b>Prior Knowledge</b>		Self	Mark sheet	• Test	• Worksheet	• Presentation • Practical		
		Teacher	Rubric					
<b>Teacher's actions</b>	<b>Learners' activities</b>	<b>Resources</b>		<b>Assessment Evidence</b>	<b>Estimated time</b>			
Explaining the different methods	<b>Activity: 1</b> Collect pictures of different implements for primary soil cultivation and present in a written report	Magazines, marking pens, pair of scissors, bostik, flip charts and khoki pens		Learners identify and collect information and pictures of required equipment.	2 hours minimum			
Showing the different types of implements used.	<b>Activity: 2</b> Draw conclusion from above activity to indicate which implements are used for different conditions.	Worksheet		Learners identify the equipment required for the various cultivation methods.	1 Hour			
Explaining the principles.	<b>Activity: 3 (Demonstration)</b> Demonstrate the implements on the farm and their action during soil cultivation.	Video/ CD on different implements, Field visit		Learners match the implements to different soil types and their influence on the soil.	2 Hours			
	<b>Activity: 4 (Practical)</b> Comparison between the no-till and other different cultivation methods	Visit site of activity		Learners must observe action and depth of disturbance on the soil surface.  Learners need to know knowledge involved in this area (individual assessment)	3 Hours			
<b>Homework</b> Worksheets in which they inset information they obtained from relevant agricultural resources		<b>Expanded opportunities</b>						
<ul style="list-style-type: none"> <li>▪ Practical Activity (Performance based)</li> <li>▪ Implements and their impact during cultivation.</li> </ul>		<ul style="list-style-type: none"> <li>▪ Expose learners to research stations and their role in soil cultivation research.</li> </ul>						
		<b>Special needs</b>						
		<ul style="list-style-type: none"> <li>▪ Attend to those learners with barriers to learning. Slow learners guided with extra time</li> </ul>						
		<b>Enrichment</b>						
		<ul style="list-style-type: none"> <li>▪ Reporting skills, research skills-finding facts about ecological regions in South Africa.</li> </ul>						

### Example 3 of a Lesson Plan for Agricultural Management Practices

<b>Teacher:</b> _____		<b>School:</b> _____						
<b>Duration of lesson:</b> 2-3 weeks		<b>Grade:</b> 11		<b>Class:</b> <input type="text"/> <input type="text"/> <input type="text"/>				
		<b>Learning Outcomes</b>	<b>Assessment Standards</b>					
			1	1	2	3	4	5
			2	1	2	3	4	5
			3	1	2	3	4	5
		4	1	2	3	4		
<b>Knowledge Area:</b> Animal production		<b>Assessment</b>		<b>Strategies/Method of Assessment collection</b>				
<b>Sub-content:</b> Wool production: Wool Quality		<b>Method</b>	<b>Tools</b>	<b>Test based</b>	<b>Observation based</b>	<b>Task based</b>		
		Peer	Mark sheet	• Test	•	• Presentation		
<b>Prior Knowledge</b>		Teacher	Rubric	•	•	• Practical		
				•	•	•		
<b>Teacher's actions</b>	<b>Learners' activities</b>	<b>Resources</b>		<b>Assessment Evidence</b>	<b>Estimated time</b>			
Explaining wool growth and relevant aspects.	<b>Activity: 1</b> Learners complete a worksheet on wool growth and fibre characteristics	Worksheet		Learners need to know how wool growth takes place.	1 hours minimum			
Explain the difference between wool and other fibres	<b>Activity: 2</b> Learners must know the different fibres wool compete against in the industry.	IT Centre, resource book, examples of fibres		Learners present a poster that shows the different fibres in the clothing industry.	2 Hours			
Explain and show the characteristics of high quality wool	<b>Activity: 3 (Practical)</b> Learners must sort the different types of wool according to the different classes.	Wool fleeces, skirtings obtained during shearing		Learners apply their knowledge by identifying the wool qualities by sorting wool pieces into its respective classes.	3 Hours			
	<b>Activity: 4 (Practical)</b> Learners need to know how a wool fleece is prepared for the marketing process.	Wool press, Sorting bins, sorting table, scale, marking pens, etc.		Learners need to know knowledge involved in this area (individual assessment)  Learners given the opportunity to throw a wool fleece and skirt it.	3 Hours			
<b>Homework</b> Worksheets in which they inset information they obtained from relevant agricultural resources		<b>Expanded opportunities</b>						
<ul style="list-style-type: none"> <li>▪ Practical Activity (Performance based)</li> <li>▪ Wool fleece and the classing of wool. Learners are given the opportunity to complete a wool sorting course at BKB or CMW.</li> </ul>		<ul style="list-style-type: none"> <li>▪ Those learners interested can be given the opportunity to complete a wool classing course in grade 12</li> </ul>						
		<b>Special needs</b>						
		<ul style="list-style-type: none"> <li>▪ Attend to those learners with barriers to learning.</li> <li>▪ Slow learners guided with extra time.</li> </ul>						
		<b>Enrichment</b>						
		<ul style="list-style-type: none"> <li>▪ Reporting skills, research skills-finding facts about other fibres found in the industry.</li> </ul>						