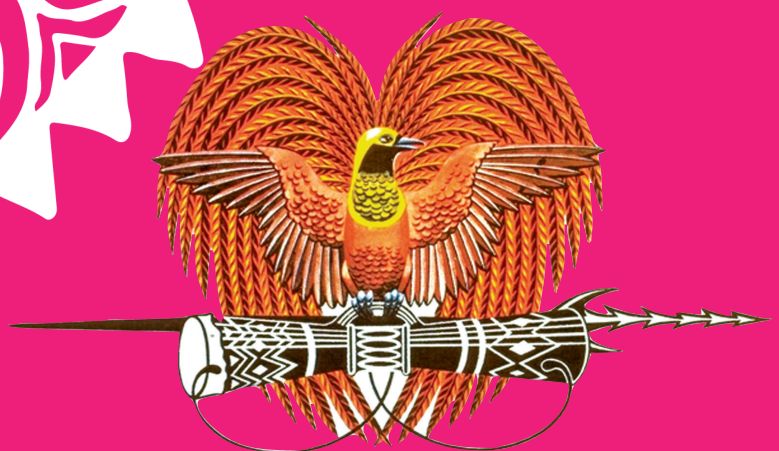


Making A Living

Teacher Guide

Grade 6

Standards Based



Papua New Guinea
Department of Education

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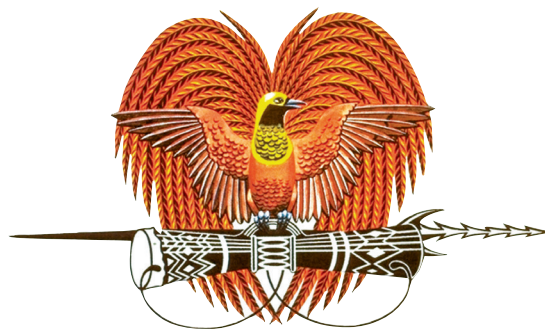


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Secretary's Message

This Making a Living Teacher Guide for Grade 6 is written to complement the implementation of the Senior Primary syllabus in compliance to the governments directive for the revision of the curriculum to be based on standards Based Approach. The Standards based Approach to curriculum development and teaching focuses on defining the purpose and reasons for teaching and the content to be learnt in relation to the national standards set by the national educational systems or organizations. In this context, the content standards are outlined in the syllabus with the benchmarks and assessment tasks.

The Teacher guide draws out the subject matter of the Content Standards and Benchmarks and modeled through the guided lessons and other lessons from the text books. Hence, the teacher guide is viewed as a guiding document to complement what is provided in the syllabus and text books. It provides the necessary information and teaching strategies on how to achieve the content standard in the syllabus. Guided lesson plans, Assessment tasks and Assessment rubrics for the content standards are also outlined in the Teacher guide.

The Making a Living curriculum has been revised to address current and emerging issues relating to effective resource management, financial literacy and technology for sustainable development as well as address and bridge the knowledge and skills gaps between senior primary and high school. The new strands - Crop and Livestock Farming, Business Environment and Practices and Basic Technology captured in this realigned curriculum encompass studies of many of the processes that are necessary for Agriculture, Business Studies and Technology subjects in grades 9 and 10 at the high school level.

Teachers are encouraged to read this teacher guide carefully to become familiar with the content so that they can be confident to use the new concepts and strategies as well as teach the content well. They can also adjust to suit the needs of the students.

I recommend and approve this Grade 6 Making a Living Teacher Guide to be used in all primary and junior high schools throughout Papua New Guinea.



DR. UKE. W. KOMBRA (PHD)
Secretary for Education



Introduction

The Grade 6 Making a Living Teacher Guide is developed as a support curriculum material for the Making a Living syllabus. The document draws out the subject matter of the content standards and benchmarks and modeled through the guided lessons and other lessons from the text books. It provides guidelines on how to plan and program teaching and learning for Making a Living with yearly, termly, and weekly programs.

How to use the Teacher Guide

You must use this teacher guide with the syllabus when planning Making a Living lessons. In your planning and preparations, consider the following:

- how the lessons will be delivered;
- the time required to undertake different activities;
- the materials and resources required for the lesson;
- prepare learning activities that will motivate students to think critically to design, create, produce and construct practical projects;
- how to design creative and interactive teaching and learning environment;
- when, where and how to use benchmarks in relation to attainment of standards;
- creating assessment tasks and how to plan them to achieve identified content standards;
- the necessary skills and attitudes to model; and
- how to assess what is taught.

Use this teacher guide to help you design your teaching programs, lesson and assessment plans. Therefore you need to:

- read this teacher guide and syllabus very carefully to understand the content and what; you will require for your classroom teaching;
- be familiar with the syllabus strands, units, topics and lesson topics;
- read and understand the content standards and benchmarks;
- read and understand how the assessment plans and tasks are structured so that you can design appropriate assessment plans; and
- read and understand the structure and content of sample guided lessons.

The Making a Living teacher Guide is organized according to Strands and Units. There are 3 Strands which are arranged into teaching units for the year as shown in this table.



Table of Strands and Units

Strand	Units
Crop & Livestock Farming	<ul style="list-style-type: none"> • Crop farming • Livestock farming • Land and water resource management
Business Environment and Practices	<ul style="list-style-type: none"> • Satisfying needs and wants • Starting a business and record keeping • Business communication services
Basic Technology	<ul style="list-style-type: none"> • Introduction to resistant materials • Home management • Media and communication • Introduction to resistant materials • Home management • Media and communication

Making a Living is given a total time of 160 minutes per week- that is giving 2x40 minutes of theory lessons and 1x 80 minutes of practical projects.

This Teacher Guide presents to the teachers information on how to teach and the various options teachers should consider when planning for implementation of the Making a Living syllabus learning content in this grade. The teacher guide also includes recommended Knowledge, Skills, Attitudes and Values for each of the content standards as well as sample assessment tasks and how to record and report students achievements. You are encouraged to select and adapt the strategies and processes illustrated in the guide to meet the needs of your students.

Purpose

This Teacher Guide must be used in conjunction with the Grades 6, 7 & 8 Syllabus. The main purpose is to implement the syllabus in the classroom. The Teacher Guide provides you with guidelines and directions to help you plan and develop teaching and learning activities for the achievement of Content Standards and Benchmarks. It provides you with information and processes to:

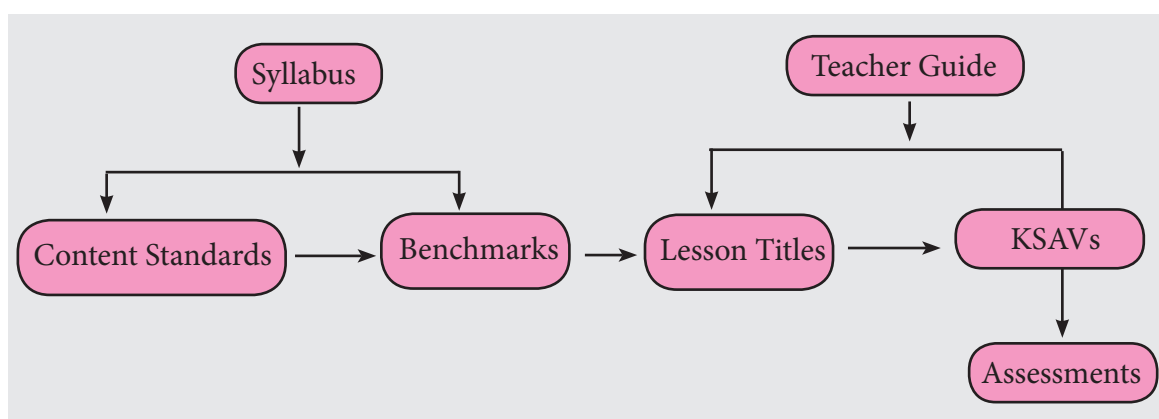
- understand and expand on the relevant knowledge, skills, attitudes and values (KSAVs) provided in this guide;
- develop teaching programs based on your school contexts;
- plan and develop daily lesson activities; and
- plan and conduct assessments to monitor students' achievements.

Teachers are required to read carefully and use the guidelines in the Teacher Guide to plan and develop teaching and learning programs. The guide contains the following main components:

- Yearly and term overview which consists of all strands, units, topics and lesson titles;
- Sample weekly program or timetable;
- Suggested daily plans which consists of guided lessons and KSAVs;
- Assessment tasks and rubrics; and
- Support resources for use when planning and programming.



Links between the key components of the Syllabus and the Teacher Guide



Key features

The key features outlined in this section are identified as unique to Making a Living and important in the planning, development and implementation of whole school programs. The key features of the Grades 6 to 8 Making a Living curriculum, emphasizes recommended knowledge, skills and processes and provide ideas on how to teach Making a Living.

Nature of Making a Living

This Making a Living course is a revised version of the Making a Living presently used in schools. Most of the original strands have been replaced with the three new strands to cater for content which was watered down from the previous outcomes based curriculum and the content place under specific unit topics. The subject integrates relevant skills in Agriculture, Business and Technology that are essential for progressive learning from one level to the next. Students are engaged in practical activities linking their head, heart and hands (knowledge, skills and attitudes) that enable them to:

- work in creative, innovative and enterprising ways to produce their own products to meet their needs in a variety of contexts;
- work in a range of diverse learning environments;
- develop necessary skills and knowledge to generate an income;
- become active and productive members of the community;
- implement specific techniques and processes to enable them to manage their own lives;
- undertake practical and real life projects that focus on developing economic independence; and
- work towards improving their quality of life and be compatible within a world driven by technology.



Making a Living without a Practical Skills and Home Economics building

Making a Living processes and procedures can be taught and learned without a conventional home economics and practical skills building as well as agricultural and commercial setting in the school. Making a Living without a building is a reality for many Papua New Guinean schools. With this understanding, the Grades 6-8 Making a Living Syllabus together with the Teacher guides have been specifically designed to assist teachers in planning and designing worthwhile learning opportunities for all students irrespective of the school's context and availability of resources. Students and teachers are encouraged to use the resources that are readily available to them in their local context to interact with and create practical activities. Local context and community involvement become very important in this approach.

Links with other grades

Scope of Learning for Making a Living

Elementary	Junior Primary	Senior Primary	Junior High	Senior High
Culture and Community	<ul style="list-style-type: none"> • Social science • Health • Arts 	<ul style="list-style-type: none"> • Making a Living 	<ul style="list-style-type: none"> • Design & Technology • Business Studies • Agriculture • Arts 	<ul style="list-style-type: none"> • Design & Technology • ICT • Computer Studies • Tourism • Business Studies • Applied Natural Resource Management

The content of Grade 6 Making a Living is a buildup of what is covered in the elementary culture and community, junior primary social science and arts which comes under the culture and community learning area. Much content in these learning areas lacked emphasis in the Outcomes based curriculum and has created knowledge and skills gaps with missing links by grade and level. The content of Making a Living in Senior primary grades was reviewed, realigned and repositioned with three new strands, **crop and livestock farming, business environment** and **practices and basic technology** in the standards based curriculum. These new strands cater for these missing gaps and allow for progressive learning across all grade levels.

Business and technology course in high school draws heavily from these three new strands, **Crop and Livestock Farming, Business Environment** and **Practices and Basic technology**. These practical skills enable students to be prepared for further technical training in technical vocational schools and advance aspects of business and technology in tertiary institutions. It is very important to ensure learning is contextual so that the knowledge, understanding and skills acquired are meaningful and practical to students.

This important subject contains the basic fundamental concepts of business and technology and links to high school and further progresses to technical and



vocational schools and tertiary institutions. These fundamental life skills form the basis of student's technical skills development which will equip students with essential life skills, knowledge and attitudes to become self-reliant and live entrepreneurial lives after leaving formal education now and in the future.

Subject Background

The realigned Making a Living curriculum comes under the Business and Technology learning pathway which focuses on vocational and technical skills development. The instructional programs developed in various kinds of practical activities aim to promote basic technical skills development and wellbeing of the individual.

Making a Living is taught in Grades 6 to 8 and the concepts of Making a Living is further taught in High school level. In the past Making a Living was considered as a non-core subject and less emphasis was given to teaching this very important subject. Making a Living subject in primary level fosters basic technical skills to equip and enable students to further venture into the advance stage of business and technology in further technical training in technical vocational schools both in country and overseas education. However, in this present time it is considered that modern technology is the center of a country's development therefore Making a Living subject sets a foundation to compete within a world driven by business and technology. These will equip students with fundamental practical skills for further education and life after formal education.

Fundamental technical and vocational skills are vital for student's integral development to meet family, community, country and the world's demands. Currently technical skills needs more emphasis therefore it is anticipated that engaging in practical skills activities will improve standard of living and further contributes to the country's economic development.

Students will live entrepreneurial lives and have competence in some concepts of technology. Basic Technology skills offered through the Making a Living curriculum should be seen as an important subject. Therefore it is imperative that all teachers plan and teach this subject well.

Facilities and Equipment

Teachers are encouraged to use facilities and equipment available in their local surroundings to effectively deliver and meaningful practical hands on Making a Living lessons. There are tools and mechanical facilities in communities apart from the school which teachers can access to teach their Making a Living programs.

The availability of tools will vary from school to school. A lack of tools should not be used as an excuse for not doing practical activities. This is a challenge for schools to overcome. One option is to develop a collection of improvised tools for making things. Borrowing tools from parents of the students could be another option. Involving parents in project activities might also be a way of encouraging them to share their tools with the class. Informing parents of the necessity of tools for Making a Living projects might lead to them putting pressure on the



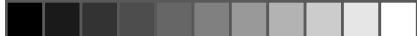


schools Board of Management to allocate funds for basic supplies. The school needs to budget to provide a basic kit of equipment for Making a Living practical activities. These items are expensive. They need to be used appropriately to prevent unnecessary damage, maintained thoroughly, appropriately cared for and stored securely when not in use.

These facilities and equipment may include:

- sewing machines, stoves, firewood, scraper;
- carpentry tools and simple machines;
- availability of land;
- livestock enclosures;
- fish ponds;
- trade stores;
- markets;
- timber;
- financial and non-financial institutions; and
- equipment and resources available in the local environment.





Teaching and learning strategies

Making a Living is a practical subject that focuses on “learning by doing” rather than passive listening and observing. The syllabus promotes a student centred approach to learning. Making living lessons must promote practical learning and teaching. Teaching strategies guide the teacher in disseminating the lesson content with appropriate learning strategies.

Teachers should provide real life and relevant learning experiences for students to practice and develop critical thinking, problem solving, and decision making in what they produce. For effective learning, the students’ acquisition of knowledge, skills, attitudes and values in a lesson is highly achieved through appropriate teaching and learning strategies. Consider how students learn in order to select appropriate teaching and learning strategies.

Teenagers are curious about the world they live in teachers must engage them and motivate them in our classrooms. Teachers must ensure to offer them inquiry and problem based learning. By giving students the opportunity to develop creativity and imagination through doing we are imparting important thinking tools.

Inquiry learning

Inquiry learning places students at the centre of the curriculum and provides a range of learning opportunities that are reflective of their interests and relevance. Students should be given opportunities to develop valuable skills such as higher order thinking, collaborating, negotiating, information seeking, forming opinions, decision making, problem solving and communicating solutions.

Theory learning

Theory learning requires students to define, describe or explain and analyse the parts and functions of a tool, a plant or an animal. This type of learning often takes place in a classroom setting.

Practical learning

Practical learning requires the teacher to demonstrate the steps or process of performing a skill such as spraying chemicals on crops, sewing a dress, making and cutting a specific joint in carpentry or weaving a basket. Practical learning is effective when students observe the process in the demonstration and apply the skills in a familiar setting.

Experiential learning

Experiential learning is a process when a teacher allows learning to take place in a field or place of work. Students discover new knowledge as they practice the skill in a real life situation. Students are effectively involved in learning by observing and doing and also interacting with the work environment using ‘all



their senses. Making a Living emphasizes the experiential learning approach for students to achieve the syllabus content standards.

Basic principles of teaching and learning

Teachers should:

- use real life or concrete examples as projects;
- encourage hands on learning experiences;
- develop local and community based projects;
- provide purposeful and meaningful learning experience;
- promote critical thinking and problem solving skills;
- encourage interaction with a range of individuals and contexts; and
- encourage active community participation.

Strategies that promote student- centred learning

A student centred approach focuses on learning as being the active construction of meaning by students and teaching as the act of guiding and facilitating learning. The following are examples of teaching and learning strategies that promote student - centred learning:

- building on students 'prior knowledge';
- bringing the community and its resources into the school and providing opportunities for students to go out into the community to learn; and
- providing opportunities for problem solving, decision making and taking action.

Teaching strategies

To assist and encourage students to learn, you perform certain tasks. These are referred to as teaching strategies. You need to engage students directly in teaching but there are times when you have to take charge of the learning in class and teach particular concepts and ideas.

Summary of teaching strategies

The process skills of investigation, planning, designing, implementation, producing and evaluation are essential and fundamental for teaching Making a Living. In each learning situation students are expected to investigate, plan, implement and evaluate their projects. Teachers need to use a range of teaching strategies in their teaching and learning activities.

The table below provides examples of teaching strategies to use in each of the process skills.



Process skills	Teaching and learning strategies
Investigation	<ul style="list-style-type: none">• Brainstorming• Surveys• Structured questionnaires• Focus groups• Problem solving
Planning	<ul style="list-style-type: none">• Projects• Problem solving• Skills practice• Group work
Implementation	<ul style="list-style-type: none">• Demonstration• Modeling• Field trips• Group work• guest speakers
Marketing	<ul style="list-style-type: none">• Individual sales• Group sales
Evaluation	<ul style="list-style-type: none">• Discussion• Group work• Journal writing• Problem solving• seminars

Using groups as a teaching and learning strategy in Making a Living lessons

Using groups is an important strategy in Making a Living. Group work encourages students to participate in achieving a shared goal and collaborative learning. In deciding whether to use groups or not, you need to consider:

- your intended content standards;
- the extent to which the performance can be achieved by a group;
- the lesson content;
- the time allocated for the completion of the task;
- the classroom setting;
- available materials and resources; and
- the structure of the group based on gender, ability, cultural background and student preferences.

Groups work well when:

- the group decides upon their goal and time lines the tasks;
- students realize that success depends on the achievement of the whole group, not individuals;
- the task is broken down into subtasks which must be finished to successfully complete the overall task;
- the whole class is involved in the activity;
- everyone has a role to play, e.g. field trips or excursions; and
- memberships of small groups are changed regularly to provide an opportunity for all students to interact well with one another.





Strategies for organizing and managing groups

- *mixed- ability groups*- the more able learners in the group can help the others to master the work so that you need not teach some parts
- *same- ability groups*- the teacher can leave the groups of faster learners to get on with the work on their own. You can give extra help to individual learners in the lower groups.
- *Using group learners/monitors*- you appoint faster. More able learners as group leaders or monitors who can help slower learners.





Planning and programming

Planning and Programming is organizing the content into a teachable plan for delivery in the classroom using long, medium or short term plans. The Making a Living programming for Grade 6 consists of:

- content overview outlining the strands, units and topics;
- detailed termly and yearly lesson overviews; and
- sample weekly and daily plans.

In grade 6 the content of this subject comprised of the following:

- 3 strands,
- 9 units,
- 15 content standards and
- 41 benchmarks

Content Overview

This section presents to the teachers an overview of the content scope of learning for Grade 6 students given in the Making a Living syllabus. The broad learning content concepts are:

- Crop and Livestock Farming
- Business Environment and Resources
- Basic Technology.

Here is the scope of learning for Grade 6.

Strand	Units	Topic
Crop & Livestock Farming	• Crop farming	• Crops • Crop farming practices • Crop cultivation methods and technology.
	• Livestock farming	• Livestock • Livestock categories • Livestock management systems
	• Land and water resource management	• Land and soil • Aquatic farming
Business Environment & Practices	• Satisfying needs and wants	• Subsistence living • Cash society
	• Start a business and record keeping	• Starting a small scale business • Keeping records • Receipts
	• Business communication services	• The postal services • Telecommunication services • Mobile companies



Strand	Units	Topic
Basic Technology	• Introduction to resistant materials	<ul style="list-style-type: none"> • Safety • Design culture • Elements of design
	• Home management	<ul style="list-style-type: none"> • Safety & hygiene • Home management • Resources in the home
	• Media and communication	<ul style="list-style-type: none"> • Safety • Computer basics • Digital devices

Grade 6 Teachable Concepts

Strand	Units	Teachable concepts
Crop & Livestock Farming	• Crop farming	<ul style="list-style-type: none"> • Types of food crops grown and eaten • Cultural and nutritional value of crops • Vegetable crop management practices • Crop farming practices • Crop farming methods • Crop cultivation practices • Vegetable garden project
	• Livestock farming	<ul style="list-style-type: none"> • Common domestic and farm animals • Cultural and nutritional value of farm animals • Benefits and purpose of farm animals • Anatomy of chicken and pigs • Livestock management systems • Livestock care and hygiene of enclosures • Categories of livestock production • Livestock farming project
	• Land & water resource management	<ul style="list-style-type: none"> • Land its importance to plant growth • Chemical and physical characteristics of soil • Aquaculture farming and its components • Management and practices of aquatic farming • Marine and aquatic animals • Aquatic farm project
Business Environment and Practices	• Satisfying needs and wants	<ul style="list-style-type: none"> • Subsistence living practices • Cash society living
	• Start a business and record keeping	<ul style="list-style-type: none"> • Operating a small scale business • Record keeping of cash and credit sales
	• Business communication services	<ul style="list-style-type: none"> • Postal services and its functions • Types of services provided by postal services • How postal services contribute to the success of businesses



Strand	Units	Teachable concepts
Basic Technology	• Introduction to Resistance materials	<ul style="list-style-type: none">• Security practices in workshop design• Safety practices in handling, maintaining and storing tools• Skills in the design process• Application of design process skills• Factors to consider when design products• Plastics, metal, wood• Technology literacy, design and evaluation processes
	• Home management	<ul style="list-style-type: none">• Safety practices in the home• Hygienic practices in the home• Safety and risks management plans• Household responsibilities and managing time and resources• Factors of managing a home• Management plans for managing home resources• Food handling, food hygiene, kitchen hygiene, home management, Resources in the home, home design , home decoration, soft furnishings, elements of design, fibres , fabrics , basic stitches, basic fastenings, safety, recipe
	• Media & communication	<ul style="list-style-type: none">• Discover components and functions of a computer• Function of computers and where they are mainly used• Safety practices and rules in the use of media and digital equipment• Basic safety and ethics in the use of media and equipment• Media information presentation and communication,• Computer hardware



Yearly Overview

The yearly overview is a plan designed to organize the learning content for Grade 6 in primary schools. It is a plan developed from the content overview and content expansion given in the Making a Living Syllabus. The syllabus is translated into a delivery plan in this guide for use in the classrooms for a school year. The plan also promotes sequencing of the learning content so that there is fair distribution of content standards throughout the school year. Teachers should do the following before the yearly overview is compiled.

These are;

- read and understand the content overview section of the syllabus;
- identify number of strands, units and main concepts in each strand;
- check the education calendar and identify actual teaching weeks in each term;
- organize the strands and units according to the 36 weeks in a school year; and
- check to see that the units are fairly distributed throughout the year.

Yearly and Term Overview Sample Plans for Grade 6

A term overview is a plan of an instructional program for teaching. It provides the teacher with specific units, content standards and benchmarks suggested to be planned and delivered within a term. Teachers will need to organize the plan by week, strand, unit, topic, content standards and benchmarks

The overview plans guide the teachers to organize and prepare the teaching program for the number of weeks in each term. This information is extracted and laid out in the teaching program for each week accordingly. It is important to note that these terms (1-4) overview plans are suggestions for Grade six school year. Teachers are encouraged to adjust this plan to cater for your students learning needs.



Sample Yearly and Term plan for Grade 6

Term	Weeks	Strand	Unit	Topic	Content Standard	Benchmark
1	2	Crop & Livestock Farming	Crop farming	• Types of food crops grown and eaten	6.1.1	6.1.1.1
	3	Crop & Livestock Farming	Crop farming	• Cultural and nutritional value of crops • Vegetable garden project	6.1.1	6.1.1.2.
	4	Crop & Livestock Farming	Crop farming	• Vegetable crop management practices • Vegetable garden project	6.1.1	6.1.1.3
	5	Crop & Livestock Farming	Crop farming	• Crop farming practices • Vegetable garden project	6.1.2	6.1.2.1.
	6	Crop & Livestock Farming	Crop Farming	• Crop farming methods • Vegetable garden project	6.1.2	6.1.2.2.
	7	Crop & Livestock Farming	Livestock farming	• Common domestic and farm animals	6.1.2.3.	6.1.3.1 6.1.3.2
	8	Crop & Livestock Farming	Livestock farming	• Cultural and nutritional value of farm animals	6.1.3	6.1.3.3
	9	Crop & Livestock Farming	Livestock farming	• Benefits and purpose of farm animals • Anatomy of chicken and pigs • Livestock farming project	6.1.3	6.1.3.3
	10	Crop & Livestock Farming	Livestock farming	• Livestock management systems • Livestock care and hygiene • Livestock farming project.	6.1.4	6.1.4.1.



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Term	Weeks	Strand	Unit	Topic	Content Standard	Benchmark
2	11	Crop & Livestock Farming	Livestock farming	Livestock management and practices	6.1.4	6.1.4.2 6.1.4.3
	12	Crop & Livestock Farming	Land and water resource management	Soil and its importance to plant growth	6.1.5	6.1.5.1 6.1.5.2
	13	Crop & Livestock Farming	Land and water resource management	Importance of land in supporting plant growth	6.1.5	6.1.5.3
	14	Crop & Livestock Farming	Land and water resource management	Aquatic farming	6.1.6	6.1.6.1 6.1.6.2 6.1.6.3
	15	Business environment & practices	Satisfying needs and wants	<ul style="list-style-type: none">• Subsistence living• Cash society	6.2.1	6.2.1.1
	16	Business Environment & Practices	Satisfying needs and wants	<ul style="list-style-type: none">• Subsistence living• Cash society	6.2.1	6.2.1.2
	17	Business Environment & Practices	Satisfying needs and wants	<ul style="list-style-type: none">• Subsistence living• Cash society	6.2.1	6.2.1.3
	18	<ul style="list-style-type: none">• Business Environment & Practices	<ul style="list-style-type: none">• Start a business and record keeping	Starting a small scale business and keeping records	6.2.2	6.2.2.1





Term	Weeks	Strand	Unit	Topic	Content Standard	Benchmark
3	19	Business Environment & Practices	Start a business and record keeping	Starting a small scale business and keeping records	6.2.2	6.2.2.2
	20	Business Environment & Practices	Business communication services	<ul style="list-style-type: none">• The postal services• Telecommunication services• Mobile companies	6.2.3	6.2.2.3
	21	Business Environment & Practices	Business communication services	<ul style="list-style-type: none">• The postal services• Telecommunication services• Mobile companies	6.2.3	6.2.3.1.
	22	Business Environment & Practices	Business communication services	<ul style="list-style-type: none">• The postal services• Telecommunication services• Mobile companies	6.2.3	6.2.3.1.
	23	Business Environment & Practices	Business communication services	<ul style="list-style-type: none">• The postal services• Telecommunication services• Mobile companies	6.2.3	6.2.3.2
	24	Basic Technology	Introduction to resistance materials	<ul style="list-style-type: none">• Safety• Design culture• Elements of design	6.3.1	6.3.1.3
	25	Basic Technology	Introduction to resistance materials	<ul style="list-style-type: none">• Safety• Design culture• Elements of design	6.3.2	6.3.2.1. 6.3.2.2.
	26	Basic Technology	Introduction to resistance materials	<ul style="list-style-type: none">• Safety• Design culture• Elements of design	6.3.2	6.3.2.3
	27	Basic Technology	Introduction to resistance materials	<ul style="list-style-type: none">• Safety• Design culture• Elements of design	6.3.2	6.3.2.2.



**Grade 6 Teacher Guide**

Term	Weeks	Strand	Unit	Topic	Content Standard	Benchmark
4	28	Basic Technology	Home management	<ul style="list-style-type: none">• Safety and hygiene• Home management• Resources in the home	6.3.3	6.3.2.3
	29	Basic Technology	Home management	<ul style="list-style-type: none">• Safety and hygiene• Home management• Resources in the home	6.3.3	6.3.3.1
	30	Basic Technology	Home management	<ul style="list-style-type: none">• Safety and hygiene• Home management• Resources in the home	6.3.4	6.3.3.3
	31	Basic Technology	Home management	<ul style="list-style-type: none">• Safety and hygiene• Home management• Resources in the home	6.3.4	6.3.4.1
	32	Basic Technology	Home management	<ul style="list-style-type: none">• Safety and hygiene• Home management• Resources in the home	6.3.4	6.3.4.2
	33	Basic Technology	Media and communication	<ul style="list-style-type: none">• Safety• Computer basics	6.3.5	6.3.4.3
	34	Basic Technology	Media and communication	Computer basics	6.3.5	6.3.5.1 6.3.5.2
	35	Basic Technology	Media and communication	Digital devices	6.3.6	6.3.5.3
	36	Basic Technology	Home management	Digital devices	6.3.6	6.3.6.1





Suggested Yearly Lesson Title Overview

Content standard	Benchmark	Less #	Lesson Titles	Week
6.1.1. Students will be able to investigate the cultural and nutritional value of crops, crop farming systems and practices, and their benefits to mankind.	6.1.1.1. Use basic research skills to investigate the types of food crops grown and consumed in different parts of the country.	1	Agriculture and its benefits	2
		2	Different types of food plants	
		3	Growing food plants	
	6.1.1.2. Compare and contrast economic and nutritional values of crops.	4	Traditional food crops	3
		5	Traditional methods of growing crops	
		6	Introduced methods of growing crops	
	6.1.1.3. Examine crop farming systems and practices, and evaluate their benefits to people	7	Vegetable crops	4
		8	Nutritional value of vegetable crops	
		9	Traditional and modern cultivation practices	
6.1.2. Students will be able to develop an understanding of traditional and modern technology used, cultivation practices and their benefits to societies	6.1.2.1. Identify and profile different types of traditional and modern technology used in crop cultivation.	10	Intercropping	5
		11	Mixed cropping	
		12	Technology used in modern and traditional cultivation practices	
	6.1.2.2. Examine traditional and modern technologies used in crop cultivation and evaluate their benefits.	13	Tools used in cultivation	6
		14	Cultivation practices in PNG	
		15	Farming methods	
	6.1.2.3. Use basic research skills to inquire about the use and the impact of traditional and modern crop cultivation technology, and draw appropriate conclusions.	16	Crop rotation	7
		17	Bush fallow	
		18	Shift cultivation	
6.1.3. Students will be able to examine the nutrition and economic value of raising farm animals, and evaluate their benefits to society	6.1.3.1. Identify and categorise farm animals according to their nutrition and economic value.	19	Domestic animals	8
		20	Native and farm animal	
		21	Benefits of farm animals	
	6.1.3.2. Compare and contrast the economic and nutritional benefits of farm animals to society.	22	Economic benefits of animals	9
		23	Cultural benefits of farm animals	
		24	Nutritional benefits of farm animals	
		25	Uses of native and farm animals	10
		26	Traditional uses of natives and farm animals	
		27	Modern uses of farm animals	



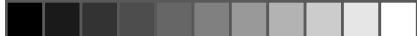
Content standard	Benchmark	Less #	Lesson Titles	Week
6.1.4. Students will be able to identify and analyze the different livestock management systems and practices used in livestock farming.	6.1.4.1. Identify and critique the different types of management systems used in livestock raising such as free range, semi-intensive, and intensive systems	28	General livestock management systems	2
		29	Free range management system	
		30	Intensive and Semi- intensive management systems	
	6.1.4.2. Discuss the advantages and the disadvantages of livestock management practices and systems	31	How different farm animals feed	3
	6.1.4.3. Examine general care and hygiene of selected farm animals.	32	Hygienic practices for animal enclosure	
		33	Caring for farm animals	
6.1.5. Students will be able to explain the process of soil formation, examine its uses, and highlight the reasons that support its importance to plant growth.	6.1.5.1. Explain the process of soil formation and discuss its importance to plant growth.	34	What is soil?	4
		35	How soils are formed	
		36	What soil is made up of	
	6.1.5.2. Examine the uses of each type of soil formation (e.g. arable, savannah, rocky, water logged, ice, dry, and mountainous land).	37	Soil color and texture	5
	6.1.5.2. Examine the uses of each type of soil formation (e.g. arable, savannah, rocky, water logged, ice, dry, and mountainous land).	38	Soil as medium for plant growth	
	6.1.5.3. Highlight the reasons for the importance of land in supporting plant growth. 6.1.5.4. Describe and distinguish different soil characteristics and use these to evaluate the suitability of soil for gardening.	39	Suitable soil for gardening	
6.1.6. Students will be able to identify and investigate the different aquatic farming methods, and analyse the cultivation and management practices.	6.1.6.1. Distinguish and examine different types of salt water and fresh water farming methods.	40	Introduction to Aquatic farming	6
		41	Requirements for aquatic farming	
	6.1.6.2. Analyses the different aquatic farming and management practices (for example conservation in salt water and fresh water farming) and substantiate their use.	42	Freshwater and salt water farming	
		43	Freshwater and salt water farming methods	7



	6.1.6.3. Investigate the different aquatic farming methods and draw conclusions about their suitability, sustainability, effectiveness, efficiency, and output. 6.1.6.4. Use basic research skills to inquire about, draw relevant conclusions, and make suggestions for improving the output of a local aquatic farming project.	44	Starting an aquatic farming project	
		45	Mini fish pond project	
6.2.1. Students will be able to investigate and highlight the different ways wants and needs are met through subsistence and cash economies.	6.2.1.1. Use basic research skills to inquire and report on how needs and wants are met from one's participation in both subsistence and cash economies.	46	Business in Traditional Society	8
		47	Production by Individual and Family	
		48	Exchange, Past and Present	
	6.2.1.2. Critically reflect on the advantages and the disadvantages of the cash economy in meeting needs and wants.	49	What is a Business?	9
		50	Money and Making profit	
		51	Prices	
	6.2.1.3. Discuss and compare the advantages and the disadvantages of subsistence economy and cash economies in meeting needs and wants.	52	Development of Money	10
		53	Manufactured Goods	
		54	Better Means of Transportation for business	
6.2.2. Students will be able to determine and evaluate pricing and record keeping management practices in terms of their effectiveness, accountability, pricing	6.2.2.1. Determine and analyses pricing and record keeping management practices in terms of their effectiveness, accountability, pricing formula, and profit margins.	55	Business activities in formal sector	2
		56	Business activities in informal sector	
		57	Case Study-Activities in formal and informal sectors	
	6.2.2.2. Use basic research skills to investigate a pricing and record keeping practice employed by one successful and one unsuccessful business, draw appropriate conclusions, and make suggestions for improvements.	58	Business Idea and Resources	3
		59	Start-up legal requirements	
		60	Case Study- How someone started their small business	
	6.2.2.3. Explain the process for determining and controlling the prices of goods and services. 6.2.2.4. Examine the role of Independent Competition and Consumer Commission relating to the pricing of goods and services in Papua New Guinea	61	Personal benefits of small scale business	4
		62	Community benefits of small scale business	
		63	Case study: Other benefits of a small scale businesses	



6.2.3. Students will be able to explore the basics of business communication services and how they contribute to the success of business operations in the formal and informal business sectors.	6.2.3.1. Evaluate different means of communication used in the formal and informal business sectors.	64	Introduction to postal service	5
		65	Introduction to telecommunication service	
		66	Introduction to national information and communication Services	
	6.2.3.2. Examine how communication services contribute to the successes of business operations in the formal and informal business sectors.	67	Importance of government communication services to businesses	6
		68	Case Study- How government communication services contribute to the successes of business operations	
		69	Case Study- A simple case study of how government communication services contribute to the successes of business operations	
	6.2.3.3. Identify and discuss basic government communication services as a means of communication in business.	70	Importance of different communication means in business	7
		71	Means of communication in formal business sector	
		72	Means of communication in in-formal business sector	
6.3.1. Students will be able to identify and assess safety practices and rules that are observed when working with tools, and examine the consequences for non-compliance.	6.3.1.1. Identify and examine safety practices and rules to consider when using tools (for example, carpentry tools).	73	Safety and factors affecting room design	8
		74	Safety practices in a workshop	
	6.3.1.2. Discuss different protective clothing and gear that is used when working with tools. 6.3.1.3. Examine the consequences of violating the required safety rules and lack of compliance with acceptable practices.	75	Safe handling of tools	
		76	Maintaining and storing tools	
6.3.2.2. Use the information from the analysis of factors and suggest ways of addressing these to improve the design ideas and production processes	6.3.2.1. Identify and analyse the factors that affect the design and the production of design ideas.	77	What is designing?	9
		78	The design process	
		79	Materials and techniques	
	6.3.2.2. Use the information from the analysis of factors and suggest ways of addressing these to improve the design ideas and production processes.	80	Factors of design	10
		81	Designing a product	
		82	Evaluating the product	
	6.3.2.3. Apply creative and critical thinking skills to solve the problems affecting the design process.	83	Skills in designing	2
		84	The design solution or product	
		85	Communicating the design solution	



6.3.3. Students will be able to identify and justify the safety and hygienic practices that are observed within the home.	6.3.3.1. Outline the process of dealing with problems created by lack of hygiene and safety practices at home.	86	Safety	3
		87	Safety practices in the home	
	6.3.3.2. Examine the consequences of not using proper hygiene and safety practices at home.	88	Hygiene	
		89	Hygienic practices in the home	
	6.3.3.3. Outline the process of dealing with problems created by lack of hygiene and safety practices at home.	90	Safety and risks within the home	4
		91	Safety and risks management within the home	
6.3.4. Students will be able to reflect on the need for effective resources management practices at home and assess their benefits to the household.	6.3.4.1. Identify and analyse the factors that contribute to effective resource management at home.	92	Household management	5
		93	Resources in the home	
		94	Benefits of managing a home using a plan	
	6.3.4.2. Examine how resources are managed at home and assess the benefits to the household. 6.3.4.3. Compare and contrast homes with poor and good resource management practices, and propose measures for improvement.	95	Cleaning equipment	6
		96	Elements in interior home design	
		97	Home and room organization	
6.3.5. Students will be able to identify and probe safety standards and ethics relating to media and technology.	6.3.5.1. Determine media, technology, and communication safety standards and ethics, and discuss the benefits.	98	Safety measures and maintenance of a computer room	7
		99	Media and digital equipment	
		100	Proper storage of media and digital equipment	
	6.3.5.2. Examine safety standards and ethics used in media and technology.	101	Types of media and digital devices	8
		102	uses and benefits of media and digital devices	
	6.3.5.3. Analyze the consequences of violating media and technology safety standards and ethics.	103	Media and technology	9
104		Basic ethics of media and technology		
105		Current issues of Media and technology		
6.3.6. Students will be able to demonstrate awareness of the basic functions and components of computers.	6.3.6.1. Discuss the function of computers, their purposes, and who uses them. 6.3.6.2. Identify and examine the different components of a computer and their purposes.	106	What is a computer	10
		107	Uses of a computer	
		108	Components of a computer	



Weekly Plan

A weekly plan is an instructional program for teaching and learning. It gives the teacher specific outline of the units, content standards, benchmarks and learning activities for instruction which the teacher follows in a week. To compile a plan for a week's program teachers will need to organize the plan using;

- units;
- content standards;
- benchmarks; and
- lesson topics.

Teacher should use the term overview to see the order of units organized, and then use this order to plan the weekly program. The weekly plan is implemented through a timetable that is planned for the subjects in the primary level.

A sample program of a week's plan is given as a suggested guide. It is important to ensure that all the planned lessons for each term in each week are scheduled in the class weekly plans. The weekly plan is implemented is implemented through a time table

Weekly Sample Overview

Term _____ Week: _____ Date: _____ Year: _____

Subject	Unit	Content standards	Benchmark	Lesson No	Lesson Topic
Making a Living	Crop & Livestock farming	6.1.1	6.1.1.1	1 2 3	<ul style="list-style-type: none"> • Agriculture and its benefits • Different types of food plants • Growing food plants
English	Refer to English Teacher Guide & Syllabus	Refer to English Teacher Guide & Syllabus	Refer to English Teacher Guide & Syllabus	Refer to English Teacher Guide & Syllabus	Refer to English Teacher Guide & Syllabus
Mathematics	Refer to Mathematics Teacher Guide & Syllabus	Refer to Mathematics Teacher Guide & Syllabus	Refer to Mathematics Teacher Guide & Syllabus	Refer to Mathematics Teacher Guide & Syllabus	Refer to Mathematics Teacher Guide & Syllabus
Science	Refer to Science Teacher Guide & Syllabus	Refer to Science Teacher Guide & Syllabus	Refer to Science Teacher Guide & Syllabus	Refer to Science Teacher Guide & Syllabus	Refer to Science Teacher Guide & Syllabus
Social science	Refer to Social science Teacher Guide & Syllabus	Refer to Social science Teacher Guide & Syllabus	Refer to Social Science Teacher Guide & Syllabus	Refer to Social Science Teacher Guide & Syllabus	Refer to Social Science Teacher Guide & Syllabus



Arts	Refer to Arts Teacher Guide & Syllabus	Refer to Arts Teacher Guide & Syllabus	Refer to Arts Teacher Guide & Syllabus	Refer to Arts Teacher Guide & Syllabus	Refer to Arts Teacher Guide & Syllabus
Health Physical education	Refer to physical education Teacher guide and syllabus	Refer to physical education Teacher guide and syllabus	Refer to physical education Teacher guide and syllabus	Refer to physical education Teacher guide and syllabus	Refer to physical education Teacher guide and syllabus

Timetabling

It is important to be mindful of how much time there is to deliver the content of the subject in a week and throughout the school year.

Prescribe Time allocations

The following is a listing of the subjects and their time allocations in SBC respectively:

Senior Primary Time allocation			
Subject	Grade 6	Grade 7	Grade 8
English	280	280	280
Mathematics	240	240	240
Science	165	165	165
Social Science	160	160	160
Arts	140	140	140
Health and Physical Education	180	180	180
Making a Living	160	160	160
CCVE	120	120	120
Religious instruction	60	60	60
Local course	90	90	90
Assembly	75	75	75
Sports	60	60	60
Total	1650	1650	1650

These basically give a total time of 1650 minutes per week to deliver the 7 or 8 subjects in grades 6 to 8. As per the subject total times given a sample breakup for number of lessons per week is compiled for teacher's reference. Teachers are encouraged to utilize the prescribed time for the respective subjects to suit their context and students learning needs.





Sample Time Analysis for Grade 6

No:	Subjects	Prescribed Time Allocation	No: of lessons x minute/lesson	Suggested Minutes	+ minutes	- minutes
1	English	280	7 x 40			
2	Mathematics	240	6 x 40			
3	Science	200	5 x 40			
4	Social Science	160	4 x 40			
5	Arts	120	3 x 40			
6	HPE	160	2 x 40 1 x 60			
7	MAL	160	4 x 40			
8	CCVE	120	3 x 40			
10	Assembly	60	5 x 10			10
11	RI	60	1 x 40			20
12	Sports	60	1 x 60			
13	Block Time	30	1 x 40		10	
	TOTAL	1650	40 (instructional lessons weekly) + assemblies	1650	30	30





Content Background

This section is presented to teachers to extract information to further enhance his or her knowledge on the subject content. It contains content background information to help the teachers plan and teach quality Making a Living lessons with less difficulty. The teacher is encouraged to use relevant sources or references available to build on existing content background in order to deliver effective lessons.

Strand 1: Crop and Livestock Farming

Unit 1: Crop Farming

Crops are all the plants produce from the land that is cultivated to meet human needs. It may be for personal use or to generate an income. Crops include our staple foods such as sweet potatoes, yam, taro, cassava, sago, cooking bananas and white potatoes. Common vegetables grown include pumpkin, corn, carrots, tomatoes, beans, peas, choko, aibika, capsicum, lettuces, cabbages, broccoli, cauliflower, eggplants, mushroom and pitpit.

Common fruit tree crops grown include eating bananas, pawpaws, pineapples, lemons, oranges, mangoes, guavas, avocado, custard apple, soursop, pomelo, watermelons, passion fruit, cucumbers and laulaus. There also a great variety of nuts.

Good garden preparation techniques

It is important to understand how water works. Avoid making way for water to speed down the hill. It must flow slowly. If water flows quickly down the hill it will carry a lot of soil with it.

When clearing a piece of land for gardening on a hill leave some trees. They will help to reduce the impact of rain drops. They bind the soil with the roots and lows down the run off. The trees also help to keep the soil moist and reduce the temperature. Pitpit and grass will also help to hold the soil

Crop management- good gardening practices include; plant spacing, weeding, watering, mulching, pruning, composting, drainage, pest control, application of natural and artificial fertilizers for additional nutrients and use of different cultivation practices for land sustainability.



The value of crops and animals

Crops and animals are important in Papua New Guinea because of their economic, nutritional and cultural value.

Economic Value

The economic value of crops and animals is that they may be used for personal purposes such as food, clothing and traditional dress which provides a saving in what needs to be bought. They can also be sold to provide an income for individuals, families and the nation. Local markets are colourful and plentiful throughout the country and provide a valuable income. In the cash economy in modern society, people need income to buy goods they cannot produce and pay for services such as health, education, travel, electricity and communication.

Cash crops as coffee, cocoa, coconut, tea rubber, timber, oil palm and vanilla are important for trade and export. Papua New Guinea exports its products to many countries throughout the world such as Australia, Japan, United Kingdom, America and Germany. Papua New Guinea has meat and fish canneries and sugar, tea and coffee factories.

Nutritional Value

Crops and animals provide the food that enables us to have healthy bodies. Whether they are produced at home or bought from markets or shops, our diets are comprised of crop and animal foods. Humans have a great variety of foods to choose from to meet their needs. We could not survive without the food that comes from crops and animals.

Consider the nutritional value of the crops and animals you plan to produce. The nutritional value of food is found in the food substances that the body can use for energy, warmth, the growth and repair of tissue, protection from diseases and the regulation of body processes. All of these functions occur when our bodies take in enough of the right kind of food to meet our needs. The substances in food are called 'nutrients' and the six nutrients are protein, carbohydrates, fats, vitamins, minerals and water.

Protein foods are all kinds of fish, seafood, animals, eggs, milk, peanuts and legumes, (beans, peas). The body uses the protein in these foods to build and repair tissue. Protein foods are especially important for growing children and injured people. It should be noted that while these foods are rich sources of protein, they also contain other nutrients. Tinned fish for example contains some fat, calcium, iron and vitamin B in addition to protein. Peanut contain some carbohydrate, fat, fibre, calcium, iron and vitamin B in addition to protein.

There are three types of carbohydrate: sugar, starch and cellulose. Sugar is food in sugar cane and all sweet fruits. Starch is found in all our starchy staple foods such as potato, yam, taro, sago, rice, cassava, breadfruit and cooking bananas cellulose is the fibre in food. The body use sugar and starch for energy and warmth. Even when we are asleep we need energy for our heart, lungs and other systems to work and for our bodies to be warm at an even temperature. Fibre



in foods is valuable to stimulate the digestive track and enables our bowels to function properly.

Cultivation practices include land preparation, planting methods such as nursery or direct planting, weeding, mulching, irrigation and harvesting. Traditional cultivation practices do not require machines and chemicals for crop production whereas modern cultivation practices require upgraded skills and use of chemicals.

Every farming system uses different cultivation practices such as; mixed cropping, multiple cropping, inter-cropping and crop rotation. Mixed cropping: More than one crop is grown on a piece of land without any order. Multiple cropping: Two or more crops are grown with particular spaces between plants and rows. All crops are in the same field but have separate areas. They are not mixed up together. Mono cropping: Growing only one type of crop on the same piece of land. Inter-cropping: Two crops, for example coconut and cocoa are grown using definite spacing between plants and rows in the same area. Crop rotation: One or more crops are grown in separate areas in the field and rotated in order each year. Types of farming systems include: Shifting cultivation, bush fallow, continuous cultivation and plantation

Unit 2: Livestock Farming

Livestock production is important for meeting a variety of human needs. It is important for students to learn about the types of livestock categories and rearing systems and the benefits of raising farm animals so that they can make informed decisions about whether or not to pursue this as an option for sustainable living.

Animal resources for humans include pigs, chickens, ducks, pigeons, cassowaries, cuscus, wallabies, bandicoots, bats, crocodiles, Birds of Paradise, beef cattle, goats, dogs, water buffalo and horses. Animal resources meet human needs in different ways. Many people make a living from raising animals for personal use or to generate an income. Land animals that are raised to provide food include chickens, pigs, goats, rabbits' sheep and cattle. Wildlife land animals that also provide food are cuscus, wallabies, bats, snakes and bandicoots.

Birds also can be sold to generate an income. Some hotels have big cages for cassowaries, hornbills, cockatoos and guria pigeons. They are used as an attraction for guests to learn about fauna in Papua New Guinea. Some families might buy a bird as a family pet.

A wildlife sanctuary could be established at the school with a collection of local reptiles, birds and animals. As well as providing a learning opportunity for students, it could prove an attraction for visitors. However, the main focus of income-generating animal projects is related to animal husbandry. This is concerned with farming animals for food purposes.

Common livestock farming includes, poultry, piggery, goat, cattle, rabbit and raising ducks. Both native and introduced animals can be raised at a small or large scale to generate an income to sustain human livelihood.



Farm animals are kept in enclosures and farmed using different farming and management systems. There are three village based livestock management systems that are widely used for livestock production, free range systems, semi-intensive system and intensive management systems. In Free range management system the animals are let loose without being enclosed to look for their own food and shelter. This method is the oldest and is used by almost all farmers. In semi-intensive management system, the animals are partly controlled rather than being let loose entirely. Intensive system allows the animals to be kept and cared for in enclosures without letting them out until they are matured and ready for slaughtering or sale. Intensive animal production includes poultry farming for eggs and meat, cattle and piggery.

Management systems used in livestock production



Cattle rearing - Semi-Intensive management system.



Poultry- Intensive management system



Poultry- Intensive management system



Village piggery project- Free range management system



Unit 3: Land and Water Resource Management

Land and water support the growth of a variety of plant and animal life. They are important enablers of life. Land and water are used for a variety of purposes by all living things, human beings in particular. It is therefore important for students to examine and appreciate how these resources are formed, support plant and aquatic life, and how they are managed and exploited, and the consequences.

Land Resources

Land is an important resource for human livelihood. Land or Soil is the medium for plant growth. Plants take nutrients from the soil. Organic matter is also lost from the soil. Nutrients are lost by leaching during rainy season. It is important to add organic matter to the soil to maintain its structure and nutrient levels.

Land resources include minerals, crops, animals and forests. Minerals are significant land resource. They provide valuable income for the government, landowners and employees. The income is used to meet human needs in the services the government can provide and or personal use by individuals. Crops, animals and forests meet our physical needs for food, clothing and building material. The relationship between plants, animals and the natural environment can be maintained through good management practices.

Forests

Forests are an important source of timber for housing, boat building, firewood and logging. Forest plantations have been established in various parts of the country such as the pine forests at Bulolo – Wau, teak forests at Brown River in Central Province, Kerema and others in the Gogol valley, Kimbe and in the Highlands. The country has extensive forest reserves which cover three quarters of its land surface. Papua New Guinea produces considerable quantities of timber. Plywood and wood chip production and milling are of some importance.

Water Resources

Water is also a very important resource for humans survival. Water resources come from rain, dams, tanks wells oceans, rivers, coral reefs, lakes, mangroves, wetlands and swamps. People need a water supply for drinking, cooking, washing and flushing toilets. Although Papua New Guinea has an abundance of water resources, 70% of the rural population has no access to safe water, and sanitation is a major problem. Furthermore, many people travel long distances to collect water.

Sustainable practices are currently being implemented to ensure seafood supplies for future generations. Sea shells may be sold, used as money or used to make necklaces, armbands and other decorative purposes.

Aquatic farming is cultivating plants and animals using fresh and marine (salt water). Food from water sources includes fish, trout, tuna, sharks crab, prawns, crayfish, shell-food, oysters and turtles. Most of the country's freshwater and



marine fishing is of a subsistence nature, but there is some commercial fishing especially for prawns, crayfish and tuna.

Some common aquatic farming projects include; fish ponds, water crass cultivation and lobster farming at a small scale to generate an income



Aquatic farming - fish pond

Strand 2: Business Environment and Practices

Unit 1: Satisfying Needs and Wants

In traditional society, a family would grow its own food. Men and women would go hunting and fishing. Things such as houses, axes, clay pots and billums were made by people themselves. People lived with their own clans in villages. They helped each other. No food or things were bought from other countries. Sometimes people got things from their neighbours. They exchange goods and services with their neighbours with those things that they do not have. This type of change is called Barter trade. When people depend on themselves for food and the things that they need, this is called subsistence living. Subsistence living is when people grow the food that they need and make the goods they want for themselves.

Goods and services

All people need different things in order to live. Food is the most important thing that people need. Houses keep people dry and warm when it is raining. Men need spears for hunting. Women use billums to carry food. Sometimes they carry their babies in billums.

How do people get goods and services?

The only way people can get goods and services is working. The work done by people to get the goods and services is called production. Building a canoe, making a billum and fetching water are examples of production. The person who makes a good is a producer. The person who gives a service is also a producer. People can only get goods and services by working. Good and services were exchange with neighbours for goods and services in return without the use of money. The person who uses the goods and services is a consumer. A person produces goods and services in subsistence living so he can use those goods and services



Manufactured goods

Manufacturing involves changing primary products into other goods. Some modern manufactured goods, such as a radio, are made from very many different primary products. Processed and semi-processed can be used in vary many different ways. They can be used in the production of many different manufactured goods.

Where are goods manufactured and processed?

The processing of primary products, and the manufacturing of modern goods, usually takes place inside a building. Often, there is an expensive machinery inside the building. The machinery is used to process and manufacture the goods.

Stages of manufacturing goods

Primary products → Semi-processed Good → Processed Good → Manufactured Good



Unit 2: Starting a Business and Keeping Records

Today we use money to buy goods and services we want. In Papua New Guinea the money used is called kina and toea. Each country has its own money. Whatever the money is called, it is usually in the form of notes and coins. People use notes and coins to buy food, clothes and to pay for services like transport, e.g. buses or PMV. Another name for notes and coins is cash.

People who no longer lead a subsistence life need cash. Many people today do not grow all their own food. They use cash to buy rice, tins of fish and other goods they need. People need cash for many reasons. Money and cash has become important in people's lives. Without cash people cannot get the goods and services they want. Cash is used in the exchange of goods and services. Most people no longer produce the goods and services they need by themselves, or use the barter system to get all the goods and services they want. Today people use money. With this money they can buy goods they fall short of.

How people get money?

To get money people must produce either goods or services. A school teacher gets money from the government. He is paid for teaching. He provides a service, and in return, he gets money. A trade store owner sells goods. People give him money to get the goods which are in his store.

Working for others

Some people work for the government. School teachers, doctors and policemen work for the government. The government tells them where to work and what to do. To have a job means to work for someone else. Someone can have a job with the government, with another person, or with a company.

Working for oneself

Some people do not work for others. They work for themselves. They become specialists. They produce certain types of goods or provide certain types of service; they sell these goods and services for money. When people carry out an activity of selling goods or services for money, this is called business.

A business is concerned with selling goods or providing services in return for money. A business can be started up by one person or by many people. A man who owns a business can pay other people to work for him. A business man does not work for other people or for the government. People get money in two ways. Some people have jobs and are paid by others to work. Some people are businessmen. They get their money from selling goods or by providing services.

Making a profit

Businesses produce goods and services to sell for money. This is how businessmen get their money. The money that comes in from selling goods and services is called revenue. A trade store owner gets his revenue from selling tin fish and rice. The money that people give to him is his revenue.



Expenses

A businessman will have to do some work or buy some materials before he can produce a good to sell. A businessman usually has to pay out some money before he can get his revenue. Any money that a businessman must pay out is called expenses.

Profit depends on three things

How much profit a businessman makes depends on:

The quantity of the goods he sells

The price of the good

The total expenses

Unit 3: Business Communication Services

One of the most important tools for a company's success is telecommunication. It enables companies to communicate effectively internally and externally, attract and inform potential customers and give quality service to their customers. Mobile telecommunication gives companies the opportunity to introduce more flexible working hours by allowing employees to work effectively from home. The introduction of smart phones gives new levels of productivity and capability. Communication is a crucial aspect of any business, and the availability of telecommunication assists a business to process transactions immediately from many remote locations, exchange business documents, example; digital SMS banking, phone credit top ups, emails, voice-mails etc.;

Business Practices and Principles

Integrity is the core value. The goal must be to conduct business fairly and honestly.

Respect for laws and culture:

- Values for customers:
 - Responsible employment practices;
 - Dealing with dilemmas; and
- Monitoring and accountability.

Business Advertising

Print Advertising – is when advertisements are published in printed materials. eg, newspapers.

TV Broadcasts – Electronic media is another advertising avenue that businesses explore and use to communicate services and products

Trade Shows - Setting up booths at Trade Shows to advertise services and products.

Product Placement – Product placement is when a product is advertised by a not-so-subtle appearance in a movie, TV Show, Music, Video.



Strand 3: Basic Technology

Basic Technology embodies the perception of technology from the times as earliest when, humans have interpreted, shaped and altered their environments in an attempt to improve the quality of their lives. In the process technologies have evolved and been developed to the extent, that, today, they have an impact on most aspects of our daily lives. Products of technology include artifacts, processes, systems, services and environments. These products make up the design world. Technology has been developed through working with and building with materials and tools and has been an integral way of society.

Unit 1: Introduction to Resistant Materials

Resistant materials are materials that are difficult to work with such as woods, metals and plastics. The unit is about designing products for the real world. It's about taking an idea from the moment of inception to an actual final product that can be used and evaluated. The broad skills acquired will be sketching, technical drawing, 3D modelling and ICT skills as well as the practical skills that are needed to make wood, metal or plastic products.

Resistant materials

Resistant materials are woods, metals and plastics that are difficult to work with and will need proper skills and processes and tools. Each material have properties that are considered when designing a solution. In this study, problem solving skills and communication skills are developed. The correct use of tools is developed in the making of a product. Safety is very important when working with resistant materials.

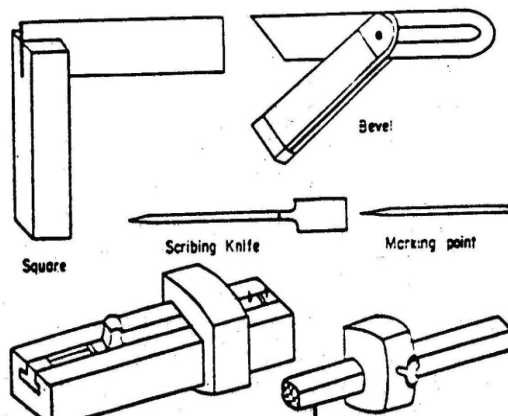
Tools

Carpentry Tools

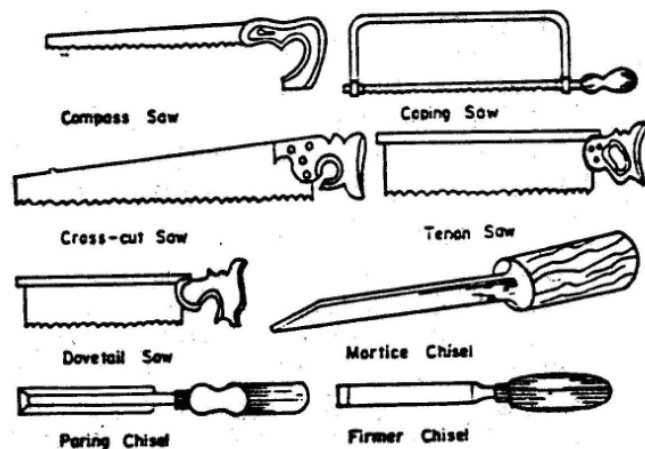
- 1) Marking and setting out
- 2) Cutting tools
- 3) Boring tools
- 4) Planning tools
- 5) Hammers and screw drivers
- 6) Level tools



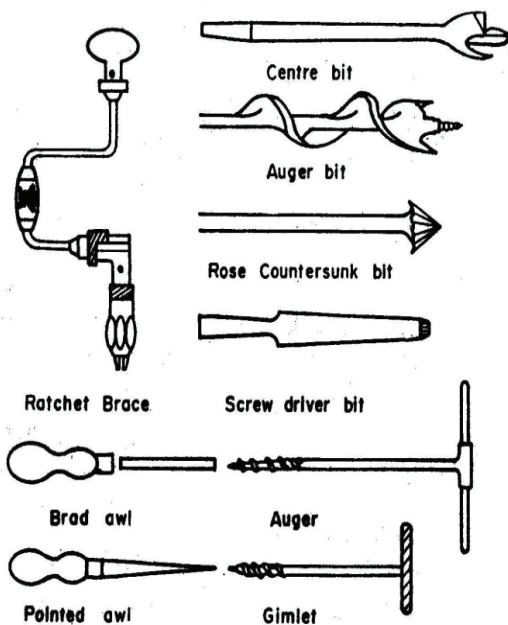
1. Marking and setting out



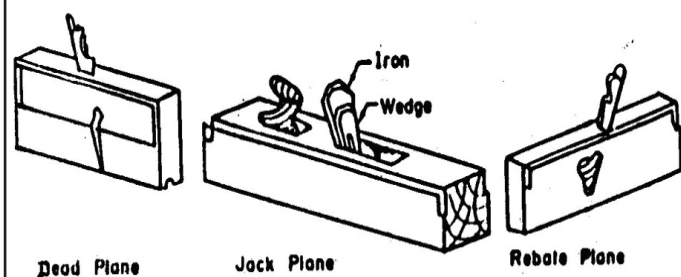
2. Cutting



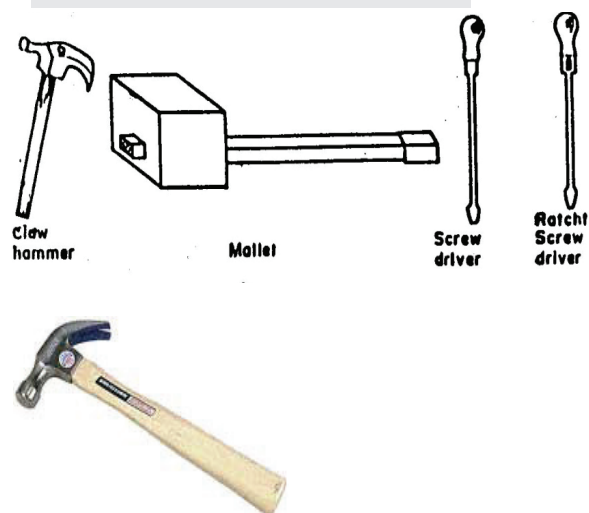
3. Boring



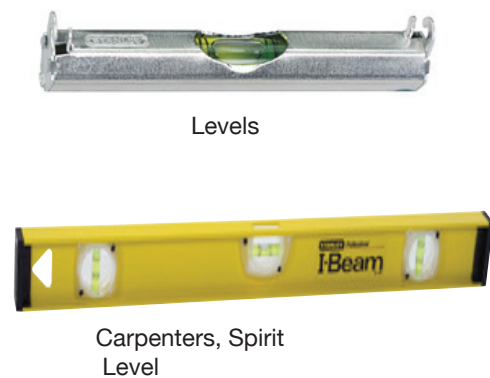
4. Plane



5. Hammers and screw drivers



6. Levels



Techniques/Processes

1. Resistant Materials Skills

cutting
drilling
sanding
measuring
Forming and shaping

hammering
selecting tools
screwdrivers
choosing materials
boring

4. Health and Safety

Health and safety is paramount when teaching a subject like Resistant Materials. Students are taught to handle tools and equipment with care and to use the appropriate tools and safety wear for the jobs that they are doing. When using basic hand tools for the first time pupils are closely supervised, this level of supervision lessens when they become more confident and competent. It is hoped that students will achieve some knowledge and understanding of how to handle tools appropriately with confidence and competence for those little jobs that need doing in and around the house in their everyday lives.

Unit 2: Home Management

Home management covers the actions necessary to take of the home one lives in, and to keep all the systems within the home, under control and functioning properly. It includes the planning and organization of available resources to ensure the home is functioning well. The aspects of textiles, food and nutrition and home decorations are taught to develop management of resources to improve lives.

Unit 3: Media and Communication

Media and communication focuses on the understanding of the media and the basics of a computer and the processes that introduces the concepts of technology literacy. Today's society is shaped by the fast growth and development of information technology resulting in its great dependency on the knowledge and competence of individuals from the IT area.

Computer

A computer is an electronic device, operating under the control of instructions stored in its own memory that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use.

Functionalities of a computer

Any digital computer carries out five functions in gross terms:

Takes data as input;
Stores the data/instructions in its memory and use when required;



Processes the data and converts it into useful information;
Generates the output; and Controls all the four steps above.

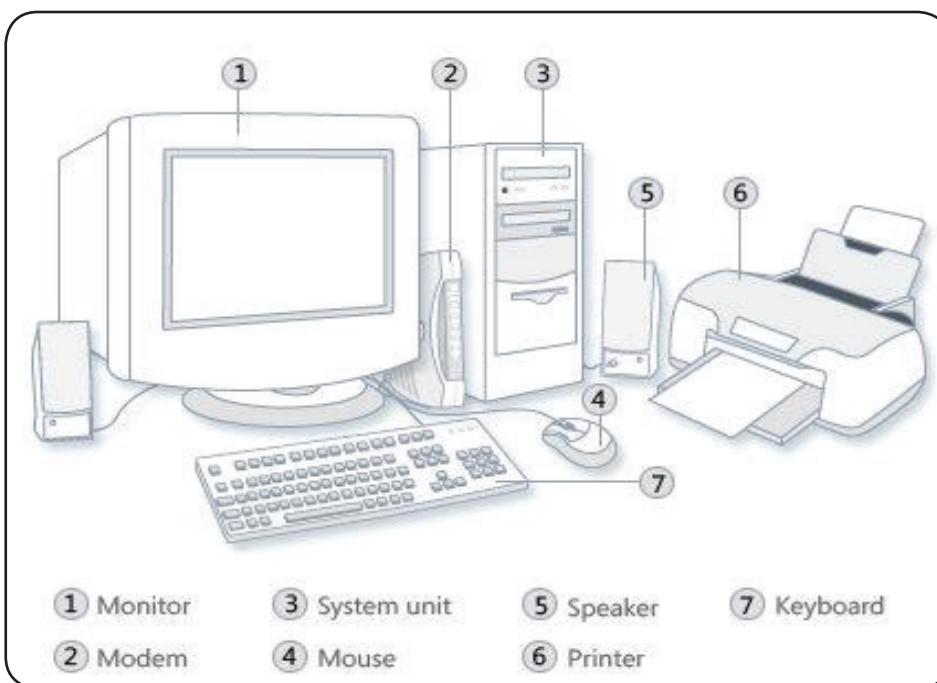


Computer Components

Any kind of computers consists of HARDWARE AND SOFTWARE.

Hardware:

Computer hardware is the collection of physical elements that constitutes a computer system. Computer hardware refers to the physical parts or components of a computer such as the monitor, mouse, keyboard, computer data storage, hard drive disk (HDD), system unit (graphic cards, sound cards, memory, motherboard and chips), etc. all of which are physical objects that can be touched.



Input Devices

Input device is any peripheral (piece of computer hardware equipment to provide data and control signals to an information processing system such as a computer or other information appliance.

Input device Translate data from form that humans understand to one that the computer can work with. Most common are keyboard and mouse.



Example of Input Devices:

1. Keyboard	9. Cameras
2. Mouse (pointing device)	10. Microphone
3. Microphone	11 Trackballs
4. Touch screen	12. Bar code reader
5. Scanner	13. Digital camera
6. Web cam	14. Joystick
7. Touch-pads	15. Game pad
8. Graphics Tablets	16. Electronic White-board

Note: The most common use keyboard is the QWERTY keyboard. Generally standard Keyboard

Output devices

An output device is any piece of computer hardware equipment used to communicate the results of data processing carried out by an information processing system (such as a computer) which converts the electronically generated information into human readable form.

Example on Output Devices:

1. Monitor	5. Plotters
2. LCD Projection Panels	6. Speaker(s)
3. Printers (all types)	7. Projector
4. Computer Output Microfilm (COM)	

Computers classification (Types of Computers)

Computers can be generally classified by size and power as follows, though there is Considerable overlap:

Personal computer: A small, single-user computer based on a microprocessor. In addition to the microprocessor, a personal computer has a keyboard for entering data, a monitor for displaying information, and a storage device for saving data.

Workstation: A powerful, single-user computer. A workstation is like a personal computer, but it has a more powerful microprocessor and a higher-quality monitor.

Minicomputer: A multi-user computer capable of supporting from 10 to hundreds of users simultaneously.

Mainframe: A powerful multi-user computer capable of supporting many hundreds or thousands of users simultaneously.

Supercomputer: An extremely fast computer that can perform hundreds of millions of instructions per second.



Laptop and Smart-phone Computers

Laptop: Laptop is a battery or AC-powered personal computer that can be easily carried and used in a variety of locations. Many laptops are designed to have all of the functionality of a desktop computer, which means they can generally run the same software and open the same types of files. However, some laptops, such as net-books, sacrifice some functionality in order to be even more portable.

Notebook: A notebook is a type of laptop that is designed to be even more portable. Net-books are often cheaper than laptops or desktops. They are generally less powerful than other types of computers, but the same things you can do with a desktop or laptop computer. These include tablet computers, e-readers, and smart-phones.

Tablet Computers: Like laptops, tablet computers are designed to be portable. However, they provide a very different computing experience. The most obvious difference is that tablet computers don't have keyboards or touch-pads. Instead, the entire screen is touch-sensitive, allowing you to type on a virtual keyboard and use your finger as a mouse pointer. Tablet computers are mostly designed for consuming media, and they are optimized for tasks like web browsing, watching videos, reading e-books, and playing games. For many people, a "regular" computer like a desktop or laptop is still needed in order to use some programs. However, the convenience of a tablet computer means that it may be ideal as a second computer.

Smart-phones: A smart phone is a powerful mobile phone that is designed to run a variety of applications in addition to phone service. They are basically small tablet computers, and they can be used for web browsing, watching videos, reading e-books, playing games and more. They provide enough power for email and internet access, which is where the name "net-book" comes from.

Mobile Device: A mobile device is basically any hand held computer. It is designed to be extremely portable, often fitting in the palm of your hand or in your pocket. Some mobile devices are more powerful, and they allow you to do many of the same things you can do with a desktop or laptop computer. These include tablet computers, e-readers, and smart-phones.

Computer Software: A computer software or simply software is a common term that refers to a collection of data or computer instructions that tell the computer how to work, in contrast to the physical hardware from which the system is built, that actually performs the work.

Types of computer software

There are two main types of software: systems software and application software. Systems software includes the programs that are dedicated to managing the computer itself, such as the operating, file management utilities and disk operating systems. Application software products are designed to satisfy a particular need of a particular environment.





All software applications prepared in the computer lab can come under the category of Application software. Examples of Application software are the following; payroll software, student record software, inventory management software, income tax software, Microsoft office suite software, Microsoft word, Microsoft excel, Microsoft Power Point





Guided Lessons

This section contains sample guided lessons that you can try or adapt to suit your class. Table of Knowledge, Skills, Attitudes and Values are also provided to assist you in developing other lessons.

1. Sample Guided Lessons

There are 7 sample guided lessons in this teacher guide as a guide for you to start of your classroom teaching. These sample lessons are taken from the yearly lesson overview. These sample lessons are coming from different units in each strand.

The guided lessons for Grade 6 are sample lessons developed from the Benchmarks derived from the Content standards prescribed in the syllabus. They are only lesson guides to guide and direct the teacher to teach the content of the lesson in a sequential manner providing appropriate students learning activities to demonstrate the concepts, skills, attitudes and values appropriate for the grade level. The teacher is given an option to either follow the guided lesson or use the guided lesson to plan their own lessons accordingly

2. Knowledge, Skills, Attitudes and Values (KSAVs)

There are nine- eight sample Knowledge, Skills, Attitudes and Values (KSAVs) in this Teacher guide as a guide for you to start of your classroom teaching. These sample knowledge, skills, attitudes and values (KSAVS) are taken from the yearly lesson overview.

3. Topics

There are lesson topics for each unit in the Teacher guide and each week has three lesson topics including one practical project lesson which is a follow up of theory lessons taught in the week.

Suggested Lesson Titles for Grade 6

The lesson titles are suggested lessons for you. The lesson titles are created from the benchmarks given in the syllabus. They are recommended for delivery in grade six classrooms. There are 108 suggested teaching lesson titles and 36 practical projects which give a total of 144 lessons of Making a Living in the year in the teacher guide for you to teach. You are given the flexibility to formulate your own lesson titles if you are not comfortable with the suggested lesson titles.

Guided Lesson Template

The guided lesson template is used across Grades 6 to 8. The template shows how the guided lessons can be planned. It is easy to follow and allows teachers to be creative and make necessary alterations to cater for their students' learning needs. The guided lesson template is given for your reference below. The parts of this guided lesson template include:



1. Sample lesson plan template;
2. Sample guided lessons; and
3. Table of Knowledge, Skills, Attitudes and Values for the lessons to be written by teachers

Sample Lesson plan template

Term: **Week:** **Day:** **Lesson No:** Follow the school calendar for term, week, day and lesson no:

Strand: Copy from the syllabus **Unit:** Copy from the syllabus

Content Standard: Copy from the syllabus

Benchmark: Copy from the syllabus

Lesson Title: Write title of the lesson as given in the grade lesson title table

Lesson Objective: Write objective of the lesson

Key concepts

- Write concepts of the lesson as guided in the KASV section

Knowledge	Skills	Attitudes and Values
write the knowledge students will acquire from this lesson	write the skills students will practice in this lesson	write the attitudes/values students will acquire from this lesson

Resources: List of materials teacher and students will use including references

Teacher's notes: Brief descriptions of the background information of the lessons and what is expected of the teacher

Lesson Procedures:

Introduction: *Brief descriptions of what the lesson is about.*

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Body: *Gives the teacher and student activities separately.*

Knowledge	Skills
Write the things teacher will do in this lesson	Write the things students will do in this lesson

Conclusion: *Write the things you will do to finish of the lesson*



Guided Lesson Samples

Strand 1: Crop and Livestock Farming

Sample Lesson No: 1

Lesson No: 2**Unit 1: Crop Farming** **Time: 40 minutes****Lesson Title:** Different types of food crops

Content Standard: 6.1.1. Students will be able to investigate the cultural and nutritional value of crops, crop farming systems and practices, and their benefits to mankind.

Benchmark: 6.1.1.1. Use basic research skills to investigate the types of food crops grown and consumed in different parts of the country.

Lesson Objective: The children will be able to and can identify the different types of food crops grown and consumed

Key Concepts:

- Crops are plants produced from the land that is cultivated to meet human needs. Papua New Guinea has a diverse range of crops.
- Food crops can be classified as;
 - Staple foods – kaukau, sago, sweet potato, yam, taro, etc.
 - Vegetables – pumpkin, corn, carrots, tomatoes, beans, cabbages, etc
 - Fruits – ripe bananas, pawpaws, pineapples, watermelon, etc

Knowledge	Skills	Attitudes and Values
<ul style="list-style-type: none">• Different types of food crops grown for consumption• Classification of types of food crops	<ul style="list-style-type: none">• Brainstorm types of food crops grown for consumption• Classify the types of food crops	<ul style="list-style-type: none">• Appreciation of the importance of growing crops and benefits to mankind.

Resources: Chalk board, student's exercise books, cartridge papers, markers, pictures of food crops.

References: Making a Living, SBC Primary Syllabus, DOE, (2017) Waigani, NCD Making a Living Teachers Resource Book, Outcomes Edition for PNG, Pages: 23-24

Teachers Notes

This lesson under the unit crop farming looks at the types of crops grown for consumption. The teacher should provide background information and pictures of crops appropriate for different environments in this lesson.



Teaching and Learning activities

Lesson Parts	Teacher Teaching Activities	Students Learning Activities
Introduction (10mins)	<ul style="list-style-type: none"> Teacher asks students to brainstorm these terms; crops, staple foods, vegetables and fruits Selected students present their definitions to the class. Teacher summarizes student's definitions. Teacher explains the lesson topic and leads the students focus on the lesson procedures. 	<ul style="list-style-type: none"> Students listen and follow directions. Students answer related questions.
Body (20 mins)	<ul style="list-style-type: none"> Teacher puts the prepared lesson notes on a chart on the board. Teacher explains each paragraph of the lesson notes. Teacher asks few students to name their staple food crops from their area. Teacher explains the prepared activity to the students. Teacher supervises and assists students, at the same time correct books for those students who have completed their work. 	<ul style="list-style-type: none"> Students read through the lesson notes from the board. Students listen attentively to the teacher's explanation of the lesson notes. Selected students give answers related to their staple foods. Students copy and complete activities in their exercise books. Students hand in their books when they are finished.
Conclusion (10 mins)	<ul style="list-style-type: none"> Teacher asks revision questions based on the lesson presented. Thank and praise students for their participation during the lesson. 	<ul style="list-style-type: none"> Students answer revision questions. Get ready for the next lesson.

Teacher Reflection/Evaluation

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Sample Lesson No: 2

Lesson No: 7**Unit 1: Crop Farming** **Time: 40 minutes****Lesson Title:** Traditional and modern cultivation practices**Content Standard: 6.1.2.** Students will be able to examine traditional and modern technologies used in crop cultivation and evaluate their benefits to societies.**Benchmark: 6.1.2.1.** Identify and profile different types of traditional and modern technology used in crop cultivation.**Lesson objective:** The students can be able to identify types of cultivation practices used in PNG

Key concepts

- Cultivation practices include land preparation, planting methods such as nursery or direct planting, weeding, mulching, irrigation and harvesting.
- Every farming system uses different cultivation practices such as; mixed cropping multiple cropping, intercropping and crop rotation.

Knowledge	Skills	Attitudes and Values
Cultivation practices used in PNG.	<ul style="list-style-type: none">• Identify the types of cultivation practices• Differentiate between the types of cultivation practices.	<ul style="list-style-type: none">• Eager to learn and appreciate the type of cultivation practice used in their areas.• Value cultivation practices in other areas in PNG.

Resources: Chalk board, chalk, cartridge papers, markers, sticky tape, other materials needed.**References:** Making a Living, SBC Primary Syllabus, DOE (2017) Waigani, Pearson Australia, 1993 Agriculture for Melanesia, Pages: 107-108

Teachers Notes

This lesson emphasizes on the types of cultivation practices in PNG. There are different types of cultivation practices used in the world. PNG also uses these practices to cultivate the land for various food productions.



Teaching and Learning Activities

Lesson Parts	Teacher Teaching Activities	Students Learning Activities
Introduction (10mins)	<ul style="list-style-type: none"> Teacher asks students to share their experiences in making a garden with guided questions in groups. Selected students share their experiences to the whole class. Teacher summarizes the student's experiences and leads them to the lesson procedures. 	<ul style="list-style-type: none"> Listen to the teacher and answer related questions
Body (20 mins)	<ul style="list-style-type: none"> Teacher explains the prepared lesson notes on the board or chart Teacher divides students into working groups. Teacher explains the activity: Draw diagrams of the cultivation practice given to their groups. Teacher distributes papers and markers to each group for their activity. Teacher supervises and assists each group. 	<ul style="list-style-type: none"> Students listen attentively to the teacher's explanation. Students discuss crops appropriate for that cultivation practice given to them by the teacher. Group leader delegates parts of the activity to each group member (for example one student to draw/label/color their diagram). Groups present their completed task.
Conclusion (10 mins)	<ul style="list-style-type: none"> Thank the class for their effort and participation. Collect completed charts for display in the classroom. 	<ul style="list-style-type: none"> Group leaders collect charts from their group and hand over to the teacher Prepare for the next lesson

Teacher Reflection/Evaluation

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Unit 3: Land and Water Resource Management

Sample Lesson: 3

Lesson No: 27

Unit 1: Land and Water Resource Management

 Time: 40 minutes

Lesson Title: What is soil?

Content standard: 6.1.5. Students will be able to explain the process of soil formation, examine its uses, and highlight the reasons that support its importance to plant growth.

Benchmark: 6.1.5.1. Explain the process of soil formation and discuss its importance to plant growth.

Lesson objective: The students' can be able to define soil and explain its importance to plant growth

Key concepts

- Soil is the natural material on the surface of the earth in which plants grow. It is made up of tiny particles of rocks.
- Importance of soil to plant growth

Knowledge	Skills	Attitudes and Values
<ul style="list-style-type: none">• Soil is the natural material on the surface of the earth in which plants grow. It is made up of tiny particles of rocks.• Importance of soil to plant growth	<ul style="list-style-type: none">• Define the term soil explain the importance of soil to plant growth	<ul style="list-style-type: none">• Appreciate and value the importance of soil to plant growth

Resources: Chalk board, charts, exercise books, etc

References: Making a Living, SBC Primary Syllabus, DOE, (2017)

Pearson Australia 1993, Agriculture for Melanesia, Pages: 24

Agriculture Improved Subsistence Farming, Teachers Guide, Grade 7 & 8, Unit 1, Page 34, DOE, (1982)

Teacher's Notes:

To define soil your students should be able to describe what it looks like and explain what it does. Take them outside to look at as many different kinds of soil as you can see in the local area. Look for locations where they see a soil profile: roadside cuttings, river banks or any place where the soil depth and subsoil is exposed. Ask students to write down what they have observed under two columns. One describing soil as they see it and one saying what the soil does. Encourage students to do this on their own, at least for a start.



Teaching and Learning Activities

Lesson Parts	Teacher Teaching Activities	Students Learning Activities						
Introduction (10mins)	<ul style="list-style-type: none"> Teacher asks students to give their own definition of soil. Selected students share their definitions with the class. Teacher leads the students onto the outdoor activity. 	<ul style="list-style-type: none"> Students listen attentively and answer related questions Follow directions given by the teacher 						
Body (20 mins)	<ul style="list-style-type: none"> Teacher explains the outdoor activity to the students (refer to the teachers note for the outdoor activity). Teacher reminds the students of their safety and to take precautions while doing their observations. Teacher takes the students out to do their observations Teacher takes students back to the classroom and select few students to share their findings with the class. Teacher thanks the students for their inputs and gives the definition of soil 	<p>Students copy table into their books (refer to the example below).</p> <table> <tr> <th>Location</th><th>Description</th><th>Function</th></tr> <tr> <td>Example: flower bed, incinerator, roadside,</td><td>Example: it is a dark color.</td><td>Example: it is slightly wet so that the plants can get water from it.</td></tr> </table>	Location	Description	Function	Example: flower bed, incinerator, roadside,	Example: it is a dark color.	Example: it is slightly wet so that the plants can get water from it.
Location	Description	Function						
Example: flower bed, incinerator, roadside,	Example: it is a dark color.	Example: it is slightly wet so that the plants can get water from it.						
Conclusion (10 mins)	<ul style="list-style-type: none"> Teacher thanks the students for their participation in both the indoor and outdoor activities. 	<ul style="list-style-type: none"> Students wind down and get ready for the next lesson 						

Teacher Reflection/Evaluation

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Strand 2: Business Environment and Practices

Unit 3: Business Communication Services

Sample Lesson: 4

Lesson No: 57

Unit 3: Business Communication Service

Content Standards: 6.2.3. Students will be able to explore the basics of business communication services and how they contribute to the success of business operations in the formal and informal business sectors.

Benchmark: 6.2.3.2. Examine how communication services contribute to the successes of business operations.

Lesson Title: Importance of Government Communication services to businesses

Lesson Objective: The students can be able to identify and explain the types of business communication services, their importance and benefits to consumers and providers

Key Concepts:

- Business Communication Services
- Different types of Business Communication Services contribute to the success of business operation
- The Contributing factors to the successes of business operations
- The Importance and benefits of Business Communication Services to consumers and the provider

Knowledge	Skills	Attitudes and Values
<ul style="list-style-type: none">• The importance of postal services to businesses• The importance of telecommunication services to businesses	<ul style="list-style-type: none">• Discuss the importance of postal services to businesses• Explain the importance of telecommunication services to businesses.	<ul style="list-style-type: none">• Appreciation of the importance of postal services, telecommunication services.

Resources: Pictures/Cartoons of Business Communication Services

References: Making a Living SBC Primary Syllabus, DoE (2018), Waigani

Teachers Notes

Teacher to define the term Business Communication Services and students should be able to identify from pictures/cartoons the different types of Business Communication services provided. Teacher explain that this types of Business Communication Services are not only to earn a profit and become successful, however, consumers benefit as well as the business. Students can discuss the importance and benefits to the consumers and the business.



Teaching and Learning Activities

Lesson Parts	Teacher Teaching Activities	Students Learning Activities
Introduction (10mins)	<ul style="list-style-type: none"> Show students some pictures of people at work providing certain services. Ask students to identify the types of services provided and give a brief account from observation or experiences Teacher introduces the lesson to the class 	<ul style="list-style-type: none"> Students pay attention to the teacher Answer related questions where necessary.
Body (20 mins)	<ul style="list-style-type: none"> Ask students reflect on the pictures shown of their observation and experiences Apply the teaching and learning strategy: Think Pair - Share - Write and divide students into 4 students in a group Explain to students what they are to discuss in their groups Distribute cartridge papers to the groups to present their work Facilitate students discussion and their learning 	<ul style="list-style-type: none"> Students reflect on various definitions shared Students in their groups discuss the following: Define the term 'Business communication services in their own understanding Identify and discuss the different types of business communication services provided Discuss and describe the Importance and benefits of such services to the consumers and providers Group presentation to the class
Conclusion (10 mins)	<ul style="list-style-type: none"> Draw a Summary based on the group presentation of students work Appreciate each group presentation for demonstrating their knowledge and understanding of business communication services provided in Papua New Guinea. 	<ul style="list-style-type: none"> Display their finished work Get ready for the next lesson

Teacher Reflection/Evaluation

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Strand 3: Basic Technology

Unit 1: Introduction to Resistant Materials

Sample Lesson: 5

Lesson Title: Safety and factors affecting room design

Lesson No: 63

Strand: 3. Basic Technology

Unit: 1 Introduction to Resistant Materials

Content Standard:	6.3.1. Students will be able to identify and assess safety practices and rules that are observed when working with tools, and examine the consequences for non-compliance.
Benchmark	6.3.1.1. Identify and examine safety practices and rules to consider when using tools (for example, carpentry tools).
Key Question:	What are safety practices? Why is it important to observe safety practices?
Lesson objective:	Discuss safety practices in a workshop Discuss the factors to consider when designing a carpentry work room
Teaching period:	40 minutes
Preparations:	Chart of safety practices, safety codes
Key concepts(s):	<ul style="list-style-type: none">• Safety, safety practices,• classroom design considering exit and emergency doors, floors, movement space, storage item

Learning content

Knowledge	Skills	Attitudes and Values
<ul style="list-style-type: none">• Safety in a workshop• Designing a classroom for working with tools	<ul style="list-style-type: none">• Define safety• Practice safety measures• Study the room design	<ul style="list-style-type: none">• Value for safety and the design of workrooms

Teacher's Notes:

Safety

Safety is the state of being “safe”, the condition of being protected from harm or other undesirable outcomes. Safety practices are the conducts that are being identified to protect, the eyes, ears, hands and feet and the body as a whole. Safety practices also include the workshops or classrooms that practical skills learning takes place.

Factors to consider when designing a classroom as a workshop;

- Emergency door
- Floors must not be slippery
- Movement must not be obstructed by objects
- Proper storage space for tools and materials
- Neat and Tidy workplace



Lesson Procedure

Time Section	Teacher Activity	Student Activity	Points to consider
Introduction (5mins)	Assess prior knowledge <ul style="list-style-type: none"> Lead students into the knowledge of media that surrounds everyone. What do they read in the newspapers, and what do they watch on TV and what do they listen to on radio? These are mediums of media. 	<ul style="list-style-type: none"> Observe the samples that will cause students to understand the meaning of media 	<ul style="list-style-type: none"> Mass Communication is using the mediums to broadcast, publish and use the internet.
Body (35 mins)	<p>Lead in discussion on the media in terms of broadcasting, publishing and the internet.</p> <p>Activity 1</p> <ul style="list-style-type: none"> Group activity. <ol style="list-style-type: none"> Study the technology that has developed with communication from the past to the present. Differentiate between a digital device and an analogue device Discuss how technology has changed with information <ul style="list-style-type: none"> Presentation of group activity Summarize points of group activity <p>Activity 2</p> <ul style="list-style-type: none"> Opinion talk Is the technology in the media and devices a good change? 	<p>Brief discussion on the media</p> <p>Activity 1</p> <p>Group Activity</p> <ol style="list-style-type: none"> Students work in groups Students present their work in groups Group 1. Group 2. Group 3. <ul style="list-style-type: none"> Observe summary points of presentation <p>Activity 2</p> <p>Give opinions of; Is the technology in the media and devices a good change?</p>	<ul style="list-style-type: none"> Technology has developed and evolved over time. This involvement has depended on the needs of people, societies and communication
Conclusion (5mins)	<p>Summarizing Question</p> <p>What are some disadvantages of the media that students can identify?</p>	<p>Name disadvantages of the media?</p>	<p>Disadvantages of the media</p>

Teacher Reflection/Evaluation:

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Suggested Knowledge, Skills, Attitudes, Values (KSAV)

This section guides the teacher to plan and program their lessons. It provides the teachers the key concepts, Knowledge, Skills, Attitudes and Values to develop relevant teaching and learning activities. The KSAV are all linked to the Content standard, Benchmark, Lesson objective and Assessment tasks of each unit in a strand.

Table of Knowledge, Skills, Attitudes, Values (KSAV)

Content standards	6.1.1. Students will be able to investigate the economical and nutritional value of crops, crop farming systems and practices, and their benefits to mankind.		
Benchmark	6.1.1.1. Use basic research skills to investigate the types of food crops grown and consumed in different parts of the country.		
Lesson No.& Title	Knowledge	Skills	Attitudes/Value
1. Agriculture and its benefits	<ul style="list-style-type: none">Importance of agriculture to mankindFood security and economic benefits	<ul style="list-style-type: none">Brainstorm and list the benefits of crop and animal farming	<ul style="list-style-type: none">Accept and value agriculture as the backbone for individuals and society survival
2. Different types of food plants	<ul style="list-style-type: none">Types of food cropsFood crops enable us to have healthy bodies.	<ul style="list-style-type: none">Distinguish different food crops and classify them accordingly	<ul style="list-style-type: none">Appreciation of the importance of food crops to mankind
3. Growing food plants	<ul style="list-style-type: none">Food crops can be grown for own consumption and surplus for sale	<ul style="list-style-type: none">Select appropriate crops for plantingPrepare land for plantingPlant, manage crop growth and harvest	<ul style="list-style-type: none">Appreciation of the need to grow crops locallyHonesty and pride in achievement
Benchmark	6.1.1.2. Compare and contrast cultural and nutritional values of crops.		
4. Traditional food crops	<ul style="list-style-type: none">Traditional crops are crops such as banana, potato, sago, yam, taro grown for special traditional rituals	<ul style="list-style-type: none">Discuss and list various food crops of different areas in Papua New Guinea	<ul style="list-style-type: none">Appreciation of the importance of crops to mankind.
5. Traditional methods of growing crops	<ul style="list-style-type: none">Traditional methods of crops vary from modern methods.Traditional methods such as permaculture and organic farming	<ul style="list-style-type: none">Distinguish between traditional and modern methods of growing crops	<ul style="list-style-type: none">Being responsible and considerate with the types of cultivation practices used.
6. Introduced methods of growing crop	<ul style="list-style-type: none">The use of technology has changed methods of growing and managing crops	<ul style="list-style-type: none">Identify and list introduced tools and chemicals that replaced traditional methods of crop cultivation	<ul style="list-style-type: none">Appreciate and value the importance of using introduced methods in crop production



Benchmark	6.1.1.3. Examine crop farming systems and practices, and evaluate their benefits to people.		
7. Vegetable crops	<ul style="list-style-type: none"> Vegetable crops grown and eaten in PNG such as: cabbage, corn, carrot, bean, pumpkin, onions capsicum, 	<ul style="list-style-type: none"> Brainstorm and list different vegetable crops grown/found in their area 	<ul style="list-style-type: none"> Appreciation of the benefits of vegetable crops
8. Nutritional value of vegetable crops	<ul style="list-style-type: none"> Nutrients in food maintain healthy bodies. The nutrients are; protein, carbohydrate, fats, vitamins, minerals and water. Important sources of vitamins and minerals are found in vegetables 	<ul style="list-style-type: none"> Research and produce a poster or report on selected vegetable and its nutritional value 	<ul style="list-style-type: none"> Appreciation of the nutritional benefits of vegetable crops Cooperative learning and appreciation of eating taro
9. Traditional and modern cultivation practices	<ul style="list-style-type: none"> Traditional cultivation practice Modern cultivation practices 	<ul style="list-style-type: none"> Outline specific traditional and modern cultivation practices and describe each practice 	<ul style="list-style-type: none"> Acceptance of the shift in cultivation practices from traditional to modern
Content standard	6.1.2. Students will be able to examine traditional and modern technologies used in crop cultivation and evaluate their benefits to societies.		
Benchmark	6.1.2.1. Identify and profile different types of traditional and modern technology used in crop cultivation.		
10. Intercropping	<ul style="list-style-type: none"> Intercropping farming method and how crops are grown in this method 	<ul style="list-style-type: none"> Illustrate how crops are planted using intercropping method 	<ul style="list-style-type: none"> Appreciate and value the reasons of the use of intercropping farming method
11. Mixed cropping	<ul style="list-style-type: none"> Mixed cropping farming method and how crops are grown in this method 	<ul style="list-style-type: none"> Illustrate and explain how crop are planted using the mixed cropping method 	<ul style="list-style-type: none"> Embrace and acknowledge the application of mixed cropping method to grow crops
12. Technology used in modern and traditional cultivation practices	<ul style="list-style-type: none"> Technology used and application of the types of skill, equipment, tools and machines for cultivation. 	<ul style="list-style-type: none"> Discuss, draw and label different tools used for different cultivation practice 	<ul style="list-style-type: none"> Appreciation of the use of technology to speed up production and being considerate of the cheap traditional methods
Benchmark	6.1.2.2. Examine traditional and modern technologies used in crop cultivation and evaluate their benefits.		
13. Tools used in cultivation	<ul style="list-style-type: none"> Different tools are used for different cultivation and practices. 	<ul style="list-style-type: none"> Produce a poster containing different gardening techniques and types of tools used for the selected cultivation practice 	<ul style="list-style-type: none"> Acknowledgment of different tools used for cultivation in different areas of PNG



Benchmark	6.1.2.2. Examine traditional and modern technologies used in crop cultivation and evaluate their benefits.		
13.Tools used in cultivation	<ul style="list-style-type: none">• Different tools are used for different cultivation and practices.	<ul style="list-style-type: none">• Produce a poster containing different gardening techniques and types of tools used for the selected cultivation practice	<ul style="list-style-type: none">• Acknowledgment of different tools used for cultivation in different areas of PNG
14.Cultivation practices in PNG	<ul style="list-style-type: none">• Types of farming systems:<ul style="list-style-type: none">- Shifting cultivation- Bush fallow- continues cultivation- plantation	<ul style="list-style-type: none">• Identify and describe the different cultivation practices	<ul style="list-style-type: none">• Acceptance and appreciation of different farming systems and practices for sustenance of family livelihood
15.Farming methods	<ul style="list-style-type: none">• Methods of farming<ul style="list-style-type: none">- Mixed cropping- Mono-cropping- Multiple cropping- Inter-cropping- Crop rotation	<ul style="list-style-type: none">• Select and apply specific farming methods for growing crops	<ul style="list-style-type: none">• Embrace different farming methods and value its application for improving livelihood of mankind
Benchmark	6.1.2.3. Use basic research skills to inquire about the use and the impact of traditional and modern crop cultivation technology, and draw appropriate conclusions		
16. Crop rotation	<ul style="list-style-type: none">• What is crop rotation?• Crop rotation cultivation method and its practice in crop cultivation	<ul style="list-style-type: none">• Illustrate crop rotation method and describe what happens to the piece of land after harvesting	<ul style="list-style-type: none">• Being aware of the benefits of applying the crop rotation method
17. Bush fallow	<ul style="list-style-type: none">• Bush fallow crop cultivation method and its application	<ul style="list-style-type: none">• Illustrate bush fallow method	<ul style="list-style-type: none">• Appreciate bush fallow methods and its benefits to the soil
18. Shift cultivation	<ul style="list-style-type: none">• What is shift cultivation?• How this method is used for crop farming and benefits to gardening land	<ul style="list-style-type: none">• Illustrate the shift cultivation method and describe its practice in crop farming	<ul style="list-style-type: none">• Being considerate of the type of cultivation practice and value its application in crop farming
Benchmark	6.1.3.1. Identify and categories farm animals according their nutrition and economic value.		
19. Domestic animals	<ul style="list-style-type: none">• Domestic animals are mainly kept by families for personal use, that is as pets, food or for sale on small scale	<ul style="list-style-type: none">• Identify and list common domestic animals found in local family household	<ul style="list-style-type: none">• Appreciation of the benefits of domestic animals within their local community
20. Native and farm animal	<ul style="list-style-type: none">• Native animals are animals that belong to an area/ locality	<ul style="list-style-type: none">• Identify native animals of their area and make comparisons of that of other regions of PNG	<ul style="list-style-type: none">• Appreciation and valuation of native animals and have pride of the existence of specific native animals in their locality
21. Benefits of farm animals	<ul style="list-style-type: none">• Farm animals are animals kept in enclosures on a small scale or large scale. Common livestock in PNG, poultry, piggery, sheep, cattle and fishery	<ul style="list-style-type: none">• Research and outline common livestock and areas where these animals are raised• Ask questions and seek information	<ul style="list-style-type: none">• Embracement of the benefits of raising farm animals on small and large scale



Benchmark	6.1.3.2. Compare and contrast the economic and nutritional benefits of farm animals to society.		
22. Economic benefits of animals	<ul style="list-style-type: none"> Raising livestock is important in PNG because of its benefits through the economic, cultural and nutritional values Various livestock are important for food, trade and export. 	<ul style="list-style-type: none"> Discuss economic benefits of raising livestock on small scale and large scale production 	<ul style="list-style-type: none"> Being responsible and embracement of the economic benefits of animals locally and internationally
23. Cultural benefits of farm animals	<ul style="list-style-type: none"> Cultural benefits of animals, improve family status, maintains closer relationships and sustain rural barter systems 	<ul style="list-style-type: none"> Brainstorm and list cultural importance and benefits of livestock to our societies 	<ul style="list-style-type: none"> Appreciation of value of the importance of animals to humans as well the biodiversity
24. Nutritional benefits of farm animals	<ul style="list-style-type: none"> Nutritional benefits, provides nutritious food(protein) 	<ul style="list-style-type: none"> Research and create a poster with different animals and its nutritional value 	<ul style="list-style-type: none"> Appreciation of value of animals to humans growth and body building
Benchmark	6.1.3.3. Use basic research skills to inquire about and draw conclusions about the nutritional and economic value of farm animals. 6.1.3.4. Evaluate the benefits of nutrition and economic value of farm animals to society.		
25. Uses of native and farm animals	<ul style="list-style-type: none"> Native animals are special and found only in one locality and can be used for meat, decoration, and many other purposes 	<ul style="list-style-type: none"> Identify and list types of native animals found in their community 	<ul style="list-style-type: none"> Appreciation of the importance of the purposes of native animals found locally
26. Traditional uses of native and farm animals	<ul style="list-style-type: none"> Traditionally animals play an important role in the livelihood of families in different societies such as ceremonies, decorations, rituals, bride price and medicines 	<ul style="list-style-type: none"> Compare and list types of native and farm animals and their uses 	<ul style="list-style-type: none"> Acknowledgment of the variety of traditional animals and their uses
27. Modern uses of farm animals	<ul style="list-style-type: none"> Today farm animals provide economic benefits to families, community and the country's economic growth 	<ul style="list-style-type: none"> Outline the modern uses of farm animals and classify them according to their types of benefits 	<ul style="list-style-type: none"> Embracement of the economic benefits of modern farm animals as an individual member of a community and citizen of this country
Content standard	6.1.4. Students will be able to identify and analyse the different livestock management systems and practices used in livestock farming.		
Benchmark	6.1.4.1. Identify and critique the different types of management systems used in livestock raising such as free range, semi-intensive, and intensive.		
28. General livestock management systems	<ul style="list-style-type: none"> There are three(3) village based livestock management systems that are widely used for livestock production, free range systems, Semi-intensive system and Intensive systems 	<ul style="list-style-type: none"> Research and create posters of the different types of animal management systems practiced in PNG 	<ul style="list-style-type: none"> Appreciation of general livestock management systems in PNG



29. Free range management system	<ul style="list-style-type: none">Free range animal production is a system where by animals roam freely without being enclosed. This method is the oldest and is used by all farmers	<ul style="list-style-type: none">Discuss and list different types of free ranging types of animal production in their communities	<ul style="list-style-type: none">Appreciation of the free range animal rearing systems
30. Semi- intensive and Intensive management systems	<ul style="list-style-type: none">Semi-intensive animal production is a system whereby animals are partly controlled rather than being let loose entirely.Intensive animal production system includes poultry farming for egg and meat, cattle, piggery which are totally kept in enclosures and fed without letting them out	<ul style="list-style-type: none">Discuss and list semi intensive animal rearing in their communityDiscuss and list the types of intensive animal rearing in their community	<ul style="list-style-type: none">Appreciation of semi intensive animal rearing systemAppreciation of intensive animal rearing systems
Benchmark	6.1.4.2. Discuss the advantages and the disadvantages of livestock management practices and systems.		
31.How different farm animals feed	<ul style="list-style-type: none">Farm animals need to be fed for healthy growth.Different animals require different amount of food intake	<ul style="list-style-type: none">Discuss and list what each type of farm animal eats	<ul style="list-style-type: none">Acknowledged and value importance of raising farm animals
Benchmark	6.1.4.3. Examine general care and hygiene of selected farm animals.		
Content standard	6.1.4. Students will be able to identify and analyse the different livestock management systems and practices used in livestock farming.		
32. Hygienic practices for animal enclosure	<ul style="list-style-type: none">Farm animals are kept in enclosures and therefore need to be well maintained to avoid pest and diseases to affect animal growth and reproduction	<ul style="list-style-type: none">Research and produce a posture of the different types of enclosures used for different livestock farming	<ul style="list-style-type: none">Sense of responsibility when caring for farm animals*
33. Caring for farm animals	<ul style="list-style-type: none">Animals should be well cared for such as feed ,change of water, health, and care of housing/ enclosures sites	<ul style="list-style-type: none">Apply appropriate general care of farm animals	<ul style="list-style-type: none">Appreciate and value the importance of soil to plant growth
Content standard	6.1.5. Students will be able to explain the process of soil formation, examine its uses, and highlight the reasons that support its importance to plant growth.		
Benchmark	6.1.5.1. Explain the process of soil formation and discuss its importance to plant growth.		
34. What is soil	<ul style="list-style-type: none">Soil is the natural material on the surface of the earth in which plants grow. It is made up of tiny particles of rocks.Importance of soil to plant growth	<ul style="list-style-type: none">Define the term soil explain the importance of soil to plant growth	<ul style="list-style-type: none">Appreciate and value the importance of soil to plant growth



35. How are soils formed?	<ul style="list-style-type: none"> • Soils are formed by the breakdown of large rocks into smaller ones. The smaller pieces are further broken down into very small particles. 	<ul style="list-style-type: none"> • Explain and distinguish the different processes of soil formation* 	<ul style="list-style-type: none"> • Have a sense responsibility and make informed decisions on soil formation and gardening.
36. What soil is made up of	<ul style="list-style-type: none"> • Soil is composed of water, air, living and non-living things and a huge amount of nitrogen. 	<ul style="list-style-type: none"> • Describe and illustrate what soil contains 	<ul style="list-style-type: none"> • Value the importance of soil as a medium for plant growth
Benchmark	6.1.5.2. Examine the uses of each type of soil formation (e.g. arable, savannah, rocky, water logged, ice, dry, and mountainous land).		
37. Soil color and texture	<ul style="list-style-type: none"> • Soil texture is how soil feels to the touch. How soil feels to the touch depends on the size of soil particle. • Good soil for gardening is black fertile soil. 	<ul style="list-style-type: none"> • Experiment and illustrate findings using concrete evidence of various types of soil and their textures.* • Research and collect samples of a variety of soil types and classify according to their colors. 	<ul style="list-style-type: none"> • Appreciation of the importance of soil texture. • Acceptance of the reality that different types of soil have their own natural colors.
Benchmark	6.1.5.3. Highlight the reasons for the importance of land in supporting plant growth. 6.1.5.4. Describe and distinguish different soil characteristics and use these to evaluate the suitability of soil for gardening.		
38. Soil as medium for plant growth	<ul style="list-style-type: none"> • Soil is the medium for plant growth. Plants take nutrients from the soil. 	<ul style="list-style-type: none"> • Describe the importance of soil as the medium for plant growth 	<ul style="list-style-type: none"> • Appreciate the importance of soil
39. Suitable garden soil	<ul style="list-style-type: none"> • Soils differ from one part of the world to another. • Good garden soil is rich in humus and fertile land conducive for plant growth. 	<ul style="list-style-type: none"> • Discuss and state the differences of soil suitable for gardening in different parts of the environment. 	<ul style="list-style-type: none"> • Make informed decisions on soil that is suitable for gardening.
Content standard	6.1.6. Students will be able to identify and investigate the different aquatic farming methods, and analyse the cultivation and management practices.		
Benchmark	6.1.6.1. Distinguish and examine different types of salt water and fresh water farming methods.		
Lesson No.& Title	Knowledge	Skills	Attitudes/Value
40. Introduction to aquaculture farming	<ul style="list-style-type: none"> • Aquaculture farming refers to farming of aquatic(water) animals under controlled or semi-controlled conditions both in-doors and outdoors. 	<ul style="list-style-type: none"> • Discuss and identify aquaculture and list examples of existing aquatic farming in their community. 	<ul style="list-style-type: none"> • Acceptance of various aquatic farming methods.
41. Requirements for aquatic farming	<ul style="list-style-type: none"> • Choosing an aquatic farming project requires careful thinking and planning, and the availability of resources. 	<ul style="list-style-type: none"> • List the requirements needed for the establishment of aquatic farming 	<ul style="list-style-type: none"> • Being considerate of reasons and requirements for aquatic farming .
Benchmark	6.1.6.2. Analyse the different aquatic farming and management practices (for example conservation in salt water and fresh water farming) and substantiate their use.		



42. Freshwater and salt water farming	<ul style="list-style-type: none">• Fresh water farming refers to farming of fish such as tilapia using fresh water fish ponds to cultivate.• Salt water farming involves farming of lobsters, sea weeds, prawns and fish.	<ul style="list-style-type: none">• Distinguish fresh water and salt water farming and the types of animals used for farming in salt and fresh water.	<ul style="list-style-type: none">• Make informed decisions on fresh and salt water farming.
43. Freshwater and salt water farming methods	<ul style="list-style-type: none">• Fish, water crass and kangkong can be farmed using fresh water• Salt water farming involves the farming of lobsters, sea weeds, prawns and fish.	<ul style="list-style-type: none">• Distinguish the types of animals and plants used for farming in salt and fresh water.	<ul style="list-style-type: none">• Make informed decisions on fresh and salt water farming methods.
Benchmark	<p>6.1.6.3. Investigate the different aquatic farming methods and draw conclusions about their suitability, sustainability, effectiveness, efficiency, and output.</p> <p>6.1.6.4. Use basic research skills to inquire about, draw relevant conclusions, and make suggestions for improving the output of a local aquatic farming project.</p>		
44. Starting an aquatic farming project	<ul style="list-style-type: none">• Starting an aquatic farm depends on the community support and existing farm projects.	<ul style="list-style-type: none">• Carry out a research around the school community and report on existing aquatic farms.	<ul style="list-style-type: none">• Value the importance of having an aquatic farm in their school.
45. Mini fish pond project	<ul style="list-style-type: none">• A mini aquatic farming pond project.	<ul style="list-style-type: none">• Design and apply specific aquatic farming methods for salt and fresh water farming.	<ul style="list-style-type: none">• Appreciation of the application of aquatic farming and confidence in establishing a mini-fish pond farming project.



Strand 2: Business Environment and Practices

Content standards	6.2.1. Students will be able to investigate and highlight the different ways wants and needs are met through subsistence and cash economies.		
Benchmark	6.2.1.1. Use basic research skills to inquire and report on how needs and wants are met from one's participation in both subsistence and cash economies.		
Lesson No.& Title	Knowledge	Skills	Attitudes/Values
46: Business in traditional society	<ul style="list-style-type: none"> The definition of the word 'business' The definition of the word 'subsistence living' The good kinds of activities that took place in the subsistence living to meet needs and wants 	<ul style="list-style-type: none"> Explain the words 'business' and 'subsistence living' Identify and list the positive activities that took place in the subsistence living to meet needs and wants 	<ul style="list-style-type: none"> Show appreciation to the knowledge of how business was done in the traditional society Appreciate the types of activities involve in meeting needs and wants
47: Production by individual and family	<ul style="list-style-type: none"> Goods and services The kinds of activities that people do in subsistence living to get their goods and services The reasons that people have that cause them to produce goods and services 	<ul style="list-style-type: none"> Explain the words 'goods' and 'services' Identify and list the kinds of activities that people do in subsistence living to get their goods and services Identify the reasons that people have that cause them to produce goods and services 	<ul style="list-style-type: none"> Show appreciation to the knowledge of how production of goods and services is done.
48: Exchange, Past and Present	<ul style="list-style-type: none"> Barter and trade The kinds of items used in the barter trade The change of commerce or business activities from the past to present The reasons for change of commerce or business 	<ul style="list-style-type: none"> Explain barter system Identify and list reasons for having barter system Identify and list kinds of items used in the barter trade Explain the change of commerce or business activities from the past to present Identify the reasons for change of commerce or business 	<ul style="list-style-type: none"> Show appreciation of how barter trade played an important role to satisfy needs and wants and the change of commerce or business activities from the past to present and its reasons
Benchmark	6.2.1.2. Critically reflect on the advantages and the disadvantages of the cash economy in meeting needs and wants.		
Lesson No.& Title	Knowledge	Skills	Attitudes/Values
49: What is a Business?	<ul style="list-style-type: none"> The definition of the word 'business' The reasons for running a business 	<ul style="list-style-type: none"> Explain the term 'business' Identify the reasons for running a business 	<ul style="list-style-type: none"> Show appreciation of what is a business, the reasons for running a business and the advantages of having different types of businesses



50: Money and making profit	<ul style="list-style-type: none">• Money and its uses'• Revenue and expense	<ul style="list-style-type: none">• Explain the words 'money' and 'cash'• The definition of 'revenue' and 'expense'• Explain the processes of making of profit in the cash society	<ul style="list-style-type: none">• Show appreciation of money and value how the making of profit happens in the cash society
51: Prices	<ul style="list-style-type: none">• The definition of the word 'price' or 'prices'• The definition of the words 'market' and 'world markets'	<ul style="list-style-type: none">• Explain the words 'prices', 'market' and 'world market'• Identify parties who decides the prices of goods and services	<ul style="list-style-type: none">• Appreciate the knowledge of how prices are decided by buyers and sellers, on the local markets as well as the world markets
Benchmark	6.2.1.3. Discuss and compare the advantages and the disadvantages of subsistence economy and cash economies in meeting needs and wants.		
Lesson No.& Title	Knowledge	Skills	Attitudes/Values
52:Development of money	<ul style="list-style-type: none">• The development of money• The different qualities of good money• The different uses of money• The advantages of the use of money	<ul style="list-style-type: none">• Explain the development of money• Identify and list the different qualities of good money• Identify and list the different uses of money and its advantage	<ul style="list-style-type: none">• Appreciate the development of money, its different qualities, different uses and its advantages
53: Manufactured goods	<ul style="list-style-type: none">• The definition of the words 'manufacturing' 'semi processed' 'technology and manufactured goods'• The processes of manufacturing from the primary product stage to secondary product stage	<ul style="list-style-type: none">• Explain the words 'manufacturing' 'semi processed' 'technology and manufactured goods'• Explain the processes of manufacturing from the primary product stage to secondary product stage	<ul style="list-style-type: none">• Appreciate the processes involved in the manufacturing of goods
54: Better means of transportation for business	<ul style="list-style-type: none">• The definition of 'transportation' and its importance to trade or business• The types of transportations used in business• The different means of transportations used to carry different types of cargoes in business	<ul style="list-style-type: none">• Explain the word 'transportation and its importance to trade or business• Identify and explain types of transportations used in business• Identify and explain different means of transportations used to carry different types of cargoes in business	<ul style="list-style-type: none">• Appreciate better means of transportation in business
Content standards	6.2.2. Students will be able to determine and evaluate pricing and record keeping management practices in terms of their effectiveness, accountability, pricing formula, and profit margins.		
Benchmark	6.2.2.1. Determine and analyse pricing and record keeping management practices in terms of their effectiveness, accountability, pricing formula, and profit margins.		



Lesson No.& Title	Knowledge	Skills	Attitudes/Values
55: Pricing of goods	<ul style="list-style-type: none"> Pricing of goods and keeping records of cash- (revenue and expenses) 	<ul style="list-style-type: none"> Discuss the importance of correct pricing of goods Keep simple records of their small business activity 	<ul style="list-style-type: none"> Appreciation of business activities on a small scale. Value the importance of proper records and accountability of information.
56: Keeping records of sales and purchases 56: Keeping records of sales and purchases	<ul style="list-style-type: none"> Sales and purchases Calculating profit and loss from sales 	<ul style="list-style-type: none"> Discuss various record keeping of their cash sales and profit gained from the sales 	<ul style="list-style-type: none"> Appreciation of the importance of keeping records.
57: Case study Activities in informal sectors	<ul style="list-style-type: none"> A formal small scale business and its activities Keeping proper records to ensure accountability and prosperity of the business activity. 	<ul style="list-style-type: none"> Carry out a research and compile report on the effectiveness of an informal business activity on a small scale 	<ul style="list-style-type: none"> Appreciate the understanding of having variety of business activities in the formal and informal sector.
Benchmark	6.2.2.2. Use basic research skills to investigate a pricing and record keeping practice employed by one successful and one unsuccessful business, draw appropriate conclusions, and make suggestions for improvements.		
Lesson No.& Title	Knowledge	Skills	Attitudes/Values
58: Business idea and resources	<ul style="list-style-type: none"> The definition of the word 'business idea' Examples of business ideas The importance of having a business idea before starting a business The process to generate a business idea The resources to support the business idea 	<ul style="list-style-type: none"> Explain the meaning of business idea Identify and list examples of business ideas Explain the importance of having a business idea before starting a business Explain the process of how to generate a business idea 	<ul style="list-style-type: none"> Appreciation of the understanding of how important it is to have a business idea before starting a business and the resources to support it
59: Start-up legal requirements	<ul style="list-style-type: none"> What are legal requirements for businesses Examples of legal requirements when starting up a business The importance of having legal requirements when starting up a business 	<ul style="list-style-type: none"> Explain legal requirements for business Identify and list examples of legal requirements when starting up a business Explain the importance of having legal requirements when starting up a business 	<ul style="list-style-type: none"> Appreciation of the understanding of legal requirements when starting up a business
60: Case Study- How someone started their small business	<ul style="list-style-type: none"> A story of how someone started their business with a business idea which met necessary legal requirements and how he/she supported the business idea to grow with the required resources 	<ul style="list-style-type: none"> Identify the business idea Identify resources used to support the business idea Identify the legal requirements 	<ul style="list-style-type: none"> Appreciate the knowledge of having a business idea and the resources to support it and how legal requirements are necessary to start a business



Benchmark	6.2.2.3. Explain the process for determining and controlling the prices of goods and services. 6.2.2.4. Examine the role of Independent Competition and Consumer Commission relating to the pricing of goods and services in Papua New Guinea.		
Lesson No.& Title	Knowledge	Skills	Attitudes/Values
61: Controlling price of goods	<ul style="list-style-type: none">• Price of goods depends on how much people are willing to pay for that good• One producer usually cannot change the market price• More goods for sale less price• Less good for sale high price	<ul style="list-style-type: none">• Discuss reasons of price fluctuations and demands on sale of goods• Identify the role of ICC and its importance in price control	<ul style="list-style-type: none">• Appreciate the benefits of selling goods at high price
62: Role of Independent Competition and Consumer Commission	<ul style="list-style-type: none">• What is the role of ICCCC?• Stabilization of sales and prices of goods	<ul style="list-style-type: none">• Describe the role of ICCCC• Outline its functions• Create awareness of ICC	<ul style="list-style-type: none">• Appreciate the role of ICC in a balance price control for clients and customers
63. Industry Boards	<ul style="list-style-type: none">• What is are Industry Boards?• Role of Industry boards• Stabilization funds and its benefits	<ul style="list-style-type: none">• Discuss the role of Industry Boards• Explain the purpose and describe the functions of stabilization funds	<ul style="list-style-type: none">• Appreciate and value the role of ICC in the business sector
Content standards	6.2.3. Students will be able to explore the basics of business communication services and how they contribute to the success of business operations in the formal and informal business sectors.		
	6.2.3.1. Evaluate different means of communication used in the formal and informal business sectors.		
Lesson No.& Title	Knowledge	Skills	Attitudes/Values
64: Benefits of communication in business	<ul style="list-style-type: none">• Why communication is important in business operations?	<ul style="list-style-type: none">• Discuss and list a variety of communication services and describe how they help business operations• Outline different means of communication and how they assist businesses.	<ul style="list-style-type: none">• Appreciate the benefits of communication in business operations
65: Means of communication used in formal business sector	<ul style="list-style-type: none">• Means of communication used in formal business sector• Purpose of means of communication used in business in formal sector	<ul style="list-style-type: none">• Explain means of communication and how they assist business operations in formal business sector.• Explain the purpose of the means of communication used.	<ul style="list-style-type: none">• Appreciate and value the importance of communication in business operations



66: Means of communication used in informal business sector	<ul style="list-style-type: none"> Means of communication used in informal business sector Purpose of means of communication used in business in informal sector 	<ul style="list-style-type: none"> Explain means of communication and how they assist business operations in formal business sector. Explain the purpose of the type of communication used. 	<ul style="list-style-type: none"> Appreciate and value the importance of communication in business operations
Benchmark	6.2.3.2. Examine how communication services contribute to the successes of business operations in the formal and informal business sectors.		
Lesson No.& Title	Knowledge	Skills	Attitudes/Values
67: Importance of Government Communication services to businesses	<ul style="list-style-type: none"> The importance of postal services to businesses The importance of telecommunication services to businesses The importance of national information and communication services to businesses 	<ul style="list-style-type: none"> Explain the importance of postal services to businesses Explain the importance of telecommunication services to businesses Explain the importance of national information and communication services to businesses 	<ul style="list-style-type: none"> Appreciation of the importance of postal services, telecommunication services and national information and communication services to businesses
68 and 69: Case Study- A simple case study of how government communication services contribute to the successes of business operations	<ul style="list-style-type: none"> A simple case study of how <ol style="list-style-type: none"> Postal services contribute to the successes of business operations Telecommunication services contribute to the successes of business operations 	<ul style="list-style-type: none"> Explain how postal services contribute to the successes of business operation Explain how telecommunication services contribute to the successes of business operations. 	<ul style="list-style-type: none"> Appreciation of how postal services, telecommunication services and national information and communication services contribute to the successes of business operations
Benchmark	6.2.3.3. Identify and discuss basic government communication services as a means of communication in business		
Lesson Title & No	Knowledge	Skill	Attitudes/Values
70: Importance of different communication means in business	<ul style="list-style-type: none"> The different communication means in business Importance of these communication means in business 	<ul style="list-style-type: none"> Identify and list the different communication means in business Explain the different communication means in business Identify and explain the Importance of these communication means in business 	<ul style="list-style-type: none"> Appreciation of the importance of different communication means in business
71: Means of Communication in formal business sector	<ul style="list-style-type: none"> The description of formal business sector The means of communication used in formal sectors 	<ul style="list-style-type: none"> Explain what formal business sector is Identify and list different means of communication used in formal sector 	<ul style="list-style-type: none"> Appreciation of the knowledge of different means of communication used in formal sector



72: Means of Communication in informal business sector	<ul style="list-style-type: none">• The informal business sector• The means of communication used in informal sectors	<ul style="list-style-type: none">• Explain what informal business sector is• Identify and list different means of communication used in informal sector	<ul style="list-style-type: none">• Appreciation of the knowledge of different means of communication used in informal sector
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Assessment, Recording and Reporting

Assessment and reporting is an integral part of the delivery of any curriculum used in the schools. A well planned curriculum must have equally planned and developed assessment procedures. Standards based Curriculum (SBC) assessment encourages the use of bench marks and commended types of assessment that promote standards for a range of purposes. Assessment and reporting is for:

- Improving learning- Parents and guardians are well informed about the students' performance- what they learn, think, make and do;
- Maintaining a two way communication: student and teacher, school and parents;
- Communicating and reporting on students learning; and
- Use a common language and good strategies for communicating and reporting students learning.

What is an effective assessment practice?

Effective and informative assessment practice has the following attributes:

- It is balanced;
- Comprehensive; and
- Valid

Assessment is the process of identifying, gathering and interpreting information about students' learning. It is purposely done to provide information on student's achievement and progress. It directs teachers in ongoing teaching and learning. Effective and meaningful assessment must be maintained at all times. The content standards stated in the expected curriculum for this grade are prescribed by units and sets the basis for planning and conducting on-going assessment. Ongoing classroom assessment is done to:

- support student learning;
- monitor student learning;
- diagnose student learning needs;
- evaluate teaching program; and
- inform student reporting process

Benchmarks

Benchmarks provide content standards more specific statements at each grade level to facilitate integration into the curriculum.

Benchmarks are specifications of content standards or more detailed descriptions of a specific level of student performance expected of students at particular ages, grades, or levels of development.

Benchmarks set the basis of the expectations in achieving content standards at particular ages, grades, or levels of development which in our case benchmarks set the basis of the expectations in achieving content standards at particular



grades. It draw from the existing content standards the knowledge, skills values and attitudes a learner must achieve. It qualifies students to progress on to the next grade.

Benchmarks focus on the essential knowledge, skills, values and attitudes that all students are expected to learn, master and demonstrate competency using various representations in real life situation.

For example the content standard stated below has a number of benchmarks or more detailed descriptions or more specific statements expected of students at that particular grade which all students are expected to learn, master and demonstrate competency using various representations in real life situation.

Content Standards	Benchmarks
6.1.1. Students will be able to investigate the cultural and nutritional value of crops, crop farming systems and practices, and their benefits to mankind.	6.1.1.1. Use basic research skills to investigate the types of food crops grown and consumed in different parts of the country. 6.1.1.2. Compare and contrast cultural and nutritional values of crops. 6.1.1.3. Examine crop farming systems and practices, and evaluate their benefits to people.

Example

Based on content standard 6.1.1 and benchmark 6.1.1.1 students are asked to make a poster and do a presentation on type of crops grown and consumed in their own province and state its benefits. Students will make a poster and present and they will be assessed using the following criteria:

- Use of a poster;
- Clarity and relevancy;
- Organization and Neatness;
- Language usage;
- Confidence; and
- Overall impression



The table below can be used to identify if all students have learnt, master and demonstrate competency in the above benchmark (6.1.1.1) using the given representation in real life situation

Assessment Process

Proficiency levels							
	Criteria	50% E	50- 64% D	65 -74% C	75 - 84% B	85 - 100% A	Marks
1	Use of a poster	The poster did not show types of crops and their benefits.	The information on the poster showing types of crops and their benefits was not readable, suitable and confusing.	The poster did not clearly show types of crops and their benefits.	A good poster showing types of crops and their benefits.	Excellent poster showing types of crops and their benefits.	5
2	Clarity and relevancy	The information on the poster was not clear and even not relevant	Little information on the poster which was not very clear and relevant	The information on the poster was moderately clear and partly relevant	The information on the poster was clear and relevant	The poster was clear and the required information was clearly stated and relevant to the context	8
3	Organization and Neatness	Organization and Neatness of the information on the poster was very poor	The information on the poster was not organized well and the neatness was poor	The information on the poster was moderately organized well and the neatness was average	The information on the poster was neat and presentable	The information on the poster was organized well, neat and the information on it was presentable	8
4	confidence	The presenter was not confident and did not present well	The presenter was not very confident and did not present well	The presenter was confident but did not present well	The presenter was confident and presented well	The presenter was very confident and presented well	4
5	Language usage	The language used in the presentation was difficult and confusing	The language used in the presentation was not clear and simple	The language used in the presentation was partly clear and simple	The language used in the presentation was clear and simple	The language used in the presentation was very simple, clear and well understood	5
	Overall Impression	The planning, preparation and presentation was poor	The planning, preparation and presentation was not good	The planning, preparation and presentation was partly good	The planning, preparation and presentation was good	The planning, preparation and presentation was excellent	10



The total marks from each given set of criteria are converted to percentage (%) and individual student's mastery or competency level of the essential Knowledge, Skills; Values and Attitudes for the given Benchmark can be identified using the proficiency or competency levels in the given table below.

Teachers can use the benchmark proficiency level table below to give individual student's mastery or competency level of the essential Knowledge, Skills; Values and Attitudes identified in each Benchmark.

Proficiency levels			
Grade	% Mark	Achievement Level	Explanation
A	Above 85%	Very High Achievement (VHA)	A grade indicating excellent achievement in the assessment task. The student has an extensive knowledge and understanding of the benchmark and can readily apply this knowledge. In addition, the student has achieved a high level of competence in the processes and skills of the benchmark and can apply these skills to new situations.
B	70-84%	High Achievement (HA)	A grade indicating a high level of achievement in the assessment task. The student has a thorough knowledge and understanding of the benchmark and competence in the processes and skills. In addition, the student is able to apply their knowledge and skills to most new situations.
C	50-69%	Satisfactory Achievement (SA)	A grade indicating substantial achievement in the assessment task. The student has demonstrated attainment of the main knowledge and skills of the subject and has achieved a sound level of competence in the processes and skills of the benchmark.
D	20-49%	Low Achievement (LA)	A grade indicating satisfactory achievement in the assessment task. The student has demonstrated an acceptable level of knowledge and understanding of the content and has achieved a basic level of competence in the processes and skills of the benchmark.
E	0-19%	Below Minimum Standard (BMS)	A grade indicating elementary achievement in the assessment task. The student has an elementary knowledge and understanding of the content and has achieved limited competence in some of the processes and skills of the benchmark.



Assessment in Making a Living

Making a Living is an activity-project oriented subject where students will be performing various activities in practical form. There will be more practical lessons taught than theory lessons. Students will be assessed by their practical involvement in group activities and finished products they create. This section will outline samples of assessment done during Making Living lessons.

Types of Assessment Strategies and Methods

Teachers are encouraged to use two or more types of assessment when assessing students learning. SBC specifically promotes three types of assessment. These are assessment;

- *for learning*
- *as learning and*
- *of learning*

Assessment OF Learning

Assessment of learning is the use of a task or an activity to measure, record, and report on a student's level of achievement in regards to specific learning expectations such as unit tests and end of term or year exams. It is normally referred to as **Summative Assessment**.

Assessment AS Learning

Assessment as learning is the use of an assessment task or an activity by the teacher in his/her everyday teaching. This strategy provides students with opportunities to understand what they have learnt or is having difficulties with. Self and peer assessments allow students to reflect on their own learning and identify areas of strengths and weaknesses. These tasks offer students the chance to set their own personal goals to improve their own learning.

Diagnostic Assessment

Apart from these three main types of assessment, teachers are expected to do the diagnostic test/assessment to identify strengths and weaknesses in students. This can be done before any teaching and learning of a new content and for new entry levels for students.

Diagnostic assessment is a form of pre-assessment that allows a teacher to determine students' individual strengths, weaknesses, knowledge, and skills prior to instruction. It is primarily used to diagnose student difficulties and to guide curriculum and lesson planning.



Assessment Methods

These are some methods that teachers can use to assess students' performance:

- Observing students during the lesson
- Conferencing with students
- Student's Portfolio
- Tests and
- Assignments (projects/reports/quizzes/presentations/practical work samples)

Teachers need to apply processes for assessment. Recording and reporting enables them to determine which Content standards and Benchmarks students have achieved and to report these achievements to parents in ways that make sense to them. The students' knowledge and skills are continually developing in a healthy classroom environment. It is important for teachers to be aware of and record, what the students know and what they can do. When teachers have this information, programming can be made purposeful. It can be directed at the learning weakness and matches the student's needs.

Assessment Strategies

Assessment strategies are used to conduct or deliver the assessment tasks planned for the students. There are many options available for teachers to choose from. The few listed below are recommended for all the teachers to use to assess students. These include:

- Observations
- Portfolios
- Tests and
- Self and peer assessment

1. Observation

To observe is to look and listen carefully to a student or students to make an assessment of and about what they know, understand and can do. The teachers while listening and looking can ask questions and look at or observe how the students can work as a group or an individual to complete a task.

The teacher should do this to gather information about students:

- Ability to work alone or in a group
- Understanding of the content of the learning task
- Way of thinking how
- Leadership behaviour and
- Interaction with each other.

This strategy is very suitable for peer assessing. Students can be tasked to observe a friend and later report what they saw.



2. Portfolios- Studying Work Samples

The teacher thinks about and examines work samples from students. Work samples can be written tasks on paper, small chalkboards or slates, worksheets, drawing or models. Studying work samples helps the teachers to assess:

- the students level of knowledge and understanding of the learning taking place;
- students thinking skills and their ability to present their own ideas and be creative;
- how much time and effort the students used to do the assigned tasks;
- the skills the students used to produce the work; and
- if the work meets the result of the content standard.

3. Test

Test is an assessment strategy used to assess student performances of their learning formatively or summative. Class teachers prepare these tests with careful considerations of;

- the knowledge and skills to assess the students on;
- the language level to be used;
- the construction of questions – clear and precise;
- the content of the intended part of the curriculum content;
- how much each question is worth; and
- how to award marks the questions.

4. Self and Peer Assessment

In peer assessment organized structure is partner work. Each student performs a skill and the other acts as the observer. They change places when they complete their task. The observer records the partner's performance on an agreed checklist or recording journal. The recoding of each other's performance is recorded and reported against an agreed set of criteria.

Assessment Tasks

It is important to plan assessment for the whole year using the content overview and the yearly or term plans. Assessment tasks form the basis of the assessment processes, of assessing each learner in relation to the content standards.

Assessment tasks are learning activities created from the benchmarks. These are written and specifically designed and planned before administering. This particular activity has key knowledge, skills, attitudes and values that must be achieved at the end of performing the assessable tasks.



Assessment Plan

To plan assessment tasks, teachers must decide which type of assessment methods will be used to demonstrate the achievement of the content standard. Content standards are the starting points in the process of identifying and planning assessment tasks.

Learning activities and assessment tasks must be planned before delivery. In the process of writing and planning an assessment task, the following are some points that you may consider:

- choose assessment methods suitable for the assessment task
- develop assessment criteria by breaking down the knowledge, skills, attitudes and values that the students will need to demonstrate to complete the activity successfully
- consulting Bloom's Taxonomy as per the students cognitive levels

Teachers are the best assessors of the students and must ensure that all assessment tasks are:

- clearly stated in language students can interpret;
- link to the content standards;
- balanced, comprehensive, reliable and fair; and
- engages the learner.

According to the suggested grade three content overview and yearly plan, a suggested yearly assessment plan for assessment tasks has been planned and placed according to the number of teaching weeks in the school year.



Grade Six Yearly Assessment Overview

This is an assessment task overview planned for teachers in Grade six for the year. These suggested assessment tasks are given as examples you can use but if you feel that you can use these as guide to write up your own for your classes then that is also encouraged. The assessment tasks are written from the listed Benchmarks stated for each Content standard.

Assessment tasks prescribed in the syllabus are interpreted into specific assessment tasks described in the table below for the year. You are given the flexibility to formulate your own assessment tasks if you are not comfortable with the suggested specific assessment tasks.

Grade 6 Suggested Yearly Assessment Task Outline

Week	Strand	Unit	Content Standard	Benchmarks	Suggested Specific Assessment Tasks
2	1.Crop and Livestock Farming	1. Crop Farming	6.1.1	6.1.1.1 6.1.1.2	Make a poster of type of crops grown and consumed in your area and state its benefits
4	1.Crop and Livestock Farming	1. Crop Farming	6.1.2	6.1.2.2	Identify and describe the advantages and disadvantages of traditional and modern farming methods and cultivation practices
6	1.Crop and Livestock Farming	2.Livestock Farming	6.1.3	6.1.3.2	Make a poster to describe the economic and nutritional benefits of selected farm animals
8	1.Crop and Livestock Farming	2.Livestock Farming	6.1.4	6.1.4.1 6.1.4.2	1. Select a type of management systems used in raising livestock and describe its methods 2. Summative Test
Term 2					
2	1. Crop and Livestock Farming	3. Land and water resource management	6.1.5	6.1.5.1 6.1.5.2 6.1.5.3	Investigate in groups by collecting different soil samples and describe its suitability for the different plant growth
4	1. Crop and Livestock Farming	3. Land and water resource management	6.1.6	6.1.6.1 6.1.6.2	Describe salt and fresh water farming and outline the different types of aquatic farming methods
6	2. Business environment and Practices	1. Satisfying needs and wants	6.2.1	6.2.1.1 6.2.1.2 6.2.1.3	Outline the differences between needs and wants from subsistence living to cash society
8	2. Business environment and Practices	2. Business Communication Services	6.2.2	6.2.2.1	Do a survey in your community to identify and list different formal and informal business activities 2. Summative Test

**Term 3**

2	2. Business environment and Practices	2. Business Communication Services	6.2.3	6.2.3.1 6.2.3.2	List and describe the different types of business communication services
4	3. Basic Technology	1. Introduction to Resistant Materials	6.3.1	6.3.1.1 6.3.1.2	Create a poster with safety symbols and their meanings used in a workshop or a tools storage room
6	3. Basic Technology	1. Introduction to resistant materials	6.3.2	6.3.2.2	Choose a factor that affects a design and explain its importance
8	3. Basic Technology	2. Home management	6.3.3	6.3.3.1 6.3.3.2	1. Construct a poster of safety practices in the home and describe in one paragraph a hygienic practice 1. Summative Test

Term 4

2	3. Basic Technology	2. Home management	6.3.4	6.3.4.1	Name and describe some household responsibilities and how to effectively implement the responsibilities
4	3. Basic Technology	3. Media and Communication	6.3.5	6.3.5.1	Choose a common type of media or digital device and describe its uses and consequences of improving communications
6	3. Basic Technology	3. Media and Communication		6.3.6.1	Research, draw or design a simple computer and label its parts
8					Summative Test



Sample Assessment Plan

There are different ways to plan assessment tasks and teachers have used them in classrooms. These sample assessment tasks are given as examples for teachers to use and plan their own to suit the context and the learning needs of the Grade six students in the classroom. The sample plans here are very explicit and directs the teacher to the content of learning given in the syllabus. Teachers will need to:

- identify valid and reliable assessment tasks from the learning activities
- develop specific assessment criteria that describe exactly what a student must do to be successful in the assessment task
- make sure the students are aware of and understand the assessment criteria and
- give students feedback on their performances in each assessment task against the criteria.

Sample Assessment - Task 1

Term : 1		Week: 2			Lesson # : 2	
Strand 1: Crop and Livestock Farming		Unit 1: Crop Farming				
Content Standard	Benchmark	Assessment Type	Assessment Task	Assessment Criteria	Assessment Method	Recording & Reporting Method
6.1.1. Students will be able to investigate the cultural and nutritional value of crops, crop farming systems and practices, and their benefits to mankind.	6.1.1.1. Use basic research skills to investigate the types of food crops grown and consumed in different parts of the country.	Project Presentation	Make a poster and do a presentation on type of crops grown and consumed in your province and state its benefits and	Students will make a poster and present. The students will be assessed using the following criteria: <ul style="list-style-type: none">• Use of a poster• Clarity and relevancy• Organization and Neatness• Language usage• Confidence• Overall impression	Observation, checklist and rubrics	Students portfolio



Proficiency or achievement levels of the benchmark

Sample scale for the assessment criteria used in Sample Assessment - Task 1

Assessment Method

Proficiency levels							
	Criteria	50% E	50 - 64% D	65 - 74% C	75 - 84% B	85 - 100% A	Marks
1	Use of a poster	The poster did not show types of crops and their benefits.	The information on the poster showing types of crops and their benefits was not readable, suitable and confusing.	The poster did not clearly show types of crops and their benefits.	A good poster showing types of crops and their benefits.	Excellent poster showing types of crops and their benefits.	5
2	Clarity and relevancy	The information on the poster was not clear and even not relevant	Little information on the poster which was not very clear and relevant	The information on the poster was moderately clear and partly relevant	The information on the poster was clear and relevant	The poster was clear and the required information was clearly stated and relevant to the context	8
3	Organization and Neatness	Organization and Neatness of the information on the poster was very poor	The information on the poster was not organized well and the neatness was poor	The information on the poster was moderately organized well and the neatness was average	The information on the poster was neat and presentable	The information on the poster was organized well, neat and the information on it was presentable	8
4	confidence	The presenter was not confident and did not present well	The presenter was not very confident and did not present well	The presenter was confident but did not present well	The presenter was confident and presented well	The presenter was very confident and presented well	4
5	Language usage	The language used in the presentation was difficult and confusing	The language used in the presentation was not clear and simple	The language used in the presentation was partly clear and simple	The language used in the presentation was clear and simple	The language used in the presentation was very simple, clear and well understood	5
6	Overall Impression	The planning, preparation and presentation was poor	The planning, preparation and presentation was not good	The planning, preparation and presentation was partly good	The planning, preparation and presentation was good	The planning, preparation and presentation was excellent	10



Recording & Reporting Method

Sample recording strategy for the assessment task identified from the sample assessment task 1

CRITERIA						Overall Impression	TOTAL MARKS	Percentage
Name	Use of a poster	Clarity and relevancy	Organization and Neatness	confidence	Language usage			
John	5	8	8	4	5	10	40	100%
Luke	3	6	5	3	5	7	29	72.5
Paul	2	7	7	2	4	7	29	72.5
Joe	3	6	6	3	4	9	31	77.5
Susan	4	6	6	4	5	9	34	85

Sample Assessment - Task 2

Term : 4		Week: 10			Lesson # : 108	
Strand 3:		Basic Technology	Unit 3: Media and Communication			
Content Standard	Benchmark	Assessment Type	Assessment Task	Assessment Criteria	Assessment Method	Recording & Reporting Method
6.3.6. Students will be able to demonstrate understanding of the basic functions and components of computers.	6.3.6.1. Discuss the function of computers and where they are mainly used and identify basic parts of parts of a computer.	Assignment	Correctly name the basic parts of a computer and state their functions	1. Label the basic computer parts 2. Correctly name the parts Label 3. State the functions of the parts label	Observation and rubrics	Checklist with comment on individual students



Proficiency level or achievement levels of the benchmark

Sample scale for the assessment criteria used in Sample Assessment - Task 2

Assessment Method

6.3.6.1. Discuss the function of computers, their purposes, and who uses them.					
Marks	Proficiency levels				Criteria
	Grade	% Mark	Achievement Level	Explanation	
20 - 25	A	Above 80%	Very High Achievement (VHA)	A grade indicating excellent achievement in the assessment task. The student has an extensive knowledge and understanding of the benchmark and can readily apply this knowledge. In addition, the student has achieved a high level of competence in the processes and skills	Correctly name and state functions of most parts label
15 - 19	B	60-79%	High Achievement (HA)	A grade indicating a high level of achievement in the assessment task. The student has a thorough knowledge and understanding of the benchmark and competence in the processes and skills. In addition, the student is able to apply their knowledge and skills to most new situations.	Correctly name and state functions of some parts label
10 - 14	C	40-59%	Satisfactory Achievement (SA)	A grade indicating substantial achievement in the assessment task. The student has demonstrated attainment of the main knowledge and skills of the subject and has achieved a sound level of competence in the processes and skills of the benchmark	Correctly name and state functions of less than half of the parts label
5 - 9	D	20-39%	Low Achievement (LA)	A grade indicating satisfactory achievement in the assessment task. The student has demonstrated an acceptable level of knowledge and understanding of the content and has achieved a basic level of competence in the processes and skills of the benchmark.	Correctly name and state functions of very few parts label
0 - 4	E	0-19%	Below Minimum Standard (BMS)	A grade indicating elementary achievement in the assessment task. The student has an elementary knowledge and understanding of the content and has achieved limited competence in some of the processes and skills of the benchmark.	



Recording & Reporting Method

Sample recording strategy for the assessment task identified from the sample assessment task 2

	Criteria					Marks	Percentage	Proficiency level
Name	1	2	3	4	5			Benchmark Achievement Levels. 6.3.6.1. Discuss the function of computers and where they are mainly used and identify basic parts of a computer.
	25	19	14	9	4	25	100%	
John				6		6	24	Low Achievement(LA)
Luke					8	8	32	Low Achievement(LA)
Paul		17				17	68	High Achievement(HA)
Joe	22					22	88	Very High Achievement(VHA)
Susan			12			12	48	Satisfactory Achievement(SA)

Key

1	2	3	4	5
Correctly name and state functions of most parts label	Correctly name and state functions of some parts label	Correctly name and state functions of less than half of the parts label	Correctly name and state functions of very few parts label	Correctly name very few parts label but did not state their functions or vice versa

Teachers must create the tasks for each criteria to be demonstrated by the students for all the assessment sample tasks if they wish to conduct the samples in their classes.

Recording and Reporting

The recording and reporting of student achievements in the classroom is very important. Teachers use a range of tasks to ensure that commended benchmarks are equally assessed and reported. This helps the teachers to reflect the effectiveness of their teachings.

Teachers should keep almost accurate records of how well the students achieved the knowledge, skills, attitudes and values in the content standards or specifically in the benchmarks in grade six.

Making a Living subject recording

Teachers can record the evidence of students' demonstrations of achieving the content standard statements, using assessment instruments that are manageable. Here are some recommended recording methods;

- individual or class checklist, or class grid to record observations;
- comments on students' work indicating what they have done well and where they need to improve;
- work samples being added to a portfolio;



- test marks;
- students' assessments of their own performance using the assessment criteria; and
- students' assessment of their peers using the assessment criteria.

Students are given constructive feedback by the teacher on what they can do well and what they need to do to improve. Likewise, teachers are focus on the content they are assessing and are able to apply fair and consistent assessment.

Reporting

Reporting is important in assessment and must be done effectively. Teachers should report what students have done well and how they can improve further. Formal reporting through written reports and interviews are done to inform parents and guardians of the students learning progress and other related areas such as behaviors. Teachers must ensure that the student has demonstrated and achieved the content standards independently on a number of occasions. These can be done formally or informally.

The achievements are reported to the respective stakeholders in relation to;

- weaknesses
- strengths
- parent and guardian support and
- evaluation of content of learning.

Recording and Reporting Strategies

The types of strategies teachers may want to use in recording student achievements must be interpreted well to the expected audience.

Students must be informed of their achievements in the assessment tasks they participated in. They feel responsible for their own learning and can be assisted to identify their weak areas in the task. This experience will enable them to take up the challenge to improve on their own weaknesses.

Samples of recording and reporting templates

Keeping informed records of student performances on formal recording tools is very important both for the student, guardians, parents and teachers of the next grade level. Some recording tools are shown below as samples for teachers to use apart from those currently used in the classroom. These are:

Sample Anecdotal Notes – Class Grid

- record the dates of assessment tasks;
- write comments on the performance observed as per the criteria given;
- one box is for a student; and
- this same grid can be used for a term depending on the type and number of assessment tasks prepared





Individual Sample recording strategy for all the assessment tasks in a term

Individual termly assessment record							
Name: John Grade : 6 Term : 1							
Ass Type	Total Score/ Test	Date	Student Score	%	Proficiency Level	Benchmark	Evaluation/ Comments
Assignment 1	25	24/2/18	6	24	Low Achievement (LA)	6.3.6.1	Fail the benchmark
Project	40	15/3/18	29	72.5	High Achievement (HA)	6.1.1.1	
Assignment 2	20	02/3/18	13	65	Satisfactory Achievement (SA)	6.2.1.1	
Test	25	26/3/18	23	92	Very High Achievement (VHA)	6.1.1.1 6.1.2.3	
Exam	50	04/4/18	37	74	High Achievement (HA)	6.1.1.1 6.1.2.3 6.1.4.2	



**Class Sample recording strategy for all the assessment tasks in a term**

Termly assessment record – Class Overview								
Term : 4								
Student Name	Assessment type					Total	%	Comments
	Assgnt 1	Project	Assgnt 2	Test 1	Exam			
	25	40	20	25	50			
	6.3.6.1	6.1.1.1	6.2.1.1	6.1.1.1 6.1.2.3	6.1.1.1 6.1.2.3 6.1.4.2			
John	6	29	13	23	37	108	67.5	Met the expected achievement level of most benchmarks
Luke	8	29	11	15	43	106	66.3	
Paul	17	31	15	22	23	108	67.5	
Joe	22	34	10	21	35	122	76.3	
Susan	12	29	18	15	29	103	64.4	
TOTAL	65	152	67	97	167			
%	52	76	67	76.8	66.8			
Proficiency level	SA	HA						
Comments	50% fail the benchmark	Majority mastered the KSAs						

Making a Living - A General Checklist for Practical Projects

Class: <input type="text"/>	Grade: <input type="text"/>	Date: 9/06/18	Week: 2, 4, 6	Year: -----				
Scoring: 3: above developmental level		2 : at developmental level	1: below developmental level					
	Digging and mulching	Watering			Weeding			
Student Names								
John								
Luke								
Paul								
Joe								
Susan								

Note: Teachers can identify attitudes displayed by each student through correct application of wedding, mulching and watering plant.





Evaluation

Evaluation is the process in which teachers will use assessment information to make judgments about the effectiveness of their teaching, learning and assessment programs.

This information can also be used by teachers to evaluate the effectiveness and the quality of physical education lessons taught throughout the year. Similarly, a whole school can analyse results of the subject by strands and standard statements or by grades, and identify areas of strengths and weaknesses. For example, if a whole school is not performing well in Making a Living then Making a Living could become the focus for school based in-service and resource development for the next year. In this way, assessment information serves three purposes;

- to improve students' learning;
- to improve the quality of teaching; and
- to improve the content.

There are several ways to conduct evaluation and therefore, teachers are encouraged to utilize appropriate methods to do their evaluations.





Glossary

Making a Living subject has words specific to teaching and learning Making a Living. The words provided here come from the content of learning for Making a Living in Grade six. Syllabus outcomes, criteria, Benchmarks and examination questions have key words that state what students are expected to be able to do.

This section will be in two parts

1. Assessment
2. Teaching and learning

1.1 Assessment glossary

Using the glossary will help teachers and students understand what is expected in responses to assessment tasks.

Term	Definition
analyze	Identify components and the relationship between them, draw out and relate implications
appreciate	Make a judgment about the value of
assess	Make a judgment of value, quality, outcomes, results or size
calculate	Ascertain/determine from given facts, figures or information
classify	Arrange or include in classes/categories
Compare	Show how things are similar or different
construct	Make, build, put together items or arguments
contrast	Show how things are different or opposite
define	State meaning and identify essential qualities
demonstrate	Show by example
describe	Provide characteristics and features
discuss	Identify issues and provide points for and or against
distinguish	Recognize or note/indicate as being distinct or different from; to note differences between
evaluate	Make a judgment based on criteria, determine the value of
explain	Relate cause a
identify	Recognize and name
interpret	Draw meaning from
investigate	Plan, inquire into and draw conclusions about
justify	Support an argument or conclusion



1.2 Teaching and Learning

Term	Definition
crop rotation	One or more crops are grown in separate areas in the field and rotated in order, each year.
inter-cropping	Two crops, for example coconut and cocoa, are grown using definite spacing between plants and rows in the same year.
mixed cropping	More than one crop is planted on a piece of land.
mono cropping	Only one crop is grown on a piece of land
agriculture	The cultivation of land, including raising crops and animals.
bush fallow cultivation	A system of farming which involves clearing a piece of land, cultivating it until the soil loses its nutrients, then moving onto another piece of land. Usually such an area is left fallow (unused) for at least ten years to regain its nutrients naturally, before it is used again. Only a pieces of land are used by a farmer, in a continuing cycle.
compost	A mixture of different kinds of organic matter, such as manure and plant remains, which is decaying. It is used for fertilizing land.
Continuous cultivation	A system of farming which involves cultivating the same piece of land all the time. Its nutrients are renewed because farmers add manure and compost to the soil. Different crops are planted in turn.
Diet	The type of food a person usually takes.
fertilizer	Any material which, when added to the soil ,increases its nutrients so plants will grow better.
humus	When compost is fully decomposed, it is called humus. It is dark brown in color, and an important source of mineral nutrients for plants.
immature soil	Soil which is not well-weathered and has not finished developing.
ingredients	Foods needed to make a recipe.
inorganic fertilizer	Fertilizer made up of chemicals, not organic matter.
insecticides	Poisons which kill insects. They can also be dangerous to humans, so should be avoided if possible.
intensive management	A system of raising poultry where chickens are kept inside, often in small cages, and fed commercial rations. Costs are high but, due to efficiency, money income is also high.
kitchen	The place in the home where food is prepared and cooked
mulch	Dried grass and leaves placed around a plant to prevent water loss and weed growth, and to add nutrients to the soil.
nutrients	Substances in food. They are used by the body for growth, energy, and protection
organic fertilizer	Fertilizer made of organic matter, such as compost.
organic matter	Decomposed remains of organisms, such as plants and animals, used for adding nutrients to soil.
pruning	Cutting excess growth off plants, to encourage better fruiting.
semi-intensive management	Also called the restricted range system of raising poultry. Chickens are kept indoors at night but during the day they can walk around and find food, inside a fenced area.
shifting cultivation	A system of farming which involves clearing a piece of land, cultivating it until the soil loses its nutrients, then moving onto another piece of land. Farmers may or may not come back to the land they have already used.



Term	Definition
soil profile	A vertical cut showing topsoil, subsoil and bedrock is called a soil profile. Sections within a soil profile can vary in different regions, e.g. topsoil will be deeper in a river valley than on a steep slope.
staking	Tying plants to stakes to encourage better growth and fruiting.
subsistence farming	Raising only enough crops and animals for the family's use, with none or only a little left over for swapping. Subsistence farmers usually do not have much cash.
subsoil	The layer underneath the topsoil and above bedrock, it is not cultivated.
topsoil	The surface layer of a soil profile, the layer which is cultivated.
utensils	Equipment use in the kitchen for cooking
goods	A good is something that is useful to people
service	A service is help given to one person by another
production	Is the work done to get goods and services
consumer	A person who use goods and services
consumption	Is the direct consumption of goods and services
surplus	Is the extra goods that have been produced or left over after the producers have consumed enough
exchange	Exchange occurs when people get goods that have been made by others in return for something else
cash	Cash is another name for money
business	A business is made up of a person or a group of people who produce a good or service for money
specialization	Is a process of a business or person applying the skills and knowledge in producing a product and services
expense	Expense is money that a business pays out so that the business can get a revenue
revenue	Is the money coming into a business from the sale of goods and services
profit	Is the extra money that a business earns after paying off its expenses
retailer	A retailer is someone who sells goods or provide services directly to the consumer
customers	Customers are people who buy goods from retailers or wholesalers
retail outlet	Is place where goods and services are sold directly to the consumer
wholesalers	Wholesalers are middle men or women or specialist who buy in bulk from producers
manufacturing	Is a process that involves changing primary products into processed or manufactured goods
technology	Technology refers to the knowledge needed to produce goods either primary products or manufactured goods
manufactured good	A manufactured good is one where the primary product has made or changed into
processed good	A processed good is one which has been made from a primary produce



Term	Definition
semi- processed good	Is a good where the primary product has been partly changed
factory	Is the general name for the place where goods are manufactured
commercial crops	Are crops grown for sale
livestock	Are animals that are kept for sale
exports	Are goods sold to other countries
imports	Are goods bought from other countries
finished products	Are natural resources or raw materials changed into other products
primary products	Are goods which can be changed into other products
diet	The type of food a person usually takes
ingredients	Foods needed to make a recipe
kitchen	The place in the home where food is prepared and cooked
nutrients	Substances in food. They are used by the body for growth, energy, and protection
aesthetics	Equipment use in the kitchen for cooking
artefact	Characteristics of a product or system that makes it look beautiful and attractive.
compression	A manufactured object.
constraints	A squeezing force
control	Aspects that limit conditions within which the work or solution must be developed, e.g. time, materials, tools, human resource, cost, etc.
conventions	The means by which systems are regulated, i.e. an adjustment of the process, which makes the actual result conform more closely to the desired result.
craft	Ways of showing information on designs or working drawings that are understood and recognized to have specific meaning.
criteria	The repetitive production of artefact's, usually for sale. It requires skill in planning the production and making of items and needs manual dexterity and artistic skill. Craft occupations include carpentry, sewing and pottery. It typically involves repetition where many items, often using existing patterns or plans, are manufactured during a production run. Although there is common ground, craft should not be confused with Technology, nor with Art.
data	Statements of a particular standard or requirement that a solution must satisfy.
design (noun)	Raw facts and figures (statistics, rainfall figures, temperature readings, etc.). Data may be processed into information.
design brief	The plan, sketch, model, drawing, etc. that outlines or shows the intention of the proposed solution.
design process	A short and clear statement that gives the general outline of the problem to be solved as well as the purpose of the proposed solutions
design process	A creative and interactive approach used to develop solutions to identified problems or human needs. The associated skills are investigating, designing (development of initial ideas), making, evaluating and communicating. The design process is utilized by engineers, architects, industrial designers, and many others when developing original ideas to meet needs or wants, and to solve problems.



Term	Definition
enabling tasks	Activities used to teach and then practice specific skills in preparation for a more advanced task – sometimes also called resource tasks.
findings	Things that have been discovered after a process of investigation or research. Fitness-for-purpose A solution should be evaluated in terms of the design brief, specifications and constraints AND whether it will meet the purpose for which it was designed.
forming	Changing a material's shape without cutting it.
illustrate	Explain or make something clear by using examples or words or diagrams.
input	The command/information entered into a system.
information	Data that has been processed (recorded, classified, calculated, stored, etc.). Knowledge is gained when different kinds of information are compared and conclusions are drawn.
isometric	A 3D drawing where the lines of sight are set at 30 degrees.
machine	A device made up of a combination of simple mechanisms linked so as to form a system for the purpose of doing work. It can be designed to increase the mechanical advantage and decrease the velocity ratio OR to increase the velocity ratio while decreasing the mechanical advantage.
materials	Physical substances used in technology, e.g. wood, textiles, fabric, plastic, food, etc.
mechanical advantage	A concept that describes how much easier mechanisms or machines can make a particular task. The amount of work done is the same, and the amount of energy expended is the same, but the effort used (force) is less because it is applied over a greater distance, and for a longer period of time
mechanism	Parts that can turn one kind of force into another and give mechanical advantage or a distance advantage. Mechanisms can be combined to form a machine. The basic mechanisms are the lever and the wedge/inclined plane. Cams/ cranks and pulleys/gears are adaptations of the wheel and axle – which is itself a special case of the first class lever.
mode	A way or manner in which a thing is done.
modeling	The testing of a solution, (product or system). This could include using small replicas (scale models), and intangible representations of the solution (mathematical models, computer models, etc.).
output	The actual result obtained from a system.
perspective	A 3D artistic drawing in which the lines of sight converge to vanishing points on the horizon. It can be drawn either to a single vanishing point or to double vanishing points (at this level).
product	The physical/tangible artifact that results from the process (model, poster, chart, etc.).
preserving	A process that prolongs the natural life of a product.
process	The part of a system that combines resources to produce an output that is in response to input.
problem	Something that leads to a need or want and that can give rise to an opportunity.
recycle	To reuse all or part of a substance, including breaking it down to raw material status.



Term	Definition
recyclable	A material that can be recycled.
safety	The way that a person works with tools, materials and equipment that does not harm themselves or others physically.
shaping	A process used to change the shape or contour of materials – shaping always involves the removal or addition of material.
specification	An organized, detailed description of the requirements/criteria that the solution or product must meet, e.g. safety, size, material, function, human rights, environment, etc. Note: Once a product has been manufactured, the original design specifications become the features of the product, i.e. specifications before = features after.
system	Something that is made up of interlinked parts that function together as a whole to accomplish a goal. For example a mechanical system has a combination of mechanisms that make it function as a whole; an electrical system has interrelated electrical parts that work together to make the system do what it was designed to do.
technological capability	The ability to use a combination of skills, knowledge, resources in a variety of contexts, to solve a technological problem. Capability leads to technological literacy.
technological solution	A plan that arises by using a systematic problem solving process (ideas, flowcharts, models, etc.).
Technological literacy	The ability to use, understand, manage and evaluate technology.
technological processes	Any process using technology to perform a task e.g. generating electricity, extracting iron from iron ore, galvanizing steel by electroplating, injection molding a plastic bucket, etc.
application	A computer program designed to perform a group of coordinated functions, tasks, or activities for the benefit of the user.
computer	A computer is defined as an electronic device that operates under the control of internally stored instructions that can accept input, process data (both mathematical processes and logical processes), produce output, and store the results. Basically, a computer transforms data into information.
software	Software is the instructions that tell the computer what to do. There are two major types of software: System software and Application software
hardware	The mechanical, magnetic, electronic and electrical components making up a computer system (also see Peripherals).



Term	Definition
monitor	A computer monitor is an output device which displays information in pictorial form.
hard drive	A hard disk or fixed disk, is an electromechanical data storage device that uses magnetic storage to store and retrieve digital information using
external drive	A hard drive or solid state drive (SSD) that is connected to a computer on the outside rather than on the inside
mouse	A hand held pointing device that detects two dimensional motion relative to a surface.
netiquette	Internet etiquette, courtesy and consideration for others while using shared services, social media, mailing lists, etc.
keyboard	A typewriter-style device which uses an arrangement of buttons or keys to act as mechanical levers or electronic switches
ICT	(Information Communication Technology) any communication device or application and the various services and applications associated with them – including radio, television, computer hardware and software and satellite services
generation of computers	The history of computer development in reference to different computing devices
Microsoft word	a word processor developed by Microsoft
Microsoft publisher	Is an entry level desktop publishing program that can be used to create a variety of publications
Microsoft power point	A powerful power point presentation software. This program uses slides to convey information rich in multimedia.

Resources

Lessons require resources both for the student and the teacher. It is a practical oriented subject therefore requires resources for practical projects. Using the right types of teaching materials and equipment, learning content should be planned and delivered effectively. Teachers are encouraged to use improvised teaching and learning materials. Students can be able to access them inexpensively in the surrounding community.

Classroom specific resources

All classrooms must be fully equipped with relevant resources to be used in all lessons for Making a Living and other six subjects. To teach meaningful lessons a selected list of materials and tools kept in a store room for easy access for use in projects planned to enhance the theory learnt in the classroom situation. These suggested resources are listed to guide teachers to select materials that students must handle comfortably and access cheaply.

Suggested equipment and other learning materials

- gardening tools assorted
- carpentry tools
- hand sewing machines
- basic menial tools
- hammer
- Saw
- plane
- drill and drill bits
- tape measure
- level
- screw driver
- pliers
- nails
- school canteen
- garden land
- livestock enclosures
- receipt book
- gardening tools
- fish pond
- National Department of Education (NDOE) 2006, Making a Living Teacher Resource Book Upper Primary
- National Department of Education (NDOE) 2006, Making a Living Book 1. OUTCOMES EDITION for Papua New Guinea.
- National Department of Education (NDOE) 2006, Making a Living Teacher Resource Book, OXFORD UNIVERSITY PRESS, MELBOURNE.
- Design and Technology-Resistant Materials to GCSE (Anita Tull)
- Art Design Realization
- Basic Technology NDoE Publication
- Home Economics for Papua New Guinea Book 1 (Pamela A Norman)



- Home Economics for Papua New Guinea Book 2 (Pamela A Norman)
- Home Science Today Book 2 (Mabel F Grady)
- Living Craft (Dixon McGrath)
- Design and Technology-Food Technology to GCSE (Anita Tull)
- Design and Technology-Textiles Technology to GCSE (Anita Tull)
- Easy Computer Basics, Windows 7 Edition (Michael Miller)
- Step by Step Computer Learning (Dheeraj Mehrotra)
- Commerce for Melanesians 1 1996, Trevor Tindall 2nd Edition , Australia
- Making a Living Outcomes, Grade 6 Student Book 2005 1st Edition



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- Easy Computer Basics, Windows 7 Edition (Michael Miller)
- Step by Step Computer Learning (Dheeraj Mehrotra)
- Commerce for Melanesians 1 1996, Trevor Tindall 2nd Edition , Australia
- Making a Living Outcomes, Grade 6 Student Book 2005 1st Edition
- www.scibd.com, http://en.wikipedia.org/wiki/Computer_hardware



Appendices

Pictures and various sample information and suggest materials are a listing for teachers to choose from and use in the teaching. These can also be given to students as worksheets prepared from by the teachers.

Appendix 1: Sample timetable

Teaching from a timetabled schedule for a week is very effective and compulsory. This allows for and gives ample time for the teacher to organize and prepare teaching and learning aids.

This suggested timetable is flexible and teachers must teach according to the subjects scheduled per week and the number of lessons identified accordingly. You may make adjustments when equipment and materials are unavailable or swap theory and practical lessons where necessary.

Sample Weekly Timetable for Grade 6

No	Minutes	Time	Monday	Tuesday	Wednesday	Thursday	Friday
-	10	8:00 - 8:10	Assembly	Assembly	Assembly	Assembly	Assembly
1	40	8:10 - 8:50	English	English	English	English	English
2	40	8:50 - 9:30	English	Math	English	Math	Math
3	40	9:30 - 10:10	Math	Math	Math	Science	Study
-	30	10:10 -10:40	Recess	Recess	Recess	Recess	Recess
4	40	10:40 -11:20	Science	Soc Sci	Soc Sci	Soc Sci	CCVE
5	40	11:20 - 12:00	11:20 -12:00	Science	Science	Science	
-	60	12:00 - 1:00	Lunch	Lunch	Lunch	Lunch	Lunch
6	40	1:00 - 1:40	Soc Sci	HPE	CCVE	MAL	CCVE
7	40	1:40 - 2:20	HPE	MAL	Arts	Sports	MAL
8	40	2:20 - 3:00	Arts	MAL	Arts	Sports	RI
	330	(330 instructional minutes x 5 days = 1650 minutes)					



Appendix 2: STEAM or STEM

- By exposing students to STEAM and giving them opportunities to explore STEAM-related concepts, they will develop a passion for it and, hopefully, pursue a job in a STEAM field.
- Providing real life experiences and lessons, e.g., by involving students to actually solve a scientific, technological, engineering, or mathematical, or Arts problem, would probably spark their interest in a STEAM career path. This is the theory behind STEAM education.
- By integrating STEAM content and real life learning experiences at different levels of the curriculum process (e.g., Curriculum frameworks, content standards, benchmarks, syllabi, teachers' guides and students' books, curriculum design and development, annual and term school programs and lesson plans, teaching methodologies.
- Teaching methodologies – Problem and project-based learning, partnerships with external stakeholders e.g., high education institutions, private sector, research and development institutions, and volunteer and community development organizations.
- They underpin STEM education. They are the main enablers of STEM education.
- The 21st century skills movement, which broadly calls on schools to create academic programs and learning experiences that equip students with the most essential and in-demand knowledge, skills, and dispositions they will need to be successful in higher-education programs and modern workplaces.
- The term 21st century skills refers to a broad set of knowledge, skills, work habits, and character traits that are believed—by educators, school reformers, college professors, employers, and others—to be critically important to success in today's world, particularly in collegiate programs and contemporary careers and workplaces.
- Generally speaking, 21st century skills can be applied in all academic subject areas, and in all educational, career, and civic settings throughout a student's life.
- The skills students will learn will reflect the specific demands that will be placed upon them in a complex, competitive, knowledge-based, information-age, technology-driven economy and society.



Appendix 3: The 21st Century Skills, Knowledge, Attitudes and Values

The following list provides a brief illustrative overview of the knowledge, skills, work habits, and character traits commonly associated with 21st century skills:

- Critical thinking, problem solving, reasoning, analysis, interpretation, synthesizing information;
- Research skills and practices, interrogative questioning;
- Creativity, artistry, curiosity, imagination, innovation, personal expression;
- Perseverance, self-direction, planning, self-discipline, adaptability, initiative;
- Oral and written communication, public speaking and presenting, listening;
- Leadership, teamwork, collaboration, cooperation, facility in using virtual workspaces;
- Information and communication technology (ICT) literacy, media and internet literacy, data interpretation and analysis, computer programming;
- Civic, ethical, and social-justice literacy;
- Economic and financial literacy, entrepreneurialism;
- Global awareness, multicultural literacy, humanitarianism;
- Scientific literacy and reasoning, the scientific method;
- Environmental and conservation literacy, ecosystems understanding; and
- Health and wellness literacy, including nutrition, diet, exercise and public.

Appendix 4: The Blooms Taxonomy

Remembering	How many ways can you travel from one place to another? List and draw all the ways you know. Describe one of the vehicles from your list, draw a diagram and label the parts. Collect “transport” pictures from magazines- make a poster with info.
Understanding	How do you get from school to home? Explain the method of travel and draw a map. Write a play about a form of modern transport. Explain how you felt the first time you rode a bicycle. Make your desk into a form of transport.
Applying	Explain why some vehicles are large and others small. Write a story about the uses of both. Read a story about “The Little Red Engine” and make up a play about it. Survey 10 other children to see what bikes they ride. Display on a chart or graph.
Analysing	Make a jigsaw puzzle of children using bikes safely. What problems are there with modern forms of transport and their uses- write a report. Use a Venn Diagram to compare boats to planes, or helicopters to bicycles.
Evaluating	What changes would you recommend to road rules to prevent traffic accidents? Debate whether we should be able to buy fuel at a cheaper rate. Rate transport from slow to fast etc..
Creating	Invent a vehicle. Draw or construct it after careful planning. What sort of transport will there be in twenty years’ time? Discuss, write about it and report to the class. Write a song about traveling in different forms of transport.







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