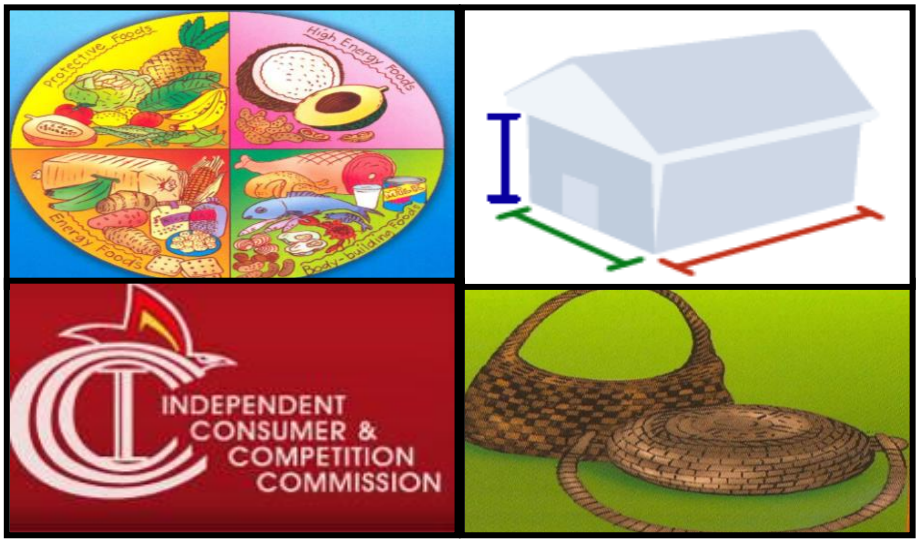
Papua New Guinea
Department of Education

GRADE 8

MAKING A LIVING

STRAND 2

BETTER LIVING



COURSE BOOK 2

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FLEXIBLE OPEN AND DISTANCE EDUCATION
PRIVATE MAIL BAG, P.O.WAIGANI, NCD
DEPARTMENT OF EDUCATION
PAPUA NEW GUINEA

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GRADE 8

MAKING A LIVING

STRAND 2

BETTER LIVING

In this strand you will learn about;

SUBSTRAND 1: HEALTHY LIVING

SUBSTRAND 2: CARE AND MANAGEMENT

SUBSTRAND 3: WISE CONSUMER

SUBSTRAND 4: MAKING THINGS

Acknowledgements

We acknowledge the contributions of all Primary Teachers who in one way or another helped to develop this course.

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We also acknowledge the professional guidance provided by Curriculum and Development Assessment Division throughout the processes of writing and, the services given by member of the Primary Section and Academic Committees.

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DIANA TEIT AKIS

PRINCIPAL

Compiled by: MAL & Business Studies Department

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SECRETARY'S MESSAGE

Achieving a better future by individual students and their families, communities or the nation as a whole, depends on the kind of curriculum and the way it is delivered.

This course is part and parcel of the new reformed curriculum. The learning outcomes are student – centred and allow them to be demonstrated, assessed or measured.

It maintains the rationale, goals, aims and principles of the national curriculum and identifies the knowledge, skills, attitudes and values that students should achieve.

This is a provision by Flexible, Open and Distance Education as an alternative pathway of formal education.

The course promotes Papua New Guinea values and beliefs which are found in our Constitution, Government policies and reports. It is developed in line with the National Education Plan (2005 -2014) and addresses an increase in the number of school leavers which has been coupled with a lack of access to secondary and higher educational institutions.

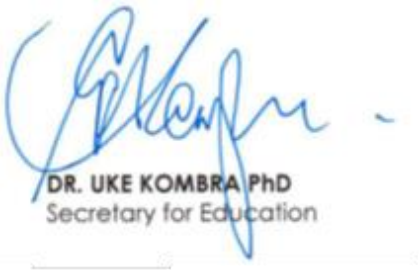
Flexible, Open and Distance Education curriculum is guided by the Department of Education's Mission which is fivefold:

- To facilitate and promote the integral development of every individual
- To develop and encourage an education system which satisfies the requirements of Papua New Guinea and its people
- To establish, preserve and improve standards of education throughout Papua New Guinea
- To make the benefits of such education available as widely as possible to all of the people
- To make the education accessible to the poor and physically, mentally and socially handicapped as well as to those who are educationally disadvantaged.

The college is enhanced to provide alternative and comparable pathways for students and adults to complete their education through a one system, many pathways and same outcomes.

It is our vision that Papua New Guineans harness all appropriate and affordable technologies to pursue this program.

I commend all those teachers, curriculum writers and instructional designers who have contributed so much in developing this course.



DR. UKE KOMBRA PhD
Secretary for Education

STRAND 2: INTRODUCTION



Welcome to Strand 2 of Grade 8, 'Making A Living'.

This strand will help you to develop the essential skills and knowledge needed to identify individual, family and community needs. That is, produce goods to meet those needs through effective management of resources including time, money and labour to achieve a safe, productive and healthy lifestyle.
Strand 2 focuses on food preparation to meet nutritional requirements from local food sources, and promotes creativity and innovations. The strand will help you develop problem solving and decision making skills. Then apply this in practical and real life situations to improve your standard of living.

The strand **'Better Living'** incorporates the following substrands;

- Healthy Living
- Care and Management
- Wise Consumer
- Making Things

Substrand 1: Healthy Living
In Substrand 1, you will learn to develop the best and safe practices for maintaining and promoting a healthy way of living. You will understand the importance of nutrition and use appropriate methods to prepare food for yourself or to earn money.

Substrand 2: Care and Management
In substrand 2, you will find areas within the school and home that need improvement and carry out appropriate actions to create a safe and pleasant place in which to work and live. You will be involved in activities to improve and maintain physical aspects of your school and home environment.

Substrand 3: Wise Consumer
In Substrand 3, you will develop skills of money management and be able to make informed decisions about goods and services available for you to access. You will develop an understanding about your rights and responsibilities as a consumer and apply effectively money management skills. You will identify organizations that provide goods and services too. You will also appreciate and develop an understanding of the importance of marketing, communicating and using technological skills in managing a business.

Substrand 4: Making Things
In substrand 4, you will identify and use a range of appropriate materials, techniques, tools and equipment to create and produce an item or a product that benefits the individual or community.

STUDY GUIDE

Step 1: Start with Substrand 1, study Lesson 1 and do the Lesson Activities as you go along. When you have completed Lesson 1, do Practice Exercise 1.

Step 2: When you have completed Lesson 1 Activities and Practice Exercise 1, turn to end of the Substrand and Strand Book to correct your answers. The answers for your Practice Exercises are at the end of Substrand 1 and the answers for your Lesson Activities are at the end of this course Book.

Step 3: If you make any mistake, go back to the Lesson or your Readings in the Supplementary Book, revise well and try to understand why you gave an incorrect answer

Step 4: When you have completed steps 1 to 3, tick the box for Lesson 1 on the contents page (page iii) like this,

Strand 1: Healthy Living
[√] Lesson 1: Nutritious and Food Groups

Step 5: Go to Lesson 2 and repeat the same process until you complete all the Lessons in Substrand 1

Step 6: After completing your Lessons and Practice Exercises in each Substrand, complete each Substrand Test in the Assignment Booklet 2.

Step 7: After you have studied the whole Strand, do also the Strand Examination in the Assignment Book 2

Step 8: Check through your Assignment Book 2, when you are satisfied, then go ahead and do Project Book 2

Icons

			
Introduction	Lesson Activity Practice Exercise	Reading	Summary

Assessment

There are two types of assessments books for this Strand. The first one is the Assignment Book which contains the substrand tests and the strand examination. The second one is the Project Book. Both Assessment Books are out of 100 marks.
Your Assignment and Project Book will be marked by your distance teacher. The marks you score will count towards your final mark and grade.

If your score is less than 50%, you must repeat that Assessment. If you continue to score less than 50% in your assessment three times, then, your enrolment will be cancelled, and you need to re –enroll if you wish to continue this Course.

Study Schedule

Here is a Study Schedule. It will guide you to complete your Strand 2: Better Living Course Book and its assessment.

WEEKS	SUBSTRAND / LESSON NUMBER	ASSESSMENT	COMMENTS
1 - 2	Substrand 1 Lessons 1- 4	Substrand 1 Test	
3 - 4	Substrand 2 Lessons 5 - 7	Substrand 2 Test	
5 - 6	Substrand 3 Lessons 8 – 10	Substrand 3 Test	
7 - 8	Substrand 4 Lessons 11 -13	Subtrand 4 Test	
9		Strand Examination and Project 2	
9	Submit your Assignment 2 and Project 2 books to your Provincial Centre for marking		

Remember:

As you complete each lesson, tick the box on the contents' page. This helps you keep a record of your study progress.

All the best and enjoy your studies with FODE – Making a Living.

SUBSTRAND 1

HEALTHY LIVING

In this sub strand, you will learn about:

- **Carrying out a survey on a small food business**
- **Food production and preparation method**
- **Preparing food for sale**
- **Food preparation methods**

SUBSTRAND 1: INTRODUCTION



Welcome to Substrand 1: Healthy Living. In this Substrand, you will learn about the aspects of a nutritious diet. You will also learn about where and how to get the food. Furthermore, you will learn about preserving, processing and cooking food.

This substrand consists of four lessons. Lesson 1 is about surveying the food business. It involves investigating and finding out about fast food sales and opportunities and the importance of reporting the findings of the survey.

Lesson 2 covers food preparation methods. It is about gathering information about the different food preparation methods available in the community.

Lesson 3 talks about preparing food for sales. It identifies important aspects of preparing food for sale. It will also teach you how to draw up a simple plan to prepare and sell food.

Lesson 4 discusses the preparation of food for special occasions. It teaches you about menus and recipes and how to identify recipes for special occasions.



Nutritious fresh vegetables
Source: Internet- 2013.

Lesson 1: Survey on a Food Business



Introduction:

Welcome to Lesson 1 of Strand 2 substrand 1. In your last lesson you learnt how you can identify markets for produces or products you may have to sell to earn an income and also evaluate the project too. In this lesson it requires you to know your community, how your people get their food supply. You also need to find out if people's food needs are sufficiently met by the different sources. Secondly you will learn to identify business opportunities in your community. Finally, you will learn to plan for a small business well before actually starting it.



Your Aims:

- Define market research survey
- Design a simple market survey questionnaire.
- Carry out a simple market survey
- Read and understand results of the survey presented in a simple survey report format.
- Identify opportunities to provide food for sale in the community so that you can earn an income.

What is a market research survey?

This will be discussed in detail later in the lesson but as part of introduction a market research survey is a method used by businesses to find the level of demand of a particular product or service they want to sell or provide.The aim is to gather information from a small **sample** of a market in order to be able to predict what the whole market (possible consumers) want. Sample market refers to a few chosen business of the same interest.

A market survey questionnaire is the instrument used to gather the needed information. It is important to carefully design the questions for the survey. Good questionnaire design makes it easy for the person to answer well. It will help the researcher to understand the information.

Common problems in constructing instruments are to ask questions that are
(a) too difficult to answer example; "Would you buy X in five years' time?", or
(b) unclear in their meaning example; "Do you think relationships will change the world?" or
(c) have double meanings example; "How hot was your spicy pizza when you ate it?", or
(d) contains two questions example; "Do you think corrupt politicians and charity workers should be done away with?"

The order in which each question is asked is also important. Keep questions simple and to the point and focused on the aim of the survey.

The questionnaire is used to interview the people in a number ways. It is done either directly, that is; person to person, face to face or by telephone and record the answers, or send the questionnaire to the person to answer and return it back by post or mail. In today's modern world, it can be done through electronic mail, easy and fast.

Food sales opportunity

Firstly an opportunity to sell food must be identified. You will agree that the population of Papua New Guinea is rapidly increasing. There are more people everywhere now than there were 10 to 15 years ago. As a direct result of this, the demand for food has greatly increased. Just observe the number of people in your area or your nearest township. You will notice that these places are crowded with people. Human beings must eat to live. The more people there are, the more the need for food. There is also a good opportunity for people to venture into food business. Other opportunities of food sales will be presented to you during important events which may attract a lot of people to one location. For example, a school talent show independence celebration, a church gathering, or a school graduation.

Look around your own community. Is there any opportunity for you to begin a food sales business?

It is not good enough to say that we are going to start a small food sales business and that it is going to be a successful one. There are many factors that need thinking before starting a food sales business.

Firstly, we need to find out if there is a real need for food to be sold and if so, what type of food people want, are they going to buy the food, can they afford it, do we need to sell a variety of food or not.

Next, we also intend to sell to; we need to assess ourselves. Do we have the ability, the skills and the resources to get the needed food available for sale? Resources include money, the ingredients and the equipment or tools needed to assist in preparing food. Where do we stand as far as all this things are concerned?



A vegetable market
Source: Internet- 2013



Highlands mumu

Try finding answers to these and other related questions as part of the planning process for a small food business

Planning

Even before deciding to engage in a small income earning activity, there must be a good idea in place before putting into a plan. The plan is very important because it gives you the chance to think about all the benefits and the problems. In fact, research has shown that lack of planning in the first place is the cause of many small businesses' failure. Many small businesses, including street sellers in Papua New Guinea do not plan properly although they aim to make a profit.

Planning involves saying yes or no to some factors of the idea, (business). Decisions must be based on some facts or data (information) because the decisions made now will affect the future of the activity. The process of collecting that information is part of

the planning stage. Bigger businesses make decisions based on reliable (well researched) information.

Sample Market Survey

Here are some questions that you may ask regarding the business activity that you want to engage in. The answers to the following questions of the planning process.

- What do the people need or want?
- What do I want to sell?
- Why do I want to sell this and not the other?
- Who do I want to sell to?
- Can they afford to buy what I will sell to them?
- What do I need?
- Can I find what I need easily?
- Do I have the skills, knowledge and the ability needed to do this?
- How about finance? Where does it come from? Can I afford?
- Do I need help? If so, for which aspects of the activity do I need help in?

Market Research and Survey

There are three things that we need to think about when planning for a Food Sales Activity. No matter how small our business idea may be, we need information to make decisions regarding our food sales business in our local community. Although some decisions can be made from observation or personal experiences, we need to carry out a little research or survey to gather information. The information gathered from the little market survey will help you to make decisions about your food sales business.

Research or Surveys are an essential tool when participating in or planning an event, or a community project. They help you collect meaningful information before, during and after the event. When used correctly, surveys can help assure your event is a success.

A market research or survey is a method used by businesses to find out the level of need of a particular product. It is done by asking questions to a group of selected people questions designed to collect specific information regarding the product or service that is to be introduced into the market. The information is used to make decisions about the sale of the product or service.

Market research or survey is not something only experts can do for large businesses. It is a useful way to find out the level of demand for a product.

Have a look at the sample market research or survey questionnaire used by a class for their project. You can use it to design your own to suit your need. You can even add or subtract certain parts according to your requirements.



Activity 1.1: Complete the activity given below.

In a village situation, how can one conduct a market survey? (See the Survey Questionnaire below).

_____
_____

SURVEY QUESTIONNAIRE

Survey Questionnaire

A. Aim:
We are planning to open a small kai shop as a class project. Before we start our project, we would like you to help us answer the following questions.

B. Personal details: Employed /Self-employed (please circle}

C. Questions: For questions 1-3 circle the appropriate or best suitable to you;
1. Would you be interested in buying cooked food from our class? Yes or no
2. What food would you like to buy? Breakfast/ Lunch
3. How much are you prepared to spend? K□50 K□00 K1□00
4. What food would you like to eat? (Tick)
_____Rice and Lamb stew with vegetables
_____ Chicken, vegetables and rice
_____ Fresh fish vegetables and rice
_____ Tinned fish stew with vegetables and Rice
_____ Mumu – Vegetables only
_____ Soup - Vegetables only
_____ others, (please circle) boiled corn, boiled peanuts, boiled egg, boiled root vegetables , boiled bananas, sago cakes, cassava cake, pariva,

Any other suggestions? Please indicate any suggestion of food you prefer.
_____
_____
_____

5. How often would you want to buy the above food? Please tic appropriate.
_____ Daily _____ Twice a week _____ Once a Week

Other_____
_____

Thank you for your time.

Let us go through the parts of the questionnaire. We will start with the Part A.

Part 'A'

It spells out the aim of the survey in a very simple statement. It is important to spell out the aim of the activity so that the interviewee will know why they are answering the questions. It will also get them to think along the aim as they are responding to the questions.

Part 'B'

This section requires personal details of the respondent or interviewee. A respondent is the person answering the questions.

Part 'C'

This is the main section that contains the actual questions. Notice that the questions are simple and that they are clear and each require a single answer. Notice also that

the questions are designed specifically with the purpose of the survey in mind. Example; Would you be interested in buying cooked food from our class?

Results

Below is a simple format to report the results. It is an important part of the market research survey to report the results from the information collected. The conclusions and the recommendations of the report guides the final decision making. Conclusions are based on the data information collected while the recommendations are based on the conclusions drawn from the summarised data.

SURVEY RESULTS

Survey Results

A. Aim:
We are planning to open small Kai Shop as a class project. Before we start our project, help us if you could answer the following questions.

B. Personal details: *Employed* ***30*** *Self- employed* ***15,*** *others* **5 total : 50**

C. Questions*:*
1. Yes; **40** or No; **10**
2. Breakfast: 10 Lunch: 40
3. K2.50= **10,** K5.00 = **35,** K7.50 = **5** , K10.00 + = **0, Total : 50**
4.
   - **10** Rice and Lamb stew with vegetables
   - **15** Chicken, vegetables and rice
   - **15** Fresh fish vegetables and rice
   - **5** Tinned fish stew with vegetables and Rice
   - **4** Mumu – Vegetables only
   - Soup - Vegetables only
   - **Total : 39**

Others, boiled corn___10_, boiled peanuts__5___, boiled egg_30__, boiled root vegetables 0, boiled bananas 0__, sago cakes___2__, cassava cake___3_, pariva__0___. **Total: 30**
Any other suggestions? Most Requested for soft- drinks and water
5. Daily ___35__ Twice a week __15___ Once a Week _0__ **Total : 50** Others : Nil

D. Conclusions: (only some)
1. 60% of the people surveyed are formally employed.
2. 80% of the people wanted cooked food
3. 70% of the people wanted to buy food @ K5.00
4. 60% of the people collectively wanted rice and vegetables with meat stew, (lamp or chicken)
5. 20% of the people want to buy boiled eggs for K1.00

E. Recommendations: (a few)
According to the conclusions;
1. the food sale business be set up
2. Lunch only be served for prices ranging from K2.50 – K 5.00
3. Rice and meat stew or vegetables and meat stew be served
4. That boiled eggs be sold for K1.00 as well.

Notice there are 5 parts to the report compared to only 3 in the questionnaire above. Parts ‘A – C’ gives a summarised data from the information collected during the interview. The raw data collected is not shown here. It is too much to be shown here. What we see here is a summarised data of the entire information collected from the interview. Parts ‘D’ and ‘E’ are conclusion and recommendation respectively.

Activity 1.2: Complete the activities given below.

Study the survey results format to answer these questions.

1. Name the type of food that is least wanted.

_____
_____

2. Name the most sorted food.

_____
_____

3. What percentage of the population interviewed wanted cooked food?

_____
_____

4. What is the difference between conclusion and recommendation in a market survey?

_____
_____
_____

Summary:



You have come to the end of Lesson 1. In this lesson you learnt that;

- Planning is essential in any business activity or project.
- A market survey is the instrument needed to do the activity or project anticipated. It is used to find out the level of demand for a product or service for sale. Decisions regarding the future of a business are based on the results of the research or survey.
- A survey report consists of five (5) parts: aims, personal details, survey tool (questions), conclusion, and recommendation. The actual Survey Questionnaire is only made up of three (3) sections; Aim, Personal Details, and the survey tools (Questionnaire).
- The survey tool can be changed slightly depending on the type of activity or project you consider.

NOW DO PRACTICE EXERCISE 1 0N THE NEXT PAGE



Practice Exercise 1

1. What is the aim of the Market Research Survey shown on page 14?

_____
_____
_____
_____

2. What is the method used to gather information?

_____
_____
_____
_____

3. Study the survey questionnaire and its result reported on page 15 to answer the following questions.

(a) What percentage of the people surveyed are self-employed?

_____
_____

(b) What fraction of the population surveyed wanted breakfast?

_____
_____

(c) Can breakfast be served? Why?

_____
_____

(d) How often should food be served? Why?

_____

4. List two (2) benefits of planning before actually starting a small business?

(a) _____
(b) _____

CHECK YOUR WORK. ANSWERS AT THE END OF SUBSTRAND 2

Supplementary Information 1: Market Research

Market research is a valuable tool used to find out the level of demand for a product in a particular area, and the type of products that people want to buy. They should not think that market research is something only experts can do, and that it will take a lot of time and cost a lot of money. Small businesses also need to know their level of demand and they can carry out a simple survey to get their answers.

A market survey should be an important part of the planning stage for a small business. Below is a description of a market survey carried out by a small part time furniture- making business.

Find out about the following as part of the research. Honest answers to these questions should be able to provide necessary information for you to make good decisions about your business.

- Are there any major developments in the area? If a major new industry is going to be setup, this should benefit businesses in the area.
- Are there seasonal changes in demand for the product?
- What is the level of income for most people in the area?
- Who are your main customers?
- Where would you locate your business?
- Who are your competitors?
- How would you finance the start of the business?
- Why do you believe it would be profitable and successful?

Competition

A firm needs to know the amount of competition it will face. Competition in business is when a number of businesses are offering the same product or service for sale to the same group of customers in one location. They are said to be in competition for the same customers. It is about businesses trying their best to attract the customers to buy from them instead of the other businesses who are their competitors. A business should have a plan to encourage customers to buy from it instead of the other sellers. Small business people often consider competition in terms of only price. A lower price for a product or service may not always be an advantage if the quality of that product is lower.

How can a business make or cause customers to buy from it instead of the other sellers?

- Better customer service
- Friendlier customer service
- Quick response to orders
- Customer advice
- A buying lovely atmosphere
- A more suitable location for customers

In order to find some answers to such questions, a survey can be carried out using a questionnaire like the one on the next page. You can give a copy of it to those who can write. For those who cannot, you can interview them and write the answers down yourself. Later compile a survey report using a simple format like the one given.

Study the example of the following survey questionnaire used by a class for their class project. You can use it to design your own to suit your need. You can even add and subtract certain parts according to your requirements.

QUESTIONNAIRE

Survey Questionnaire

A. Aim: To find out what items of furniture the community in the surrounding areas is likely to buy.

B. Personal details:

1**.** No. of people interviewed. _____

2. How many: Males _____Female: _____

3. How many: Employed _____Self-employed_____ Informal Sector, Example; Selling market goods: _____

C. Questions:

1. Would you be interested in buying furniture for your house? (Please circle)
Yes or No

2. What furniture items do you have in the house? (Tick)
Stools___ chairs___ tables ____beds____ Cassette racks ___ others _____

3.What particular furniture would you like to buy? (Tick)
Stools___ chairs___ tables ____beds____ Cassette racks ___.

4.How much are you prepared to spend for an item at the given prices in brackets? (please circle)

- Stools: (K15.) - K15, K30, K 45, K60. and more
- Chairs: (K20.) - K20, K40, K60, K80. and more
- Tables: (K30.) - K30, K60, K90, K120. and more
- Beds: (K50.) – K50, K100, K150, K200. and more
- Cassette racks: (K10.) - K20, K30, K40. and more

5. Any other suggestions? _____
_____

6. How often would you want to buy the above good?
_____ Quarterly _____ Every six months _____ Every Three Years_____
Others _____

Thank you for your time

FURNITURE MARKET SURVEY RESULTS

A. Aim: To find out what items of furniture the community in the surrounding areas was likely to buy.

B. Method: The above questionnaire was answered by people with houses in that area.

C. Personal Details:

1. Number of people surveyed: Total : 90

2. Men: 54, Woman: 36,

3. Employed 30, Self-employed 52, Informal sector: 8

D. Questions: 1. Want to buy furniture: Yes; 90 or No; 0

Questions	Stools	Chairs	Tables	Beds	Cassette Racks
Q2.furniture items already have in the house	52 people	72 people	86 people	34 people	4 people
Q3.furniture you would like to have	42 people	66 people	52 people	22 people	74 people
Q4. How much are you prepared to spend for an item at the given prices	**(K)**15-41 15 30 45 60 and more	**(K)** 20–72 20 40 60 80 and more	**(K)** 30-56 30 60 90 120 and more	**(K)** 50 –80 50 100 150 200 and more	**(K)**10 – 55 10 20 30 40 and more

5. Any other furniture you need? (this section will depend on the answers of those who were interviewed) For example, someone would say, I need: TV stand, cardboards, Shelves for books,

D. Conclusions:
To continue with the production

The main demand is for chairs and cassette racks

E. Recommendations:

To make cassette Racks and sell them. Save the money to such a time and then, move onto the next demand, that is the chairs

END OF SUPPLEMENTARY READING 1

Lesson 2: Food Production and Preparation Methods



Introduction:

Welcome to Lesson 2 of Substrand 1. In the last lesson you learned how to design and carry out a simple food market survey using a set given guidelines. You also learnt how reported your findings in a simple report format. In this lesson, you will learn about ways to produce and prepare food. You will also learn how to prepare food to earn money.



Your Aims:

- gather information about different food production and preparation methods available to people in your community
- identify suitable methods to prepare food for either own consumption or to generate income

Ways to produce food

We have learned that food is human's basic need for survival. People must eat food in order to live. It was also stressed that good food or nutritious food is important for healthy people to build a strong and healthy society. Food production and preparation are very important aspects of food and survival.

Although some aspects of food production and preparation methods are common, people in the past used limited means of food production and preparation. Different groups of people have different, styles of preparing food. The Tolai mumu and the Highlands mumu are prepared differently.

People produced more food than they needed, there was always surplus or plenty leftovers. They shared their surplus among themselves or engaged in trade (barter). They were a generous generation of people than the generation of people we have now because they shared their surpluses with their neighbours and relatives.



Activity 2.1: Complete the activity given below.

How are foods produced in your area? List some food production methods available and used in your local community.

_____

_____

Production of food by self

Today, we get or obtain food by growing or supplying it ourselves or by buying it from others. There are a number of good things about providing food for ourselves.

Up to almost 80% of the nation's population live in the rural part of Papua New Guinea. They produce their own food. They grow them, gather or collect them, farm them, fish them or even hunt them. However, some basic items are bought from the shops or markets. Selling of food on the roadsides and local markets has become

popular in the rural areas. This gives the opportunity for people to sell their surplus and buy what they do not grow or provide.

Advantages of producing food

Producing food ourselves has a lot of benefits. We reduce the need to buy food from others. We can use the money for other purposes. Other benefits include;

- more convenient
- seasonal varieties are made available
- helps to generate an income by selling the surplus
- creates a feeling of self esteem
- sustainability and healthier lifestyles
- importantly this promotes self-reliance.

However, there are some problems with these. They include poor quality produce, loss through bad weather, pests or theft. Always get high quality plant-cuttings or suitable seeds and make security arrangements, (fences, and roofs and lightings guards) to avoid loss.

Practical ways to produce food include;

- gardening
- raising livestock
- fishing
- hunting
- gathering



Activity 2.2: Complete the activities given below.

1. What do you think about hunting and gathering as practical ways to produce food today?

_____
_____
_____

2. Write two (2) good things about producing food yourself in one or more of the above ways? List them in your book?

_____
_____

Gathering does not only refer to food gathering. Listed below are some things that can be gathered;

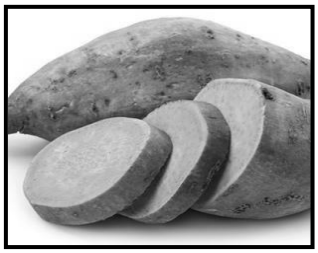
- wild animals,(wild pigs and cassowaries, wallabies, cuscus, birds, snakes, crocodiles, crabs,).
- grubs, nuts, ferns and bush greens to use in recipes
- ideas for recipe,
- plant cuttings or seeds for planting
- utensils and equipment for food preparation
- firewood for cooking.



Fresh fish
Source: Internet- 2013.

Ways to Preserve Food

Did you know we can process food using both local and present food processing methods for both own consumption and to make money.



Kaukau vegetable
Source: Internet - 2013.

How to Preserve Kaukau

Ingredients:
10 pieces of kaukau

Method
1. Peel kaukau and cut into very thin slices
2. Place on a clean cloth and dry in the sun
3. When totally dry, pound the slices into flour
4. Store in a clean dry container until ready to use.



Activity 2.3: Complete the activities given below.

1. List three (3) advantages of preserving food.

_____
_____

2. List three (3) examples of other food that can be preserved by the same or similar method.

_____
_____

There are many ways to prepare food. All of the ways can be divided into two major groups.

1. Dry cooking methods or dry food preparation methods – this involves cooking of food without water or other fluids or cream
2. Wet cooking/food preparation methods – is really the opposite of dry cooking where fluid or water is used.

Cooking in Papua New Guinea

It is a good idea to learn about cooking and food preparation methods of other people and places. It is also important to find out about traditional cooking methods which are an important part of our culture.

People in different parts of PNG use different methods of cooking. Often food is cooked on open fires or hot coals. Most foods are cooked in coconut cream or in boiling water. The most common methods of cooking are listed below.

Traditional ways of cooking

1. Mumu: Mumuing is a popular method of cooking in Papua New Guinea. There are many traditional ways of doing a mumu. Special mumu stones are heated until they are red hot and then placed in a shallow hole in the ground. Food such as root crops, vegetables, meat, and chicken are cleaned and washed, then wrapped in banana leaves to make a big parcel. (Coconut cream can be added to the food at this stage.)This parcel is then placed on the red hot stones covered with more banana leaves so that the steam does not escape from the food as it cooks.

The food cooks in several hours, depending on the size of the parcel. The banana leaves and the coconut cream give a special flavour to the food.

2. Aigir: Aigir is another interesting way to cook food. This method of cooking is mainly used by people living on the coast. The food is cooked in coconut cream in a flat bottomed pot. The coconut cream is obtained by scraping mature coconuts, adding water and squeezing out the cream. A person cooking for a family of four would need to use five (5) coconuts .to get enough cream. Again the stones are heated until they are red hot then dipped in cold water for a few seconds to remove any ashes. They are then placed into the pot with the coconut cream and the pot is covered. The food is cooked in a very short time.

Can you think of other popular ways of cooking in Papua New Guinea? Make a list of them and briefly discuss how it is done.

Other cooking methods

1. Boiling: The food is cooked in the boiling water. You should never throw away the water that has been used to boil vegetable as it contains vitamins and minerals that have been dissolved from the food. You can use this water to make soup or drink it.

2. Stewing: The food is cooked in a small amount of water or other liquid with the juice of the food itself, which is nutritious. The liquid becomes a tasty source for the food.

3. Grilling:
There are four methods of grilling.

- Grilling in the fire, where the food is put directly on to the hot coals. It is best to grill food on or over the fire to prevent the food from burning.
- Grilling on a stick over the fire. This is the best way to grill small pieces of food.
- Grilling on a wire rack over hot coals.
- Using the grill in an electric or gas oven.

4. Frying: The food is cooked in fat or oil in a pan on top of a fire. The fat should be heated in the pan before the food is added, but care should be taken as the food will burn if the fat gets too hot.

5. Baking: The food is cooked in an oven using dry heat. Food can be baked in tins and saucepans over the fire, ground ovens, drum ovens, or electric and ground ovens

6. Roasting: The food is cooked in an oven with fat or oil or food over hot coals.
As the cost of living in Papua New Guinea is very high, many families struggle to find cheaper ways of living. This includes finding a cheaper way of cooking.

7. Cooking stoves

Some common stoves used in Papua New Guinea include;

- Charcoal and open fire. Even in an urban family home you will find fireplaces outside. It is believed in Papua New Guinea that food cooked on fire is tastier. It is cheaper to obtain fire wood and try out traditional cooking methods especially in the urban family settings. It will be much fun, adventurous and even educational.

- Sawdust stoves are a cheap method of cooking food. They need less firewood as they use saw dust, which can be obtained from sawmills free of charge or at very low cost. Many urban families use this type of stoves.
- Gas and electric stoves – The easiest way to cook food is by using a gas or an electric stove. However gas and electricity are expensive and therefore many families cannot afford to use these stoves.
- Kerosene Primus Stoves. These stoves are very common. They are used by many families as a cheaper alternative to gas and electricity.

Important cooking information

The following are common but important information in food preparation and cooking.

- Make sure you always wash vegetables before cooking them but do not soak them in water as this will remove the nutrients out of the vegetables.
- Cook vegetables for as short a time as possible. If food is cooked for too long, the vitamins and minerals will be lost.
- Always cut eggplants in water to avoid discoloring.
- Keep a round stone in the kitchen to crush garlic, ginger and so on.
- To stop coconut cream from curding while cooking, stir it every now and then
- Yams are sticky when you peel them. It is best to wash and dry the yams before peeling, then slice and cook them
- You can add flavor to your meals by adding onions, ginger and garlic before adding any other ingredients

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Summary:



You have come to the end of Lesson 2. In this lesson you learnt that;

- The different food production includes; gardening, raising livestock, fishing, hunting, and gardening.
- One can invent or try out different ways to prepare food such as; mumu, aigir, stewing, grilling, frying, baking, roasting, steaming
- All food can be processed for either own consumption or to earn income.

NOW DO PRACTICE EXERCISE 2 0N THE NEXT PAGE



Practice Exercise 2

1. In your own words describe the advantages of producing your own food.

_____
_____
_____

2. (a) List three (3) other foods that can be processed. List and describe them.

_____
_____
_____

(b) Write a recipe to process raw food to make it into a useful product. Follow the example given in the lesson.

_____
_____
_____
_____
_____
_____
_____
_____

3. Write wet or dry besides each of the following list of food preparation methods.

- Boiling _____
- Baking _____
- Grilling _____
- Smoking _____
- Mumu _____
- Barbecuing _____
- Steaming _____
- Casserole (stewing) _____

4. List two (2) advantages and disadvantages of wet cooking.
(a) Advantages:

_____
_____
_____

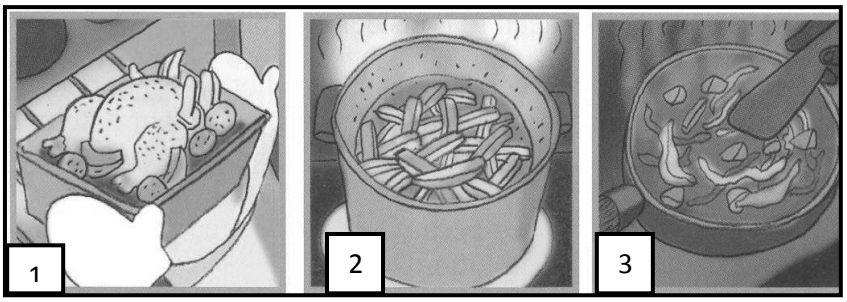
(b) Disadvantages:

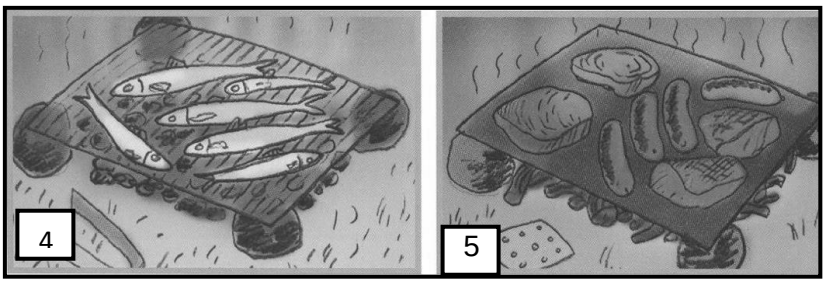
_____
_____
_____

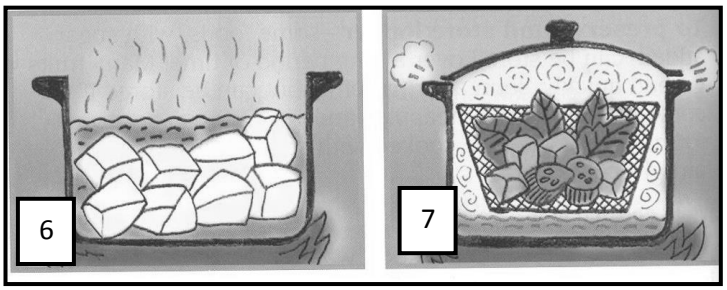
5. Match the list of methods of preparing food with the appropriate pictures below Write the numbers in the spaces provided.

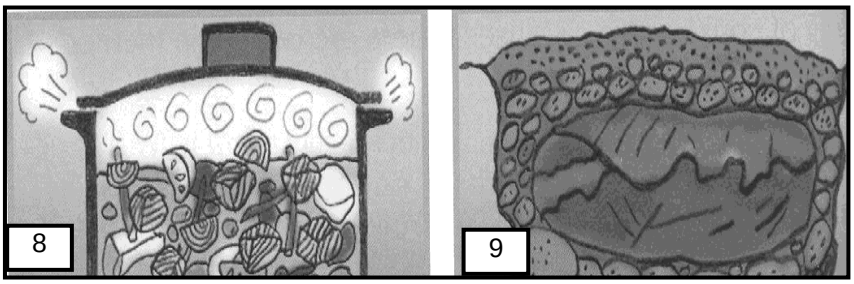
(a) _____	Boiling,	(f) _____	Mumuing
(b) _____	Shallow frying	(g) _____	Barbecuing
(c) _____	Roasting	(h) _____	Steaming
(d) _____	Grilling	(i) _____	Stewing
(e) _____	Smoking		

DIFFERENT METHODS OF COOKING









CHECK YOUR WORK. ANSWERS AT THE END OF STRAND 2

Supplementary Information 2: Food Production and Preparation Methods

Why is it important to select food and prepare them well?
Your meals will taste better if you cook with quality ingredients. It is important to select vegetables and other foods carefully and store them properly so that they stay fresh. Some foods need special preparation before they can be used in cooking.

Selecting and Storing Vegetables

Why is it important to check vegetables carefully before buying them?

If buying vegetables at the market, always check them carefully before buying. Many vegetables are sold in bundles so it is important to check all parts of the vegetables. The leaves may look very fresh but the middle part of the vegetables may be full of insects or starting to rot. Store vegetables in a cool dry, well ventilated place. Ventilate refers to fresh air in a room. Strong sunlight and heat can destroy many vitamins and minerals in food so we must keep vegetables in the shade.



Fresh vegetables

Preparing vegetables for cooking

Chopping and slicing vegetables is a skill that everyone gets with practice. If vegetables are not sliced, ensure, the vegetable pieces are all of a similar size so that they will cook evenly. Most leaf vegetables in Papua New Guinea are cooked whole without needing being chopped or cut.

If several different types of vegetables are used for a recipe, those that need a longer cooking time should be put to your cooking first.



Vegetables for cooking
Source: Internet-2013.

Cooking in Papua New Guinea

It is a good idea to learn about cooking and food preparation methods of other people. It is also important to find out about traditional cooking methods which are important part of our culture. People in different parts of PNG use different methods of cooking. Often food is cooked on open fires or hot coals. Most foods are cooked in coconut cream (for the coastal region) or in boiling water. The most common methods of cooking are listed below

Traditional Ways of Cooking

- **Mumu**

Mumu is another popular w of cooking in all parts of Papua New Guinea. There are different styles depending on what resources are available in the local area. Choice stones are lined on top of neatly arranged firewood and heated until they are red hot. Vegetables such as, kaukau, banana, tapioca, greens, meat, fish and chicken are gutted, washed and wrapped in banana leaves as a big parcel. (If in the coastal region coconut cream is added at this stage.)The parcel is neatly placed on the red

hot stones and covered with lots of leaves to stop the steam from escaping as the food cooks. The mumu cooks for several hours, depending on the size of the parcel. If it were in the highlands region the mumu would be covered with leaves carefully then covered with earth or soil .The banana leaves and the coconut cream give a special flavour and aroma to the food.

Aigir

Aigir is another traditional method of cooking and it originates from the Pacific Islands. It means cooking food with hot stones. The food is cooked in coconut cream in a flat bottomed pot or leaves neatly lined. The cream is obtained by scraping coconuts, adding water and squeezing out the cream. A total of five (5) matured coconuts are enough to get the cream needed for the aigir. The stones are heated until they are hot then dipped in cold water for a few seconds to remove any ashes. They are then placed into the pot, prepared dish or leaves with the coconut cream plus other food. Like the mumu, aigir in a pot is covered with its lid, dish is covered with banana leaves as well as the one done in leaves can be covered by extra leaves too. The food is cooked in a very short time

Can you think of other popular ways of cooking in Papua New Guinea? Make a list of them and briefly discuss how it is done.

Other Cooking Methods

Boiling

The food is boiled in hot water. Keep the water as stock for other uses like soups. It contains vitamins and minerals that have dissolved from the boiled food. It is very useful and can be stored for several days.

Stewing

The food is cooked in a small amount of water, other liquid or with the juice of the food itself, which is nutritious. The liquid becomes a tasty source for the food from which sauce and other dishes can be done. It cooks very quickly because the food is cut into smaller pieces.

Grilling

There are four methods of grilling.

- Grilling in the fire, where the food is put directly on the hot coals. It is best to grill food on or over the fire to prevent it from burning.
- Grilling on bamboo sticks over the fire. This is the best way to grill small pieces of food.
- Grilling on a wire rack over hot coals.
- Using the grill in an electric or gas oven

Frying

The food is fried in fat or oil in a pot or frying pan on top of a fire. Fat is heated in the pan before the food is added, but care should be taken as the food will burn if the fat becomes too hot. Frying can be light or deep.

Baking

Here food is cooked in an oven using dry heat. Food can be baked in baking tins and trays over the fire, ground, drum, and electric ovens.

Roasting

Food is cooked in an oven with fat or oil. Spiced and stuffed chicken with fillings can be roasted
Living expenses are very high and families are struggling to find cheaper way of living. This includes cheaper ways of cooking for them.

Cooking Stoves

The common stoves used in Papua New Guinean homes are;

- sawdust stoves are a cheap method of cooking food
  They use less firewood as they use saw dust, obtained from sawmills free of charge
- gas and electric stoves
  This is the easiest and convenient method to cook food. However, gas and electricity are expensive and many families cannot afford to use them.
- kerosene primus stoves
  These are very common in most Papua New Guinean homes. They are a cheaper substitute to gas and electricity.

END OF SUPPLEMENTARY READING 2

Supplementary Information 3: Mumu

Cooking pig can be done in many ways. The most common modern methods of cooking a whole pig is put on a rotisserie over a fire pit. This form of fire pit cooking is efficient and relatively easy, but requires special equipment, namely the heavy-duty pig rotisserie which can support a heavy roast. However, whole animals, particularly whole pigs, have been roasted by more primitive means for centuries. More "primitive" should not be seen "worse" however many Polynesian cultures have been roasting whole pig in a barbecue pit underground for centuries and the results have being fantastic.

In Papua New Guinea the name for the barbecue pit and the food resulting from this style of fire pit cooking is ***Mumu***. In Hawaii, this type of underground oven is called a ***Kalua***, often part of a Luau celebration. Traditionally, a whole pig is slowly roasted underground in preparation for a huge celebration. Other animals (lamb and deer) can be cooked in a similar manner.

What exactly is a mumu?

The mumu traditionally consists of a pit dug into the earth in which many large stones are laid. A large bonfire is then built over the stones for a long period of time to heat them thoroughly. Some of the hot stones are then removed. The stones are covered with leaves, such as banana leaves to help steam the food. Vegetables such as yams and potatoes are piled on top and then covered carefully with more banana leaves. After that barks of bananas that have been flattened are placed over the wrapped food then soil is placed over this covering. The mumu should be left for two hours to cook. A whole pig is wrapped in leaves and set in the pit and covered with more hot stones. The hole is covered with dirt to insulate the underground oven. Cooking pig in this manner can take a long time, up to 12 or more hours depending on the size of the cooking pig. At the end of the cooking period, the food is dug up and eaten.

Some people do not trust that enough heat will stay in their mumu barbecue pit for the full time it takes to cook, so rather than cover with dirt, they cover with more rocks and keep a fire going on top of the rocks during the cooking period. However, this does not appear to be the traditional way.

END OF SUPPLEMENTARY READING 3

Lesson 3: Preparing Food for Sale



Introduction:

Welcome to Lesson 3 of Substrand 1. In the last lesson, you about the different food production and preparation methods available to people in your community as well as other parts of Papua New Guinea. In this lesson you will learn how prepare food for sale.



Your Aims:

- Discuss aspects of preparing food
- Develop a simple plan to prepare and sell.
- Identify important aspects of preparing food for sale.

Planning and preparing food for sale

Food preparation for sale and for special occasion must be carefully planned for and then prepared so that it satisfies the customers/clients. Poor planning will only lead to poor preparation and eventually lead to poor sales, which further leads to a loss. Like all businesses, a food business must make a profit. Customers will buy clean, healthy and fresh food. Plan what you want to do before you actually do them. These will save you time, effort and of course save you from unnecessary costs.

Handling and packaging food

Why should special care be taken when preparing food for sale? It is unlawful to sell food that is unsafe to eat. People who sell food must ensure that food is safe to eat. Poor food hygiene can lead to food poisoning. Customers will get sick, complain and may even ask for compensation. The seller then gets a bad name.



Activity 3.1: Complete the activities given below.

1. List three (3) positive practices when handling food for sale on special events.

(a)_____

(b)_____

(c)_____

Among other things, I am sure you mentioned clean hands, utensils and equipment.

2. Packaging is just as important as proper handling. In fact, packaging helps proper handling. Write down three (3) advantages of packaging

(a)_____

(b)_____

(c)_____

Packaging materials include leaves, paper, and cardboard, plastic, foil wrap, glad wrap, brown papers, bottles, glasses and tins. Packaging can be attractive and can also provide information. Packaging protects food from damaging, dirt, bacteria and keeps food in tact when handling food products during transportation and storage.



Activity 3.2: Complete the activity given below.

List down a variety of hot and cold food you could sell. List them down.

_____
_____

Number of people to be catered for

When planning to prepare food for sale, consider the number of people to be catered for. Although hundreds of people may be expected at a special event, not everyone will have the money to spend. But if you prepare too little food for sale, you will miss out on the income you will have gained. If you prepare too much food for sale, you will have unsold food left over and you may have operated at a loss. You will need to are likely to be.

Costs

Costing and pricing will begin from when you start spending money to get the ingredients plus other materials until the sale of the product or good in this project. It will be wise that when spending money make sure to collect all the receipts or record it as this will all have to be added to the sale item.

Product costing is the process of identifying all the various expenses that have incurred or increased in the production and sale of a **product**, from material purchases to all other expenses associated with making the product and finally selling it. Importantly you must;

(a) know how much it costs to produce each product?
(b) know your profit margin for each product?

Equipment such as knives, spoons, fork, thongs, pots, bowls, stoves and refrigerators all cost money. With use over a time they drop in value and eventually it will need to be replaced. This is one reason why the selling price of the prepared food must be higher than the cost of the ingredients. To achieve a good profit we need to look for ways to lower production costs without lowering the quality of the products we are selling.

Maybe use;

- firewood to cook
- Borrow needed equipment to use
- Handle equipment with care
- Use leaves instead of foil
- Improvise materials where possible
- Compare prices of what you are buying to sell and get value for money

All these are factors to be considered when deciding on a selling price. For example; to have a steak sandwich ready for sale, the seller has bought;

- ingredients - the bread, butter, steak (meat), salt, sauce, oil
- equipment - barbecue plate, matches, firewood, foil, tray, thongs, plate,
- others - refrigerated the meat, paid for transport, water bills, and of course the time used to produce

What are the benefits of correct costing and pricing?

- Selling profitable products
- Better managing of resources
- Increasing profits
- Understanding each product's contribution to the business.

Resources

You are well aware that many resources are required when preparing food for sale

- human labour
- materials
- utensils
- equipment and
- time and management

For example: Know how much it costs to produce each product? In this case find out how much it cost to produce a packet of food. To do this, take the total cost of all the food divide by the number of packages you want to sell. Then add the desired profit on to the total cost. Say it cost you K120.00 to buy all the food. Your other costs including labour total K60.00. You want to sell 30 packs. It cost you K 6.00 to produce a pack of food. Now the total cost of one packet is K6.00

What about your profit? How much profit do you want for doing all this? You must decide on a reasonable profit margin for each product? Say you want a profit margin of 40% on your total costs.



Activity 3.3: Complete the activities given below.

1. How much will you sell one pack for?

_____

2. What is the total revenue?

_____

3. What is the total cost?

_____

4. What is the total profit?

_____

Marketing

What is marketing?
It is easy to think of marketing as advertising of goods and services. However, marketing is more and broader than just advertising. Marketing involves all of the ways in which you communicate with customers. In fact, you are marketing in all that you are doing in business. The question is: Are you communicating the right message?

Why is marketing important?

All businesses need customers, and marketing involves communicating with customers. It is the process by which a business attracts customers and makes sales. Marketing involves many aspects of your business and is important to keep current customers and gaining new ones. It is important to understand that everything you do in your business relates to marketing.

How do you market your small business to the **right** customer? Knowing the customer is the foundation to all successful marketing efforts. Consider the customers you are trying to reach.
It is important to consider the following four aspects of marketing to help you in selling.

- **Products –** In this case your product is the food you want to sell. To be successful you need products that people want to buy at prices they can afford. Good quality, nutritious, tasty, attractiveness and cleanliness will contribute to making the product attractive.

- **Prices –** to be competitive choose a similar price range with other providers/ sellers of the same or similar product/service.

- **Place (location) –** to be observant and identify good selling locations. You may have good products/services and competitive prices but if you choose the wrong selling location, you will not get sales.

- **Promotion –** promotion of products for sale can be in both oral and written form. Oral promotions can be made by radio, loud hailers/speakers, giving information in advance or calling out to people as they walk by. Advertising through written forms include just price and content on food packages, list of items on sale pinned outside the stall or at key locations where many people can see.

Summary:



You have come to the end of Lesson 3. In this lesson you learnt that;

- Food preparation for sale and for special occasion must be carefully planned for and then prepared so that it satisfies the customers/clients.
- Poor planning will only lead to poor preparation and eventually lead to poor sales, which further leads to a loss.
- Customers will buy quality, nutritious, clean, healthy and fresh food
- The main focus for business is to earn profit.
- In order for a business to increase its profit and expand it must improve its marketing and sales skills to keep its regular as well as potential customers.
- It is important to price correctly items for sale to gain profit.

NOW DO PRACTICE EXERCISE 3 0N THE NEXT PAGE



Practice Exercise 3

1. (a) How can packaging help improved handling of food?

_____
_____
_____

(b) List five (5) different ways of packaging food for sale

_____
_____
_____

(c) Imagine you are the customer of other people. Describe your expectations from a food seller.

_____
_____

2. Make a list of rules for hygienic handling of food.

_____
_____

3. What are some things that you can you do to reduce cost of production without lowering the quality of it?

_____
_____
_____
_____

4. With lots of people around at a special occasion, think of different hot and cold food you could sell. Make a list. Think about where and how you are going to get them in the first place in order to sell them. List the source of food and the cost (if you paid any money to get it) beside the food name. Then calculate how much you are going to sell each food item for. What will be your profit?

_____
_____
_____

NOW CHECK THE ANSWERS TO YOUR EXERCISE AT THE END OF SUBSTRAND 2

Supplementary Information 4: Food as a Business

Catering as a business

Now that you have the information to start a catering business, you will need to work on the following tasks.

The name of the business

The bigger and formal businesses are required to register a name for their business. They always find a business name that shows what they are doing and that it catches the attention of customers. The law says no two business names must be exactly the same. It prevents lazy businesses from benefiting from the good name of the businesses that work so hard. This is important because the business name helps to sell the business to the customers.

What name do you want to call your little food sales business? Although your business is not a formal one, it has to be something different and catchy. The name must reflect the activity the business is doing. In your case, it is a food sale business. You also need to start advertising your business to inform your customers that you are going to provide a special service for example; serving their favourite foods at affordable prices.

Choose the best way to advertise your business.

- Go around to inform your customers
- Design posters to be placed in a number of places around the community. The poster must have the correct information in an attractive way. If you have done the menu, it is better to have it in the poster.
- On the day you are preparing food, have someone, possibly a member of the family to walk around the community, reminding the customers of the food available for sale. Can also give the possible time it will be made available.

What is a menu? How can you prepare one? A menu is a list and price of food that you will serve. You might want to change the menu every week to ensure your customers keep coming back. The food you serve will be based on the results of the list of food you have presented in your survey. This is because the survey tells you what the people want. It is good to start with a few snack items and drinks and a main meal. For example, your first menu could be:

Menu	Price (K)
1. Chicken casserole with rice ……	5
2. Rice with lamb stew ……	5
3. Banana fritters ……	0.50
4. Tapioca fritters ……	1
5. Boiled corn ……	1
6. Boiled peanuts ……	1
7. Kulau drink ……	1
8. Boiled egg ……	1

Calculate the Costs and your Profit

The cost of food plus profit should be calculated before you start your business. Take a look at the recipes at the end of this book. All the recipes come with the number of people to be served. If you are using them, make sure you do the costing correctly for the number you are preparing for. To calculate the costs, list all the ingredients from the recipe and their estimated costs.

To calculate the costs, list all the ingredients from the recipe and their estimated costs.

Ingredients:

1 large onion, peeled and sliced

2 table cooking oil

1 clove of garlic, crushed or finely chopped

1 medium size chicken, cut into serving sizes

Salt and pepper to taste

2 large tomatoes, seeded, sliced thinly

2 sweet potatoes or potatoes peeled and quartered

3 cups rice, washed and drained

4 cup a of thin coconut milk

1 red pepper

1 handful green beans, sliced thinly

1cup thick milk

1 lemon

Banana leaves, softened in sun or by hot water

Source: Making a Living – Grade 07

Method:

1. Heat oil in a big saucepan and fry onion and garlic then add chicken pieces. Stir to coat chicken pieces with oil and onion mixture. Sprinkle salt and pepper. Squeeze juice of one lemon onto chicken pieces. Put the lid on and simmer for about 10 minutes.
2. Stir chicken mixture lightly, add tomatoes, potatoes and rice. Add 4 cups of thin coconut milk. Continue stirring. When most of the coconut milk has been absorbed, add sliced peppers, and the green beans. Add thick coconut milk and stir until well mixed.
3. Place banana leaves in a big saucepan, with ends sticking out. Bring the overlapping banana leaves to cover the mixture. Cover the saucepan with the lid and heat at low temperature for 40 minutes or an hour.
4. When the rice and potatoes are cooked, serve hot on a plate.

Variation: shellfish, beef or pork may be used instead of chicken. You can bake the food in an oven from step 3.

Source: Making a Living – Grade 07

COSTS

ITEM	PRICE (K)
2 kilo chicken ……	5
1 kilo of potatoes ……..	5
2 tomatoes ……	1
2 onions ……..……..	1
1 bundle of green beans ……	1
2 bundles of green leafy vegetables …..……	2
2 carrots ……..	1
1 green capsicum or pepper ……	1
1 red capsicum or pepper …….	1
2 coconuts ……..……..	1
1 kilo of Trukai Rice ……..……..…….	5
Salt and pepper ……	1
	K35.00

Do you remember the formula for calculating the profit? If you are selling each plate of chicken casserole for K5.00 to 10 customers, what would be your profit?

Profit = Revenue – Expenses

K50 – K35

K15

How about other costs like transport, the use of equipment and time. You will need to add a percentage of the total income to cover these costs. You do two things. Increase the selling price or accept a reduced price.

At the end of sales activity, you need to find out how well you have done the work. Did you enjoy doing what you did? Are you happy with the profit? How can you increase your profit next time?

END OF SUPPLEMENTARY READING 3

Lesson 4: Preparing Food for Special Occasion



Introduction:

Welcome to Lesson 4 of Substrand 1. In the last lesson, you learnt about the factors that must be considered when preparing food for sale. In this lesson you will learn about the types of food that are prepared for special occasions. That is, you will learn how to prepare the food using the right recipes and preparing the correct menu for that special occasion.



Your Aims:

- Define menu and recipe
- Discuss aspects of food preparations for large number of people on special occasions.
- Identify the special occasions and their speciality activities.
- Identify recipes for special occasions.

What is a menu?

A menu is list of dishes available in a restaurant, takeaway place or any place that serve food to customers. It displays a list of the dishes that can be ordered in a restaurant or that are to be served at a formal meal. Each day a number of different menu are prepared on order from people dining there or outside diners wanting food delivered at homes or in offices. For example, Big Rooster has on its menu the following; fried chicken, barbecued chicken, fish, catering pack, finger foods, burgers and rolls, side orders, drinks and ice creams. So you can see that these are the menus offered by Big Rooster. Each one can be displayed with the prices beside ready for the customers to see.

What is a recipe?

A recipe is a set of ingredients and instructions for preparing a particular dish. The menus are prepared in special ways for the taste of each dish to come out. Each menu is prepared by blending each ingredient, in a set time for that outstanding taste for the customers need.

One can already conclude that recipe and menu go together and that is recipes are needed to prepare menus.

Special occasions

What are special occasions? They are important events where many people come together to celebrate or to commemorate or respect an event. Special occasions are extra ordinary and they attract a lot of people because they do not happen all the time. Special occasions in your community provide opportunities for selling food.

Some special occasions in a community include;

- a school open day
- school cultural day
- opening of a new church building
- a big church gathering
- a marriage ceremony
- a village court day

- compensation ceremony (highlands)



A village meeting
Source: Internet- 2013

Activity 4.1: Complete the activity given below.

List special occasions from the list on page 45 that happen in your community.

_____

Celebration

Food is always present at these special occasions

1. Birthdays are often happy occasions. Some families celebrate children's birthdays with so much food and invite relatives and friends.
2. Some have a traditional ceremony when boys and girls are considered to be adults.
3. Others have a big celebration when a child turns 21 years. This is a modern practice. Through this event/celebration the family members, especially the parents recognize adulthood of the child and grant independence to him or her.

Planning for Food Sales on a Special Occasion

You must apply the things you learnt in the last lesson when you are preparing food for an occasion to generate income.

You must have the following;

1. Resources

You are well aware that many resources are required when preparing food for sale to generate income for a special occasion. Resources cost money. They include ingredients, human efforts, materials equipment such as utensils, packages, fuel and of course your time used. All the prices must be built into the selling price of the food in order to get your money back and to make an extra money, which is why you doing this.

If food is prepared at the request of an organised group, consider the following. Otherwise for normal sales, foods can be prepacked in to leaves or store bought packets. If not, keep food in a covered food container and serve using leaves and plastic containers at your set price for each pack. Bear in mind food hygiene, safety, and keep your initial plan to make profit.

As you have learnt about menu at the beginning of this lesson a food menu is a list of different combination of food usually making a meal. The menu(s) selected will depend on the purpose of the occasion. Deciding the menu in the first place will help in a big way with the organisation of the whole event.

2. Budget

Produce a budget for the event considering all the factors discussed. This will include all the costs of the event. Work out your total cost, sales and profit as well.

3. Quotation

Prepare a simple quotation outlining the costs of the menus. Build in the labour and other costs so that they are covered. When you have made your total cost, do not forget your profit margin. Add it on to your cost. You will need to prepare a quotation if an organisation is asking you to provide food on a larger scale.

- A menu is a list of different combination of food usually making a meal.
- A recipe is a set of ingredients and instructions for preparing a particular dish.
- Food is always a part of special occasions in Papua New Guinea.
- It is not easy when it comes to preparing food for an occasion to generate income. All factors must be considered so that the host and the customer is satisfied with the service or product and importantly you have made a profit from the activity. Packaging, food handling, resource and costs are all important factors to consider carefully and properly for preparing food for special occasions.

4. Organisation

Organise all buying and other preparation a day before the day of cooking. You will have decided on the suitable food preparation methods as part of your planning. Complete all preparation and get food covered. Food must be prepared and ready for the event 1 to 2 hours before the set event starts. All foods must be covered.

Summary:



You have come to the end of Lesson 4. In this lesson you learnt that;

- A menu is a list of different combination of food usually making a meal.
- A recipe is a set of ingredients and instructions for preparing a particular dish.
- Food is always a part of special occasions in Papua New Guinea.
- It is not easy when it comes to preparing food for an occasion to generate income. All factors must be considered so that the customer is satisfied and importantly you have made a profit from the activity.
- Packaging, food handling, resource use, costs are all important factors to consider carefully and properly.

NOW DO PRACTICE EXERCISE 4 0N THE NEXT PAGE



Practice Exercise 4

1. Describe two (2) different ways of packaging food prepared for a special occasion

(a) _____

(b) _____

2. Develop a plan of a food preparation on a special occasion for 50 people to generate income. Consider all factors discussed.

Think of a special occasion that will attract a lot of people. This is your opportunity to prepare food and sell to make money for yourself. Write out your plan to take on food sales during that occasion. Your main heading is 'My Food Sales Plan'. In the plan you should consider all factors discussed. The following questions should help you.

(a) What should I sell and why?
(b) Who do I sell to, every one, adults, children,
(c) Where do I get the food from?
(d) What else do I need?
(e) Where do I locate my stall?
(f) Are my prices reasonable?
(g) Are there other people going to sell what I sell?
(h) Do I have some money to buy the things I need for the food sales?
(i) Do I need help from the other members of the family?
(j) How will I attract people to come to my stall instead of the others?
(k) Finally say why you believe this plan is going to work for you and that you will be successful.

NOW CHECK THE ANSWERS TO YOUR EXERCISE AT THE END OF STRAND 2

Supplementary Reading 5: Preparing Food for a Large Group

Cooking for a crowd

Preparing and cooking food for a large group of people involves planning ahead to meet the needs of people you are serving. Calculating the costs of food and other expenses involved and organizing resources required can be a task.

- Have you eaten in a restaurant, coffee shop or fast food shop?
- What foods did you eat in any of those places?
- Where did you eat your food – inside or outside?

When preparing food for a big group, it is important to think about the following;

- **The number of people you are cooking for** – this helps you to know how much food to buy and prepare. Too much food will be a waste of time and money and too little will result in unhappy customers.

- **What foods you will prepare** – Your choice of food to prepare and serve depends on your customers. School children have different tastes and needs for food and will probably have a small amount of money to spend. while adults may want a bigger serve of food and ma have more money to pay for food.

- **How much money you have** – It is always helpful to know how much money you plan to spend for food and other items so you do not end up borrowing or using money allocated for other expenses. It is also important to calculate how much money or profit you could make.

- **Amount of food for serving** – it be helpful to use a measuring container to determine the serving portion. For example; cooked rice could be measured in a cup, soup would be measured in cups and cake would be sliced. Using a measuring container is useful and important so you serve the same amount all the time.

- **Equipment or facilities you need** – Special cooking equipment is needed to prepare large amounts of food, extra tools such as knives, cutting boards and containers are needed. Serving containers such as plates, cutlery and glasses may be needed.

- **Time of day when food should be served –** Are you serving breakfast, lunch dinner or morning and afternoon tea?

- **What food will you cook and serve** – This will depend on how good you are on cooking, the amount of time you have to prepare the food, the cooking equipment and utensils you have, and the food available in your area. Is there a regular supply of foods from the market or shops?

- **Price of food that people are willing to pay** – this will depend on whether your customer will be able to afford to buy the food you are selling?

Organise the food preparation, days before the party. Find out which food can be prepared before the party. Find out which food can be prepared in advance so there

will be less preparation during the day of the party. Complete most of the preparations so you can spend time with the guests when they arrive.

Serving plates, glasses and cutlery are equally important as the food. Find out the number of expected guests and have 10 sets of serving tools.

Assign 2 people to serve drinks as guests arrive. Assign someone to meet the guests as they arrive and direct them to the area where you want them to be seated. Relatives may not necessarily need to be told where to go, but it is good to greet them as they arrive and give them drinks. Introduce the guests to each other if they have not met before and encourage them to mingle and meet others. Have two people go around to serve finger foods (foods that can easily be eaten while held in your fingers. While drinks and finger foods are being served and the guest are talking, start serving the course of the meals as per the menue.

Setting a table for a buffet is good when there is a big group to serve the meals. A buffet service is also called self-service where guests serve themselves from the table and this is a service usually offered by restaurants and hotels.

What is a buffet table?

A BUFFET



Source: Internet-2014.

A buffet table is a table at the side of the room or area. You place the food on the table. People walk and serve themselves. It is a good idea to have someone at the table to assist.

Foods are attractively arranged around the table making it easy for the guests to move around and serve themselves. It is important to organise who is to be served first and make sure that some food is available for the last few people.

Celebration

1. Birthdays are often happy occasions. Some families celebrate children's birthdays with so much food and invite relatives and friends.
2. Some have a traditional ceremony when boys and girls are considered to be adults.
3. Others have a big celebration when a child turns 21 years. This is a modern concept. Through this event/celebration the family members, especially the parents recognize adulthood of the child and grant independence to him/him.

You must know that organising can be worrying and frustrating, especially if you have not planned ahead. Always organise to engage family members and friends with preparations so that you do not exhaust yourself.

The following a sample menu suitable for a birthday celebration.

Cold Drinks

Iced tea, tropical fruit punch, kulau

Finger Foods

Boiled peanuts, crudités (raw vegetables and dips)

Main meal

Chicken satae with peanut sauce boiled eggs in curry sauce, rice bundles in coconut milk, fish croquettes, garden salad, pitpit in white sauce, sweet potatoes balls

Desert

Tapioca cake, pariva dia,
Birthday cake,
Chocolate cake

It is good to serve a variety of healthy food, not necessarily expensive food but tasty and attractively presented.

END OF SUPPLEMENTARY READING 5

Supplementary Information 6: Preparing Food for Special Occasions

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Thanksgiving

People gather around a table with family and friends to share a holiday feast. They give thanks for the blessings of the past year. For Americans Canadians and many Christians around the world including Papua New Guinea alike, these activities are an important part of Thanksgiving Day celebrations.

As they celebrate Thanksgiving, they also pay tribute to the Pilgrims and Native Americans who shared the first Thanksgiving feast nearly 400 years ago.

When is Thanksgiving?

People in the United States celebrate Thanksgiving Day on the fourth Thursday in November. In Canada, Thanksgiving is celebrated on the second Monday in October. Others have their own timings but closer to the Americans and Canadians,

Where does Thanksgiving originate from?

Since ancient times, people have celebrated the autumn harvest. They marked the plentiful harvest with feasts, dances, and prayers of thanks. If the harvest was disappointing, the celebrations might be cancelled.

The English Puritans, who settled in America in the early 1600s, also shaped Thanksgiving celebrations. Puritan communities were very religious. From time to time, they devoted special days to give thanks in prayer.

The first Thanksgiving in America

In 1620, the Pilgrims founded the Plymouth Colony (in Massachusetts). The Pilgrims, a group of English Puritans, faced a difficult first winter. Many died of starvation. The following spring, Native Americans taught the Pilgrims how to raise corn and harvest local seafood. In the fall of 1621, the Pilgrims harvested their first crops.

The Pilgrims decided to celebrate the harvest and give thanks to God with a feast. They invited Wampanoag chief Massasoit and about 90 of his men to attend. The Native Americans brought five deer to the feast.

The feasting lasted three days. Pilgrims and Native Americans dined on roasted *venison* (deer meat), wild turkeys, geese, ducks, lobsters, clams, and eels. They ate boiled pumpkin, cornbread, wild plums, carrots, and turnips.

Traditional Thanksgiving foods

Traditional Thanksgiving foods include turkey with bread stuffing, mashed potatoes, sweet potatoes, and cranberry sauce. Pumpkin pie is a classic dessert. Most of these basic foods are native to North America. They help Americans recall the simple way of life of the Pilgrims.

But these traditional dishes are not the only foods of modern Thanksgiving celebrations. As people have migrated to America from other lands, they have added their own traditions. For example, many Italian American Thanksgiving meals include Italian dishes, such as pasta.

Easter

The Easter bunny, brightly colored Easter eggs, and Easter baskets filled with treats—all of these popular traditions are a part of Easter. Easter is a joyous holiday for Christians. It celebrates the resurrection, or rebirth, of Jesus Christ.

Easter is always celebrated on a Sunday, the day of Christ's resurrection. But the exact date of the holiday changes from year to year. Easter falls sometime between March 22 and April 25.

Why do Christians celebrate Easter?

The Friday before Easter, called Good Friday, marks the day that Jesus was crucified (nailed to a cross). Crucifixion was a common death penalty in the ancient Roman world. Christians believe Jesus was sacrificed to pay for the sins of mankind.

According to the Bible, Jesus' followers placed his body in a tomb the day he died. On Sunday, several followers visited the tomb and found it empty. Two shimmering angels appeared before them. The angels said Jesus had risen from the dead.

Jesus then appeared before his followers and spoke with them. For Christians, Jesus' resurrection offers hope for everlasting life in heaven after death. Most Christian churches observe the Easter holiday with special services.

A Spring Celebration

Many Easter traditions began long before Christianity. The Easter holiday is rooted in older festivals that celebrated the arrival of spring. The ancient Greeks, like many other ancient people, viewed spring as a time of renewal and rebirth after the winter.

Easter Bunny and Easter Eggs

The Easter bunny and Easter eggs are very old traditions that symbolize spring and new life. Colorfully painted Easter eggs represent the colors of spring, including early spring flowers like daffodils, crocuses, and lilies. Over time, people added Easter baskets, Easter egg hunts, and candies to the festivities.

Why does the date of Easter change?

Deciding what day Easter falls on is a complicated process. Today, most Christians celebrate Easter on the first Sunday after the first full moon following the first day of spring. The earliest possible date this Easter Sunday can fall on is March 22. The latest possible date is April 25.

The Orthodox Churches—Christian churches historically based in the East—calculate Easter differently. For this reason, the Orthodox Churches usually celebrate Easter on a different day.

Today, some Christian churches want to change how Easter is calculated. They had like to see Easter become a fixed date on the calendar, like Christmas.

END OF SUPPLEMENTARY READING 6

ANSWERS TO

SUBSTRAND 1

PRACTICE EXERCISES

ANSWERS TO PRACTICE EXERCISES 1 – 4

Practice Exercise 1

1. What is the aim of the Market Research Survey?
Sample answers

- *To find out what type of food can be sold to customers.*
- *To find out how food can be sold to customers.*
- *To find out if the class can open a small kai shop*

2. What is the method used to gather information?
Questionnaire and interview.

3. Study the survey questionnaire and its results as studied in the lesson
(a) What percentage of the people surveyed are self-employed?
30%
(b) What fraction of the population surveyed wanted breakfast?
1/5 (one fifth)
(c) Can breakfast be served? Why?
No, because the number is too small to prepare for.
(d) How often should food be served? Why?
daily, because 35 people indicated that they would like to buy

4. List two benefits of planning before actually starting a small business?
(a) helps you consider possible problems
(b) helps you consider possible answers to possible problems
(c) helps you make judgements regarding profits or losses.
(d) helps you make decisions whether a project should start or not

Practice Exercise 2

1. In your own words describe the advantages of producing your own food.
   The advantages of producing own food is that we can reduce the need of buying from others. That money can be used for other purposes. Other benefits include;
   - *more convenient*
   - *seasonal varieties are made available*
   - *helps to generate an income by selling the surplus*
   - *creates a feeling of self esteem*
   - *sustainability and healthier lifestyles*
   - *importantly this promotes self-reliance,*

2. (a) Think about other foods that can be processed. List and describe them.
   - *Peanuts – are processed into peanut butter*
   - *Fruits – are processed into juice*
   - *Coconuts (grated) – is processed into soap*
   - *Fish – is processed into tin fish*
   - *Potatoes – are processes into frozen chips*
   - *Tomatoes – are processed into juice*

(b) Write a recipe to process raw food to make a useful product. Refer to the example given in the lesson to help you.

Sample Answer: The student may have his/her own.

Pig Meat - (leg)

Method

1. *Boil in water. It has to boil for a long time*
2. *Place on the fire. The fire has to be smoky made from coconut husks.*
3. *Continue to repeat the process for weeks until very dry. Keep in the basket over the fire until ready for cooking for the occasion.*

3. Write wet or dry besides each of the following list of food preparation methods.

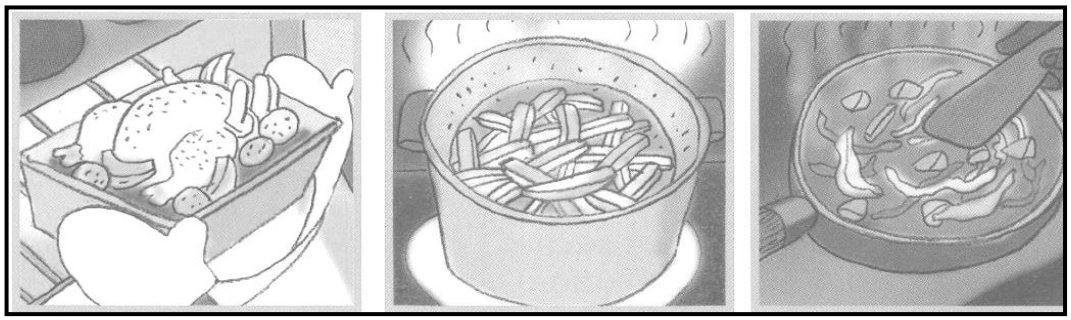
• *Boiling*	*wet*	• *Mumu*	*dry*
• *Baking*	*dry*	• *Barbecuing*	*dry*
• *Grilling*	*dry*	• *Steaming*	*wet*
• *Smoking*	*dry*	• *Stewing*	*wet*

4. List two (2) advantages and two (2) disadvantages of wet cooking food using water.
   (a) Advantages: *Hard food is soften easily*
   Everything cooks together and quickly
   (b) Disadvantages: *Nutrients get dissolved in the water*
   An utensil of different sizes is always needed

5. Match the list of methods of preparing food with the appropriate pictures below Write the numbers in the spaces provided.

(a) (6) Boiling,
(b) (3) Shallow frying
(c) (1) Roasting
(d) (5) Grilling
(e) (4) Smoking
(f) (9) Mumuing
(g) (5) Barbecuing
(h) (7) Steaming
(i.) (8) Stewing

Different methods of cooking



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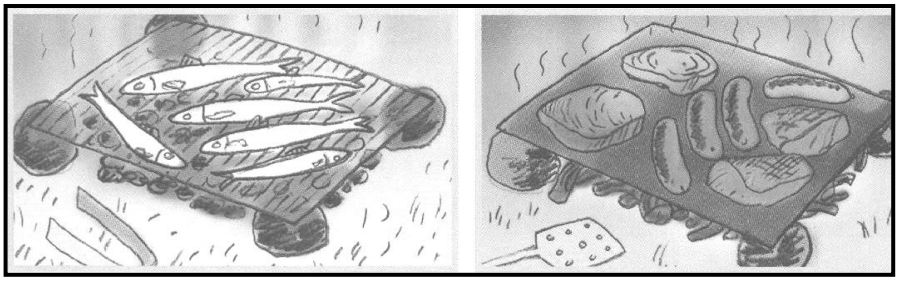

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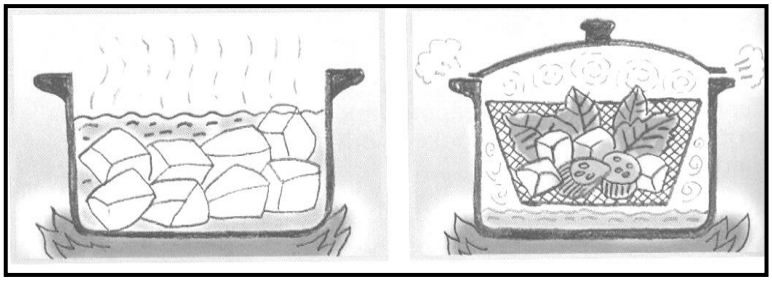

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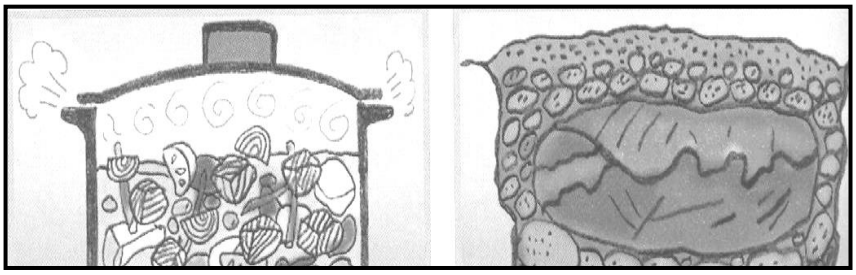

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Practice Exercise 3

1. (a) How can packaging help improved handling of food?
Packing help improve handling of food by protecting the food from dirt and bacteria. It also helps food to be intact during transportation and storage.

(b) List 5 different ways of packaging food for sale
Using the following:
leaves, paper, and cardboard, plastic, foil wrap, glad wrap, brown papers, bottles, glasses, tins,

(c) Imagine you are the customer of other people. Describe your expectations from a food seller.
Food is wrapped properly so that the dust does not get into it.

2. Make a list of rules for hygienic handling of food.
- *Wash hands at all times when handling food*
- *Keep hair covered*
- *Wear gloves*
- *You must not be sick (flu)*

3. What are some of the things that you can do to reduce cost of production without lowering quality of it?
Maybe use;
- *firewood to cook*
- *Borrow needed equipment to use*
- *Handle equipment with care*
- *Use leaves instead of foil*
- *Improvise materials where possible*
- *Compare prices of what you are buying to sell and get value for money*

4. With lots of people around at a special occasion, think of a variety of hot and cold food you could sell. Make a list. Think about where and how you are going to get them in the first place in order to sell them. List the source of food and the cost (if you paid any money to get it) beside the food name. Then calculate how much you are going to sell each food item for. What will be your profit?
Special occasion is University Cultural Show. I will sell soft drinks. I will buy 5 cartons of 7 Up from Bismilah Wholesale. In each carton is 24 cans. (24 x 5 = 120 cans)

The wholesale cost is: 1 carton – K 35.85 (K 35.85 x 5 = K179.25)
K179.25 / 120 cans = K1.493

I will sell one can for K2.50.
K2.50 x 120 = K300
K300 – K179.25 = K120.75 (profit)

Practice Exercise 4

1. Describe two (2) different ways of packaging food prepared for a special occasion
(a) In trays and covered with foil
(b) In big dishes and covered with banana leaves and carefully tied up.

2. Develop a plan of a food preparation on a special occasion for 50 people to generate income. Consider all factors discussed.
Think of a special occasion that will attract a lot of people. This is your opportunity to prepare food and sell to make money for yourself. Write out your plan for food sales during that occasion. Your main heading is 'My Food Sales Plan'. In the plan you should consider all factors discussed. The following questions should help you.

(a) What should I sell and why?
Rice and beef stew / chicken stew/ soft drinks
(b) Who do I sell to, every one, adults, children? *Everyone*
(c) Where do I get the food from? *Market/ supermarkets/ wholesalers*
(d) What else do I need? *Cooking utensils*
(e) Where do I locate my stall? *Along the pathway to the dancing arena*
(f) Are my prices reasonable? *Yes, K8.00 – rice and stew and K 2.50 for drinks*
(g) Are there other people going to sell what I sell? Answer: *Yes*
(h) Do I have some money to buy the things I need for the food sales? *Yes*
(i) Do I need help from the other members of the family? *Yes,*
(j) How will I attract people to come to my stall instead of the others?
Announce through loud hailer, write it out and display in front of the stall
(k)Finally say why you believe this plan is going to work for you and that you will be successful.
The special occasion is University Cultural Show. In Port Moresby, people move about with a lot of money. Students relative and the public will flood in to watch the show. Obviously, they will come to the show with money to spend.

SUBSTRAND 2

CARE AND MANAGEMENT

In this sub strand, you will:

- **Explain skills that are necessary for working effectively with others**
- **Identify community members who have appropriate skills for projects**
- **Identify needs within the community through participation in democratic decision making processes**
- **Discuss a plan of action for a selected project**
- **Discuss how to plan, implement and evaluate a project in terms of effectiveness**

SUBSTRAND 2: INTRODUCTION



Welcome to Sub strand 2: Care and Management. In this Sub strand, you will learn about working together with others to select a project. You will be identifying needs within the community. You will also learn how to plan, implement or set up and evaluate the project.

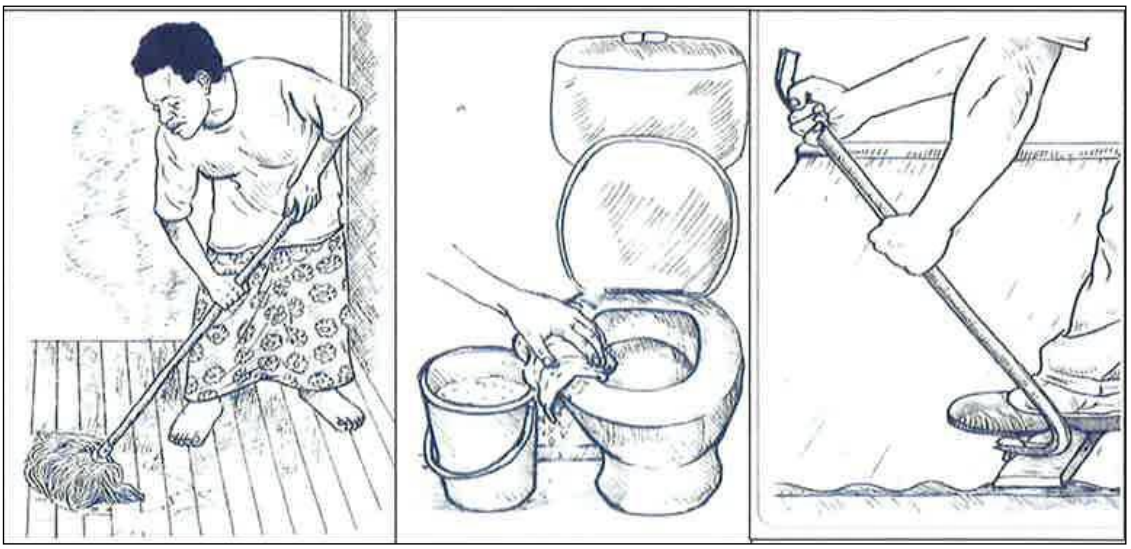
This sub strand consists of four lessons.

Lesson 5 is on working together with others. It involves identifying attitudes and behaviour necessary for effectively working with others.

Lesson 6 is about assessing and identifying needs for possible community cooperative projects.

Lesson 7 talks about planning a community cooperative project. It develops an action plan for an identified community project. It also involves the consideration of all related aspects.

Lesson 8 discusses the evaluation of a community cooperative project.



Common Home Maintenance
Source: making a Living- Grade 07.

Lesson 5: Working Together



Introduction:

Welcome to Lesson 5 of Substrand 2. In your last lesson you learned about the factors that need to be considered when preparing food for a large number of people. You also learnt about other things that need to be considered when preparing food for selling to a large group of people. In this lesson, you will learn how well you can work with others.



Your Aims:

- Identify the benefits of working together with others in the community
- Discuss how to appreciate and relate to one another in an acceptable way

Cooperative Team Work

It is important to have a good working relationship with others. While you are working with others, communicate well with one another. It is an important tool for working together or team work as many people now call it. You need to communicate or relate well with members of the team to be get the jobs done.

Members in the team/group must have the necessary skills to carry out particular tasks. Whether it is an individual or community service, before a job is given to you; you need to have certain skills to contribute to the team's effort.

The answers to the following questions should help you establish some facts about the team you are in to complete a given task.

1. What exactly are we expected to do?
2. How am I going to help?
3. Who are we working for?
4. Who am I working with?
5. What kind of behavior and attitude do my work mates have?
6. Which skills and trade do the workers have?
7. Can the community members be involved on the job site?
8. What kind of communication skills should you have for a better relationship?

When you have a good working team, it is important to know each member of the team personally and understand their strength.

Getting to know them individually and to identify which area of trade and skills they are specialized at. Know their personality and working behaviour and attitude. It is good to understand who you are working for and who you are working with.

The possible ways of involving the community is to get the youths and other adults to assist on the jobs as the village councillor overseas the activities.



Activity 5.1: Complete the activity give below.

Discuss and list five (5) positive attitudes and behaviour in building a good working relationship.

(a)_____

(b)_____
(c)_____
(d)_____
(e)_____

Building good working relationships

Effective interpersonal skills are needed to build good working relationship. What are interpersonal skills? These are the skills within a person to relate well to others. You develop effective interpersonal skills by following these strategies:

- Be a good listener,
- Manage anger and conflict,
- Communicate accurately (verbally and non-verbally),
- Understand people's feelings,
- Develop conversation skills,
- Express feelings appropriately,
- Show care and consideration and assist others,
- Demonstrate commitment,
- Be loyal and trustworthy,
- Communicate clearly, make suggestions, obtain feedback, exchange ideas, and encourage one another.

Activity 5.2: Complete the activity given below.

Select two (2) strategies to developing interpersonal skills. Give an advantage for practising each skill.

(a) Skill_____
Advantage _____

(b) Skill_____
Advantage_____

Public relations

Public relations involve your relationship with wider community. Ways or strategies that contribute to good public relations include:

- Honest, ethical, polite, courteous behavior.
- Respect for community property.
- Friendliness in greeting, talking and listening to community members.
- Developing ideas to improve some aspect of community life.
- Being prepared to work hard to help others and contribute to improving conditions in the community.
- Involvement in community activities.
- Cooperation in achieving results.



Oral communication skills involve speaking, active listening and comprehension.
Source: Making a Living -Grade 07.

Effective Communication Skills helps us to discuss issues peacefully without creating any conflict among the members. Speaking skills involve your choice of words, sentence order and structure, tone of voice, eye contact, gestures and facial expressions. To communicate your ideas, state your point of view clearly and give a reason to support it. Take turns to speak. Wait until another person finishes speaking before indicating you wish to speak in response. Avoid interrupting. Speak clearly and loudly enough for listeners to hear.

Active listening skills involve listening carefully to the views of others and then repeating part of what has been said and adding to that idea. This shows that you respect the views of others and are willing to explore them. Team work requires open communication and willingness to listen to and consider the views of others.

Comprehension means understanding. If you do not fully understand what another person is saying, politely ask questions to gain clarification: 'Can you explain further?' 'Excuse me, can you clarify that point?' 'Do you mean that…?' 'If I understand you correctly, you want us to ……, Is that correct?

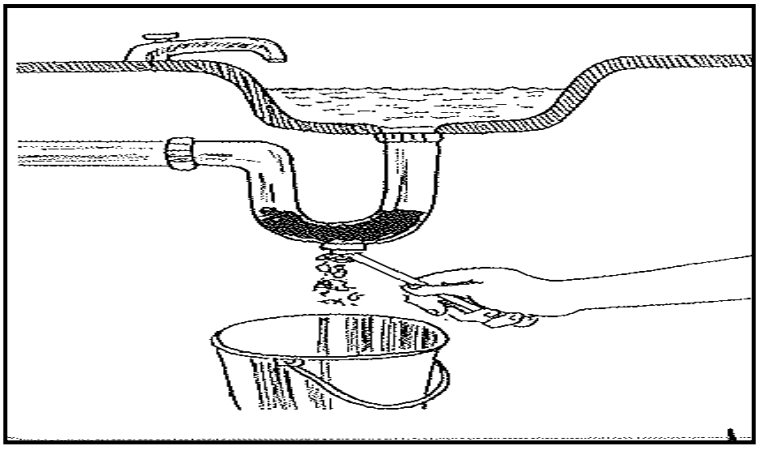
Activity 5.3: Complete the activity give below.

List the three (3) main ways of effective communication;

1. _____
2. _____
3. _____

Working together in a community project

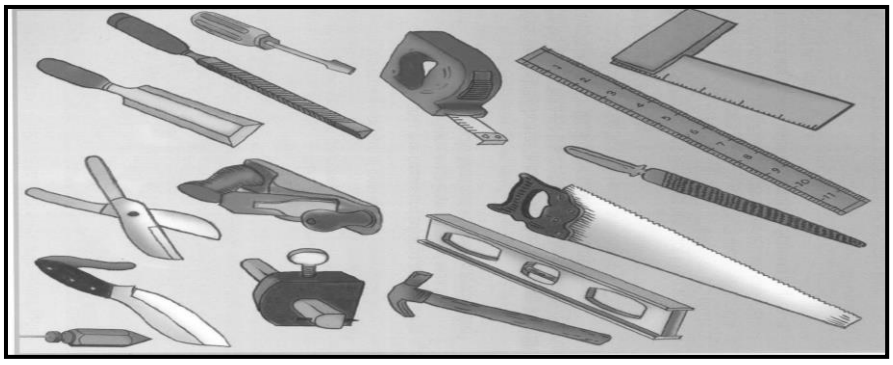
We need skilled people such as carpenters, plumbers, mechanic, electricians and brick layers to do the job properly. We need building materials such as bamboos, grass, timbers iron, brick, cement, gravel and stones to build the house, depending on the type of houses. We need the skilled experts who can do better and lasting jobs.



A plumber fixing a blocked kitchen sink
Source: Making a Living -Grade 07.

Useful tools

There are many tools available to repair or build a house easily and quickly. Some basic tools are simple, easy to use and can be made using locally available materials. They are useful in doing simple and small jobs. Suitable tools are important to complete any task efficiently and effectively.



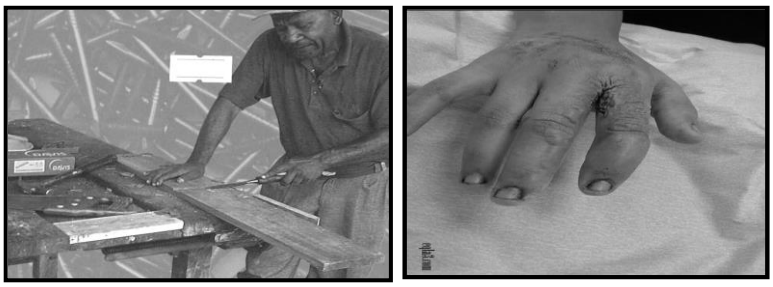
Basic and useful tools
Source: Making a Living -Grade 07.

Care of equipment in team work

Tools and working materials must be well looked after. Certain jobs need certain tools to do the job well. It will be costly to buy the tools and other equipment again to do our work better. There will be people in the team who may mishandle equipment. Someone in the team must be appointed to oversee the use and care of the tools and equipment.

You will learn that using right tools could help to finish your work faster with much better results.

Safety is important to the team. Mishandling of tools and other equipment will not only cause damage to the equipment, but may also cause serious injuries to the user. Careful use of tools ensures safety and self-satisfaction to workers.



Accidents do happen. Use tools carefully.
Source: Making a Living Grade 07.

Summary:



You have come to the end of Lesson 5. In this lesson you learnt that;

- Strong working relationship is kept through effective communication.
- Building a good relationship through public relations, with the assistance of different skilled workers.
- People who have the right skills and talent with the right tools can take up any job anywhere in the community when they are needed.
- Tools costs a lot of money, therefore they must be taken care of from theft or poor handling.

NOW DO PRACTICE EXERCISE 5 0N THE NEXT PAGE



Practice Exercise 5

1. What are the advantages of practicing the following interpersonal skills?

No.	Behaviour	Advantages
1	Be a good listener	
2	Manage anger and conflict.	
3	Communicate accurately	
4	Demonstrate commitment.	
5	Communicate clearly	
6	Encourage one another	

2. Discuss and list five positive attitudes and behaviour in building a good working relationship.

(a)_____
(b)_____
(c)_____
(d) _____
(e)_____

3. Match the occupations below on the left with the trades on the right by ruling arrows.

(a) A person who paints	Welder
(b) A person who builds houses	Plumber
(c) A person who fixes toilets	Mechanic
(d) A person who welds metals	Painter
(e) A person who fixes cars	Carpenter
(f) A person who paints	Welder
(g) A person who builds roads	Plumber
(h) A person who fixes toilets, (**Example)**	engineer

CHECK YOUR WORK. ANSWERS AT THE END OF STRAND 2

Supplementary Information 7: Working Together

Below is an article of how people are working together to support themselves by being involved in a project. Anyone at the village level or town can participate in with minimal expenses. It only requires an effort by someone to be part of the group of farmers.

Papua New Guineans are naturally gifted and hard – work. This reading highlights this desire by a floriculture group from Manus Province to be part of the annual Flower Show in Port Moresby.

The President of the Papua New Guinea Cut Flower Association – Mary Saun called on the National Government to support the floriculture in Papua New Guinea.
Mrs. Saun said local farmers had greater potential and the need to expand these potentials lie within emphasis placed by the government.

She was speaking during the closing of a five – day long Flower Show at the Port Moresby Arts Theater in Port Moresby last Friday.

The fifth National Capital District Flower Show with its theme ' Grow Local – sell global' is an annual event that was first established in 2009 and aimed at establishing network and sharing of ideas on floriculture, promoting quality and quantity of flowers through training of marketing and promoting capacity building.

"People from all walks of life are tapping into this industry and the government must offer support in any way possible to enhance the capabilities of farmers to advance and be successful and participate meaningfully in this industry". Mrs. Saun said.

She also called for opportunities to be given to local growers to participate in fresh - cut flower arrangements and indoor pot plants hire in any events that are staged locally.
"For this industry to move forward – local farmers must be involved to motivate them and boost their morals because they are the backbone of this industry."

Mrs. Saun encouraged flower growers to conduct mini survey to identify potential buyers for marketing purposes and continue to take the challenge and participate in the next show that always coincides with Mothers' Day in 2014.

According to the Managing Director of Investment Promotion Authority – Ivan Pomaleu – floriculture industry is one of the fastest growing industries around the globe.
"I don't see it as a woman activity, but as a business and I urge you to participate in this emerging industry" Mr. Pomaleu said.

The show was judged on catagories including – pot plants presentation, fresh cut – flower arrangement, fresh cut – flower, dry flower arrangement, foliage, uniform, first time participation and best stall set up.

Seven provinces traveled to Port Moresby to take part in the show with first timer Manus Floriculture eventually walking away with nine (9) awards and the prestige farmer of the year award.

It was worth the effort for Manus who traveled in with 14 largest coolers and two rubbish bins containing all materials despite an excess cost of K2 454.

BY Elizabeth Sarere, Post Courier, 13 May, 2013.

END OF SUPPLEMENTARY READING 7

Supplementary Information 8: Scouts

Girl Scouts

The Girl Scouts help girls build skills. Those skills have changed with the times. The first achievement badge—Child Nurse—was awarded in 1912. It was given to girls who showed they could care for children.

Today, Girl Scouts earn badges for achievements in many areas, including math, science, arts, sports, and managing money. They can even earn awards online for exploring computers and cyberspace.

Who are the Girl Scouts?

There are about 3 million members of the Girl Scouts of the United States of America. Girls of all backgrounds are welcome to join. Scouts range in age from 5 to 17.

There are five age levels of Girl Scouts. These levels are Daisy (ages 5 and 6), Brownie (ages 6 to 8), Junior (ages 8 to 11), and Girl Scout (ages 11 to 17).

Scouts are guided by the Girl Scout Promise and the Girl Scout Law. The Promise states, “On my honour, I will try to serve God and my country, to help people at all times, and to live by the Girl Scout Law.”

The Girl Scout Law states the qualities Scouts should strive for. These qualities include honesty, helpfulness, responsibility, fairness, and courage. The Girl Scouts also trains girls to be leaders.

What do Girls Scouts do?

Girl Scouts meet in small groups called troops with adult leaders. The troops and their leaders meet about once a month. They work on crafts or projects. They also plan activities to help their communities. For example, Scouts might distribute food for the homeless or raise money for a scholarship fund.

Girl Scouts also go on trips. These can be overnight camping trips at a nearby state park. Or they can be longer trips that might involve a tour of historic ruins or backpacking in a wilderness area.

Girl Scouts earn badges, patches, and pins for achievements in different areas. Girls might choose to work for these awards in fitness, pet care, community service, reading, sports, arts, and many other activities. Brownies win Try-Its for trying different activities. Girl Scouts can even create their own club as part of a program called Studio 2B that enables teens to set their own goals.

Selling Girl Scout cookies

In 1917, the Girl Scouts started selling cookies to pay for troop activities. Back then, the Scouts—with their mothers—baked the cookies at home. Today, there are companies that bake the special cookies.

More than 170 million boxes of Girl Scout cookies are sold every year. Thin Mints are the most popular kind.

How the Girl Scouts began

The Girl Scouts were founded in 1912 by Juliette Gordon Low. Low called a meeting in Savannah, Georgia, where she lived. Eighteen girls attended the first meeting.

Low got the idea for the Girl Scouts from friends she had met in England, Robert Baden-Powell and his sister Agnes. Robert had started the Boy Scouts in England, and Agnes had started a group for girls called Girl Guides.

Low liked the idea of bringing girls from all backgrounds together. She believed that girls should know their way around the great outdoors as well as how to cook and sew. She wanted to prepare girls for lives as homemakers. She also wanted them to be ready to join the business world, if that's what they chose to do.

Low travelled and set up Girl Scout troops across the United States. She also established a national organization. The Girl Scouts expanded rapidly.

Boy Scouts

Have you ever met a Bobcat, Wolf, or Bear? Perhaps you know a Tenderfoot? If so, you probably know someone who belongs to the Boy Scouts.
The Boy Scouts is a worldwide organization for young people. It teaches them to be good citizens and prepares them for the responsibilities of adulthood. The Boy Scouts' motto is "Be Prepared."

Scouting around the World

Scouting began in England in 1907. The Boy Scouts of America (BSA) started three years later. Today, there are Boy Scout programs in more than 140 countries. In the United States alone, there are over 4 million Scouts!

What do Scouts do?

Boy Scouts learn useful skills while having fun. Scouts swim and play sports, go camping and hiking, and learn how to survive in the outdoors. They learn how to protect the environment and conserve resources.

Other Scout activities include making arts and crafts, learning first aid, and learning how to use computers or fix cars. Scouts often do community service and volunteer work.
Scouting has many ranks. Scouts advance through the ranks by learning new skills and earning badges.

Scouts learn teamwork and cooperation by working together. Scout law requires Scouts to practice many virtues. Among them, a Scout should be trustworthy, loyal, helpful, friendly, courteous, kind, obedient, and cheerful.

Four kinds of Scouts

There are four main levels of the Boy Scouts of America. Boys who are in first grade or are seven years old can enter the Tiger Cubs. Each Tiger Cub has an adult partner. Uniforms are optional for Tiger Cubs. Scouts and adults may wear orange Tiger T-shirts and hats.

Boys who are in second grade or are at least eight years old can join the Cub Scouts. The Cub Scouts wear blue uniforms with blue and gold scarves.
Boys who are 11 to 17 years old can join the Boy Scouts. Boy Scouts wear khaki uniforms that include caps, scarves, shirts, and pants.

Boys and girls who are 14 to 20 years old can join the Venturing program. This program helps young people develop leadership skills. Members of the Venturing program wear green uniforms.

Cub Scouts

Cub Scouts complete a series of indoor and outdoor activities to earn badges. These activities include learning to swim, tying knots, and using tools. By earning activity badges, Cub Scouts move up through the ranks.

The Cub Scouts has four ranks: Bobcat, Wolf, Bear, and Webelos. Webelos, the highest Cub Scout rank, is short for “We’ll Be Loyal Scouts.”

Cub Scouts belong to a den made up of six to eight boys who live near each other. Several dens are grouped together to form a pack.

Boy Scouts take part in projects by themselves and as part of a group. Boy Scouts earn merit badges to move up the rank. Each merit badge requires a Scout to master different skills. The most popular merit badges include first aid, environmental science, swimming, and leatherwork. Merit badges are offered in more than 100 different areas.

The Boy Scout ranks are Tenderfoot, Second-Class, First-Class, Star, Life, and Eagle. Eagle Scout is the highest rank in Boy Scouting. To achieve this rank, a Scout must earn many merit badges and do community service. Only about 1 percent of all Boy Scouts earn the Eagle Scout award.

Boy Scouts are grouped into patrols, with up to eight Scouts each. Four patrols together form a troop.

Venturing Scouts

In the Venturing program, Scouts are grouped in crews. Young people lead the crews in activities that include outdoor challenges and adventures. Adults help out when they are needed. Venturing crews are required to teach what they have learned to others.
Venturing crews have sailed the Caribbean Sea and climbed mountains. They made plays and taught disabled people to swim. Venturing crews choose their own projects with the guidance of their adult advisers

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END OF SUPPLEMENTARY READING 8

Lesson 6: Identifying Community Needs



Introduction:

Welcome to Lesson 6 of Substrand 2. In the last lesson you studied about the importance of how well you can work with others, in building a team work spirit. In this lesson you are going to learn about identifying community and interest group needs using different methods.



Your Aims:

- Identify community needs
- Discuss community needs
- Identify interest group needs
- Discuss and assess needs for possible community projects

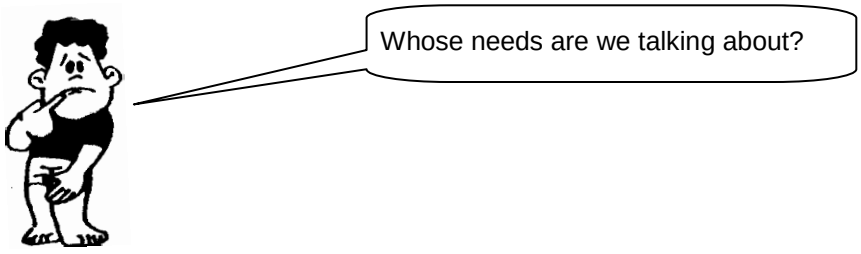
What are community needs?

You belong to a number of groups in the community apart from the general big group that every one in the community belongs to. The smaller groups are called interest groups because you join them by interest, for example, a sport or fitness club. The members' common interest is sports or fitness.

The interest groups may also have certain improvement needs. As a member of the community or the interest group you have a means or intention to undertake improvement co-operative project. Talk to the members of these groups, especially the leaders to find out if there is any need for members to take up some improvement projects. Make a list of the need areas.

Your aim is to start a group project that should cost no money. However, if there is going to be any cost involved, it must be small. There are many community activities for community co-operative projects without any cost at all, for example, street or village cleaning. People who live along the street or in that village bring their tools and other equipment needed to clean up their section of the street or living area. Who benefits after the work is complete? The members do.

The members of the group must have the skills and other resources on hand to help in the project. If a community project needs a community need, it requires a lot of money and other capital resources, then ask it to the government though your local Member of Parliament (MP) to take it as its development project for the community.

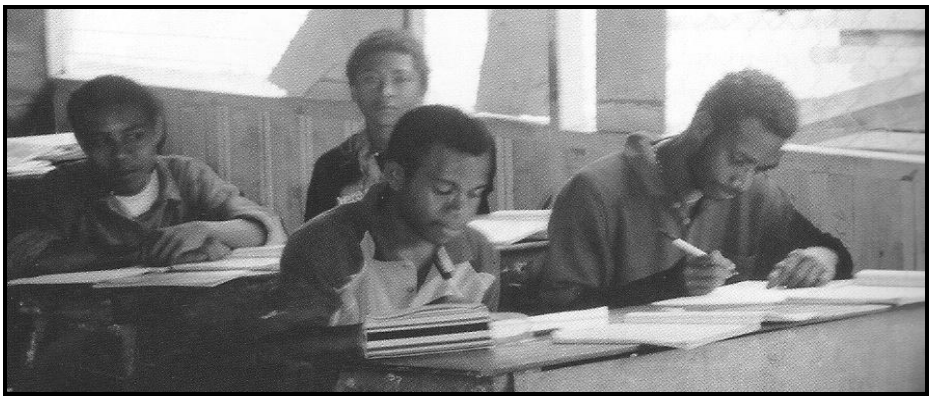


Community improvement needs can be identified from the;

- General community
- Schools
- Your church or other interest groups
- Nearest health centre

Well, general community needs may include some work to be done on the road sides or the local market stall building or maintenance or even cleaning the market place. Streets or villages where people live require regular cleaning. This is a major community need. Many streets and villages are always dirty with tins, plastic bags, papers and metal pieces.

Communities need to organise regular clean-up.



Education is important to all communities.
Source: Making a Living – Grade 07

Schools and Health/clinics are important community services besides roads and bridges. They need the attention and care of the community members for the safety of the workers and the assets. The community members need to think about what they can do to the existing government services so that they can get best services. People must put away negative attitudes towards government services. 'Free *Hand Out'*, compensation demands are examples of negative attitudes.

Activity 6.1: Complete the activities give below.

1. List three (3) community improvement tasks that can be done by the members for a better community living

_____

_____

2. Name two (2) positive and two (2) negative attitudes towards government services

_____

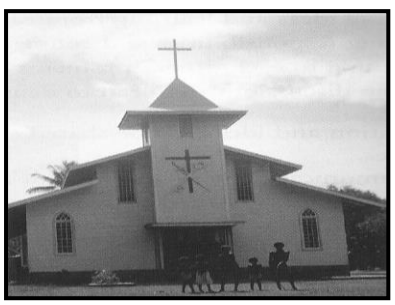
_____

3. Name two (2) other groups you belong to.

_____

Interest groups needs

The first and the most common interest group you belong to is a religious group. We do not mean ***cult groups*** that have widely developed in schools lately but genuine Christian church groups. Churches are important community interest groups. They exist to develop the spiritual wellbeing of the members. The members should make it their role to take care of their



A Church in a Local community
Source: Internet- 2014.

church buildings and grounds and the Pastor. More often people are more than willing to help where there are church needs.

Community meetings

Before you identify the needs of your community, you need to decide how you would like to get the community members involved first in a meeting and later in a project. Whole community meeting, group discussions, observations, one to one or family interviews, a tour of the whole community are methods that can be used to identify real need areas.



Village meeting
Source: Internet- 2013.

Organise a village meeting. From this meeting you can listen to the village people's views concerning their community needs. They will suggest what their needs are and what has to be done to improve their lifestyle. During the discussion you listen carefully to their views, take notes and list down their needs according to their importance.

Meetings are important gathering because people are able to discuss matters affecting them and the community. Many meetings help to pass on advice and information. During the meetings action plans can be done so that recommendations of the meetings can be carried out.

Everyone should be given opportunities to express his or her view. Community meetings bring together resources, ideas and support for community development projects. Interested individuals and group representatives can all contribute to discussion at meetings.

Plan and organise to get ideas from the public about community improvement projects. Develop and distribute questionnaires. Talk about ideas with others. If possible interview individuals or family groups to get their views. Ensure your behaviour promotes good public relations and uphold your good name and that of your community.

Bring out ideas for projects that address a need in your community. List all ideas. Include ideas that come from community members. Be aware of the words and actions you use to acknowledge, appreciate and respect others' views and opinions.

An added advantage is that through such meetings, the group can formally propose for major government development projects for the community, such as water supply, rural electrification, bridges, major road maintenance and classrooms that will require a lot of resources.

When planning a community project, discuss the time required to get to and from the project site and how you will transport tools, materials, equipment and people. After you have heard and taken note of community member's views, you respond. Make known to them what your plans and intentions are.

Manners in public meetings

In discussions, it is important that everyone feels encouraged to contribute without fear of being shamed or degraded. All ideas should be acknowledged, appreciated and respected without value-judgments being made. Recognize, respect and value individual differences. Get everyone involved in suggesting ideas for projects.

Acknowledging, Appreciating and Respecting Views and Opinions of others is very important in public relations. To acknowledge is to recognize or accept the view of another person.
For example;

- Henry has suggested that we clean graffiti from signboards and buildings.
- To appreciate is to welcome or value the view of another person.
- I thank Henry for his suggestion.
- To respect is to accept and not degrade or put down a view of another.
- We respect Henry's idea. How do others feel about cleaning graffiti?
- Does anyone have another suggestion?



Activity 6.2: Complete the activities give below.

1. List some good things that will happen as a result of the way the leader responded to Henry's suggestion in the meeting.

_____
_____
_____
_____
_____

2. How else can you collect information from the community?

_____
_____
_____
_____
_____

3. The table below consists of possible common community needs. You can add more to the list depending on your community's needs. Your list will depend on where you are located or your setting. Rural community's needs may not be the same as urban community needs.

GENERAL COMMUNITY IMPROVEMENT NEEDS

Focus Areas	**Rural**	**Urban**
School	1. Cut bush around the school boundary 2. Build a toilet for students 3. Build a teachers kitchen hut 4. Bring food for the teachers one day in a month	1. Clean the school grounds 2. Remove graffiti on buildings 3. Mend school gate or fence 4. Organise fundraising for school
Health & Hygiene	1. Clean whole village, beach front, build pit toilets with lids for each family	1. Clean street 2. Clean out main drainage 3. Organise regular street

	2. Organise food giving day to the health workers 3. Organise regular village meetings to do awareness on issues affecting the village and country, eg HIV&AIDS 4. Organise to dig deep pits for each family in the village to throw their non -biodegradable rubbish, eg tins 5. Build shelter and forms for mothers and children for well baby clinic- rural visits 6. Clean out the streams/rivers from which drinking water is taken from/ Build water wells for the community	meetings to do awareness on street matters and current issues, eg HIV & AIDS 4. Remove graffiti on power poles, signboards, private residents and tucker shops. 5. Clean out public toilets, police cells and prison camps, sports fields.
Roads and Bridges	1. Clean roads, straighten drainage, during wet seasons and remove blockage of drainage along the road 2. Cut grass along the roads 3. Fill up the pot holes with gravel 4. Erect street signs in consultation with the police along the road (highways)	1. Clean along the roads with care. 2. Erect street signs in consultation with the police

Summary:



You have come to the end of Lesson 6. In this lesson you learnt that;

- Different methods can be used to identify community needs
- Community meetings are useful in addressing community needs
- Through successful meetings, community co-operative projects can be identified and organised for the good of the community
- You belong to a number of other interest groups in the community that also have their needs which can be identified through such group meetings.

NOW DO PRACTICE EXERCISE 6 0N THE NEXT PAGE



Practice Exercise 6

1. Write **'U'** for those community works that need **urgent** and immediate attention and **'D'** for work that can be **delayed** and attended to a little later. In one word phrase give a reason for your choice.

- _____ Dig and build pit toilets for each family in the community
- _____ Dig pits for no degradable waste disposal for each family
- _____ Clean the beachfront
- _____ Clean around the community
- _____ Clean the road
- _____ Build a market stall
- _____ Build a village court house
- _____ Clean along the road
- _____ Build a classroom for the elementary school
- _____Build forms under tree shades at the primary school for children to sit an enjoy their lunch
- _____Clean the local police cell

2. Copy and complete the table by describing the existing improvement needs of the interest groups - you and your family members belong to.

Identifying Group Needs

No	Interest Group	Need	Resources Available	Resources Needed
Example:	Church	Window curtains	- sewing machine and free labour - improvise the curtain rod using wool used to make bilum	- money to buy curtain materials
1				
2				
3				

CHECK YOUR WORK. ANSWERS AT THE END OF SUBSTRAND 2

Supplementary Information 9: Identifying Community Needs

What are community needs?

Community needs come in many forms. They can be goods or services that are mostly needed or wanted to enhance one's life in the community they reside. Different people have different needs in their lives. Individuals looking for business opportunities can find out what goods or services are needed or wanted and then can produce or invent a product that will be able to meet that need or want.

Below are some ideas that communities can use to identify their needs.

1. Mind Mapping

- Draw your plan (issue, root causes and effects on individuals and the community in that particular area).
- Consider the following questions;
    - What are the issues facing my community?
    - What are the roots causes of their problems?
    - What are the effects on individuals and the community at large?
- Brainstorm on project ideas.
- Evaluate and prioritize the project ideas.
- Focus on your top idea

2. Conduct a survey

- Ask young people what their greatest concerns are.
- Give them a list and have them rank their concerns.

3. Hold a community forum

- Have an open forum or meeting to share community problems and dreams.

4. Interview older people

- Ask older persons about the society changes, is the change so far good or bad, how can we improve or maintain this change and impact more people with it.
- What are the greatest fears in the community? What are they proud of in their area. (village, town or city)?

5. Three wishes

- Throughout the week, ask people what they would wish for (given unlimited power / resources) if they were granted three wishes for their community. Keep a list of the dreams people share.

6. Watch or read the current events

- What stories leave you feeling disturbed or unsettled? Cut out articles in the newspaper that makes you sad or angry.

7. Last place of holiday (Utopian towns)

- Think of all the different places you have been. What is your favorite location (village, town or island?) to visit? Why? How is that different from your village?

8**.** I have a dream

- Read Martin Luther King's well – known speech. Think about your own personal/ community dreams, and write them down somewhere on a piece of paper.

9. Group Goal

- Does your town have a set of goals? What about your school, organization or neighborhood?
- Research and find out what the groups around you are trying to do.

10. Look around you

- What special events are going on around town? What organizations, businesses and schools are really struggling to reach their goals, or keep up with society?

11. Ask the Law makers (legislators)

- Find the key issues at the forefront of the national agenda. What are the serious dangers that face our country and our world?

12. Sixty Minute Search

Get a street map of your community, divide up the territory, and have group members search their areas for needed improvements. Mark the "hot spots" on each map and discuss area needs.

These are just some ideas of community needs assessment that can be used to make a difference in one's life. The need to change must come from within, this willingness is all that is needed to make a change.

END OF SUPPLEMENTARY READING 9

Supplementary Information 10: Community Needs

1. Community Needs

What are community needs? Firstly, let us define the word community, a community is a group of people who live together in an area, may speak the same language or work for the same department or company. In other words, there is something common about them and it holds or they identify themselves by it.
A need is something that this group must have in-order to survive. The basic needs in a community are food, shelter, air and water.
A community must have a clean and safe water to drink and cook their food. Also they need balanced and nutritious food in-order to live, clean and safe air to breathe and safe homes to stay and live. Communities need a healthy environment in-order to live happily and safely. Some of these things the community are able to provide for themselves, however, there are other things that are provided by nature. They just have to carefully and sustainability use them. These are essentials for their daily living.
The air, water, sunshine are all provided free by nature but must be looked after and cared for by the communities. A pollution free environment will provide a healthy environment, food plus beautiful and clean homes to live.
Communities need to make gardens for their food, plant flowers and beautify the homes and make them really pleasant place to live.

2. Opportunities

What are opportunities?

Opportunities are favourable situations or times for doing something worthwhile. It may be career opening, job or business opportunity in the community for one to pursue.
Our country, Papua New Guinea is young and brings a lot of opportunities for communities to engage and participate in. Our children need to go to school and get an education. The skills and knowledge acquired will enable them to obtain jobs or employment for a much better living.
Young people especially must learn to;

- Use local material to use and make products to enhance their standard of living
- Live and build health relationship within their communities and learn to live harmoniously
- Build new relationships with other countries
- Develop new skills and talents in sports

3. Importance of teamwork

Teamwork is very vital and important in the communities (school, local market, village and street). As they progress in their smaller groups these impacts will encourage and lift the other communities of Papua New Guinea to work as a team in small or big activities.
People in the communities need to take their roles for the benefit of their communities.
They must;

(a) share responsibilities among themselves
(b) work as a group and co-operate willingly so work can be done for the communities.

The major principles of teamwork include;

- sharing ideas and learning from each other
- listening to each other's challenges and come to an understanding and compromise
- group discussions and

4. The School Environment: Needs and Opportunities

Neatly arranged flowerbeds in the gardens with clean cut lawns plus orderly built houses are very pleasing to the eye. These are some things that communities boast about in their schools or surroundings. They portray the community togetherness spirit of the area.

Despite the location of your school, whether rural or urban, schools have problems and needs. They can be;

- physical needs such as maintenance to buildings, equipment, furniture and tools.
- environment needs such as keeping the school grounds, flower beds, lawns short and footpaths neat and tidy.
- economic needs such as school fees and project fees. Government subsidies are enough and paid on time for the schools to use for their needs.

All these needs must be meet by everyone (teachers, guardians, parents and students), otherwise the school will not be able to function well.

The school community (teachers, guardians, parents and students) should address some of these needs by way of community effort such as;

- fund raising activities such as open days, fetes, bazaar, talent shows and Beauty Quests
- community or development days to help keep the environment problems of school buildings and ground under control
- contact local businesses, local member of Parliament, and charities to fund specific projects like the library building, books, computers, plus other resources etc.

END OF SUPPLEMENTARY READING 10

Lesson 7: Planning a Community Cooperative Project



Introduction:

Welcome to Lesson 7 of Substrand 2. In the last lesson, you learnt about various methods such as interviews family visits, village meetings and using to identify community needs. Your focus was mainly on village or group meetings. In this lesson you learn how to plan a community cooperative project.



Your Aims:

- Discuss how to develop a simple plan for a community project to address a community need that was identified
- Discuss how resources such as time, skills and labour would be organised for use in carrying out the project.

Selecting and planning a project

Planning needs a lot of decisions to be made regarding the community's improvement. These decisions will guide the people planning and involved in the project.

There are many community needs. However, you cannot possibly meet all of them at one time. No community will have all the answers for all their needs at once. We need to carefully and critically look at each need identified and then select the ones that need urgent attention. This means those selected community needs. If not met quickly enough, the community will suffer a great deal when its condition deteriorates. The situation must get urgent attention. Importantly, there must be resources available to carry out any selected community project.
For example; the news reaches a certain community in the Central Province that **'cholera'** the deadly disease has been diagnosed in one patient from the community at the nearest health centre. There is a need for the people in that community to quickly meet and decide what to do in order to save the community.



Activity 7.1: Complete the activities give below.

1. List three (3) community needs in your community that you think should be met immediately through community projects.

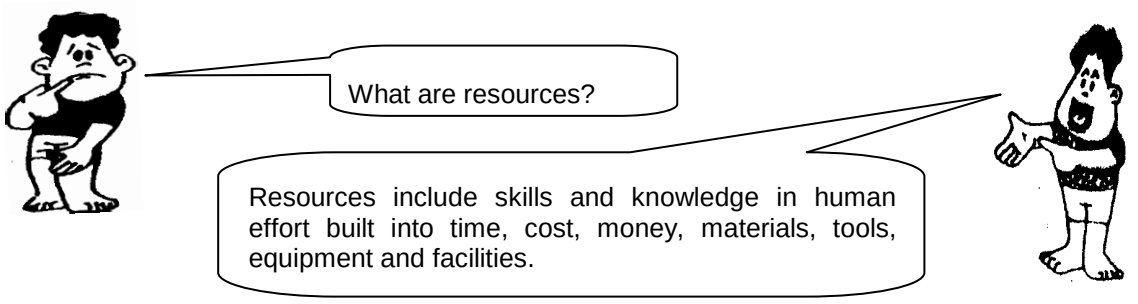
_____
_____

2. List three (3) community needs in your community that can be delayed or met later.

_____
_____
_____

Resources

Many factors need to be considered when planning an identified community project.



Many school or community projects maybe suggested. The goal of a project can only be completed if resources are available. Ask yourself these questions:

- How many people are available and willing to do the work?
- Who is going to take charge of which activity
- At what time will work be done on the project?
- What costs are involved? Where will the money come from?
- What materials are needed? Do we have them? If not, where can we get them?
- What equipment and tools are needed? Do we have them? If not, where can we get them?
- What facilities (water, power, transport) are required? Are they available?



Activity 7.2: Complete the activities give below.

Look at activity 7.1 above. You made a list of community needs that must be taken care of immediately. Now select one from that list and make a list of the resources that will be needed to carry out that project.

_____

_____

Location

Location needs to be considered in selecting your project. Location refers to the placing of things in a community. Understanding where different things are located in the community is helpful for the community members when planning a community project.

Projects in school have an advantage because you are at school. However, if your project aims to provide a service to the wider community, to work together and build good public relations with the community, then other factors must be considered. Time and transport become problem when a project site is some distance from where project team members live. When planning a community project, discuss the time required to get to and from the project site and how you will transport tools, materials equipment and people to and from the project site. Do not forget your aim to do your project with as little or no cost as possible. This is called being economical or wise.

New words

There are number of new terms used in this section that needs to be defined. Let us find out what they mean before continuing. Base definitions are taken from Microsoft Encarta, 2008. They have been changed a little to suit our need and purpose here.

Terms	Meaning
Viability	Practical or worthwhile; able to do or worth doing something
Feasibility Study	A preliminary study done to assess whether a planned project is likely to be practical and successful and to estimate its cost
SWOT Analysis	Analysis is a general term that refers to systems study of the nature or cause of something. **SWOT** stands for **S**trengths, **W**eaknesses, **O**pportunities and **T**hreats.
Feasible Capable	Feasible –able to achieve or put into effect Capable **–** able to do something

SWOT Analysis is a method or procedure usually used by businesses to examine their **Strengths**, **Weaknesses**, **Opportunities** and their **Threats** in business. It helps them to find out how well they are doing and their position or place in the competitive business environment. A businessman is guided by a SWOT analysis report to make better business decisions.

We need to do a **feasibility study** to decide whether or not a project is viable, practical, possible, feasible, worthwhile and within our capability. There is little point in planning to repair buildings or improve a water supply if you **do not** have the ability or resources. Carry out a **SWOT** analysis. In this you will identify the **Strengths, Weaknesses, Opportunities** and **Threats** of the proposed project.

A Church Maintenance Project Plan

Purpose: To do maintenance to the local church building by members of the church.

Tasks: Re-painting the walls, patching the cement floor, mending the leaking iron roof and mending the seats.

Resources: Little money from the church to purchase only the main/basic items. All the other resources are to be provided by the members.

SPECIFIC TASKS OF THE PROJECT	RESOURCES REQUIRED	ESTIMATED TIME	ESTIMATED COST
1. Repainting the interior of the church walls Length: (10 x3) + (10 x 3m) Width: (6 x 3) + (6 x 3m)	paints, painting brushes, cleaning agents, rags, old newspapers and cardboards, and 8 helpers	2 days a week for 2 weeks	K 400 (cost of paint only)
2. Patching the cracked cement floor (8 different patches)	Cement bags, gravel, water, drums for mixing, shovels, level, mullet, 5 people	2 days in 1 Week	K300 (cost of cement bags only)
3. Mending the leaking iron roof	Metal Sealant & pump, a person	1 day	K150 (cost of sealant only)
4. Mending some 24 seats (form)	Local wood/sewn timber, hammer, nails, sand paper, paint, plane and 5 people	2 days a week in two weeks	K200 (cost of timber & nails only)

SWOT Analysis

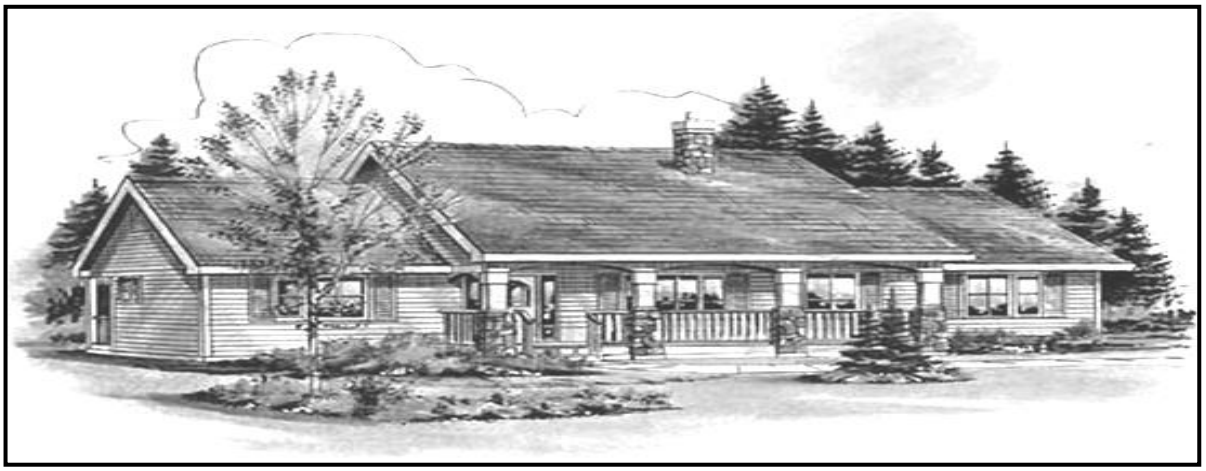
1. Strengths- Members of the church are willing to support by giving their time and resources. There are four multi-skilled handy man who are willing to help for free
2. Weaknesses – gravel and water to be collected from a distant river. To buy the materials, the nearest town is K20.00 return bus fare.
3. Opportunities - While the old man still have their strength and are still alive, they can teach other local youths who want to learn handy man's skills while doing the job
4. Threats - The church has not enough money. All the four skilled men are old.

The purposes for both the Feasibility Study and the SWOT Analysis are the same. They provide information and this information is used to work out the viability of the community projects.

Repairing a house or building requires careful planning and thinking ahead. An experienced carpenter or a builder can provide useful information and ideas when doing any type of repair. Good repairs need time, money and skilled people. Good repairs improve the condition of the house, making it more comfortable and safe to live in.

Observing existing house plans for repair work

What are house plans? Have you seen any house or building plans? A house plan is a drawing of what the completed house will look like. It shows the location of bedrooms, toilet, kitchen, doors and windows. Builders and carpenters use a plan to help them think ahead about how they will repair any damage to a building. Minor or small repairs may not need a detailed house plan. Big repairs and renovations (making an old house like new again) may need an architect. Architects draw and design house plans. Builders use house plans to calculate costs, and they follow the house plan when construction starts.



The actual house
Source: Internet-2013.



The plan of the house above.
Source: Internet- 2013.

Measuring and costing

Planning includes measuring the part to be replaced or fixed. Accurate measurement is very important to help you work out how much material is needed. What measuring tools should you use? Planning also includes choosing the material/s needed. When repairing an older building, it may be difficult to get the same kinds of materials. Some materials may no longer be available, so there is a need to choose the best alternative.

Availability of the required materials will also need to be checked. Out-of-town places usually order their materials weeks or months before they are needed, because the suppliers may have to organize transport for the delivery of orders. To buy smaller quantities of supplies by individuals, they bring with them enough money and purchase straight away what they need.
If you live near an urban centre or when you go to town, visit a hardware store. You will be surprised to see the variety of building materials available. Check out what you need and the prices as well.

Planning also includes calculating the costs. When you have worked out the job to be done and have chosen the materials to be used, calculate the approximate cost of the repair. Using a table like the one below, prepare a list of the materials and their costs as shown below. The first one has been done for you as an example.

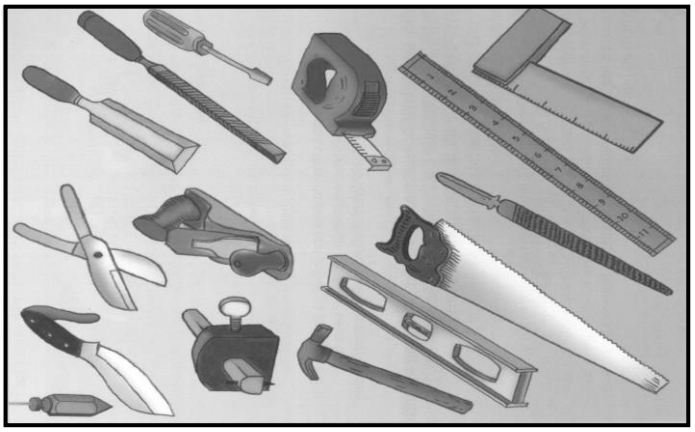
CALCULATING COSTS OF MATERIALS NEEDED TO COMPLETE A REPAIR

Area of the building to be repaired	**Materials needed**	**Amount needed**	**Approximate costs**
Example; Front wall – 2 holes measuring – 30 x 20 cm	'V' cream nails 50cm x 30cm	50cm x 30cm 16 nails – 3cm long	K5.00 K0.60
(1)			
(2)			

The careful preparation of a detailed project plan presents a great opportunity to consider all aspects of the project. This helps to decide how much money, labour

and other resources are needed to complete the project. A project plan can help to avoid starting a project that is bound to fail. All these can be done on paper without the expense of the trial and error method in the real world

Planning also involves collecting suitable tools before starting any repair to ensure that the job is done satisfactorily and on time. Planning includes calculating the costs. When you have worked out the job to be done and have identified the materials to be used, calculate the approximate cost of the repair. Prepare a separate list of material and their costs as shown below. Copy this into your workbook.



Tools Needed for Repair & Maintenance.
Source: Making a living- Grade -07.

Summary:



You have come to the end of Lesson 7. In this lesson you learnt that;

- The importance of planning community projects
- Careful preparation of a detailed project plan presents a great opportunity for the project to be considered.
- Panning helps to decide how much money, labour and other resources that are needed to complete the project
- Planning can be done on paper without the expense of the trial and error method in the real world.

NOW DO PRACTICE EXERCISE 7 0N THE NEXT PAGE



Practice Exercise 7

1. Describe your involvement in a community/group work. Write brief answers to these questions in you work book.

(a) Name a possible Community Improvement Project

_____

(b) What exactly is the improvement activity? Describe the kind of work that needs to be done for this community improvement project

_____

(c) Describe how you will be involved?

_____

(d) Describe the membership of the team. Remember this is a team work activity. How many people (man, women youth, and children) will be involved?

_____

(e) Do you and the team members have the necessary skills and knowledge to carry out that identified task? Find out and specify who will do what in the project.

_____

(f) What resources do you have and what do you need? Check out and specify in detail.

_____

(g) When the project is finished or still being worked on, how will it help the team members and the group as a whole?

_____

(h) Do you think this project will be successful? If so, why? If not, why?

_____

2. Cholera is spread by generally dirty conditions in the use and care of the kitchen, in food and water, in the use and care of latrine/toilets. Cholera is contagious, meaning it can be passed from one person to another very easily.

3. Imagine your community has reported its first case of cholera presence. Suggest five (5) things that a concerned community will decide to do as a community to help themselves. They have to be community based activities.

(a)_____
(b)_____
(c)_____
(d)_____
(e)_____

CHECK YOUR WORK. ANSWERS AT THE END OF STRAND 2

Supplementary Information 11: Planning a Community Co Operative Project

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Guide to Planning Your Community-Based Project

This guide will help you capture the things you will want to consider in planning your project. The aim is to gather data, analyse information, and decide on an action plan to help you succeed. Use this as a planning guide and add other parts as they arise.

1. Project Name:

Firstly give your project a working title that reflects the spirit of your project

2. Vision:

State your vision for your project using four or five descriptive sentences. Be as complete and specific as you can. (Remember also that a Vision statement is a way of "getting there", and therefore must be open to change, especially if there" changes!)

3. Time Frame: (estimated)

Estimate the length of development, working, and evaluation time.

4. Action Chart:

On the following chart, answer the questions on the left. Then list on the right specific things to do or check into related to that question. If you don't yet know the answer to a specific question, your action item will be to get more information.

Questions & Answers	**Your Actions**
Community Needs	**Analyse**
What do you currently know about your client group and their need for this service?	Example; put the items in the sample Needs Analysis in order of their importance
What are some of the characteristics of your client group that you will need to plan for?	Example; review the sample Survey Questions
What additional research do you feel you need to do to help define aspects of your project?	Example; determine the shared values of the people who would be involved in and/or affected by the project

Community Partners	**Network with…**
Who should you be checking with to help further define your project?	Example; colleagues, community organizations, other potential users
Who will implement the project and keep it running?	Example; other groups that might help support the project on an ongoing basis
Project Financing	**Assess…**
What will your project cost?	
What sources of project funding are available?	
What "in-kind" (That is volunteer, shared, or equivalent to financing) services and materials can you obtain or make use of?	

Project Development	**Check…**
What kinds of expertise will you need?	
What community supports will you need?	
What computer hardware will you need?	
What computer software will you need?	
Are there any other technological requirements?	
What physical resources will you need?	
What user policies might need to be put in place?(Example; user fees and access)	

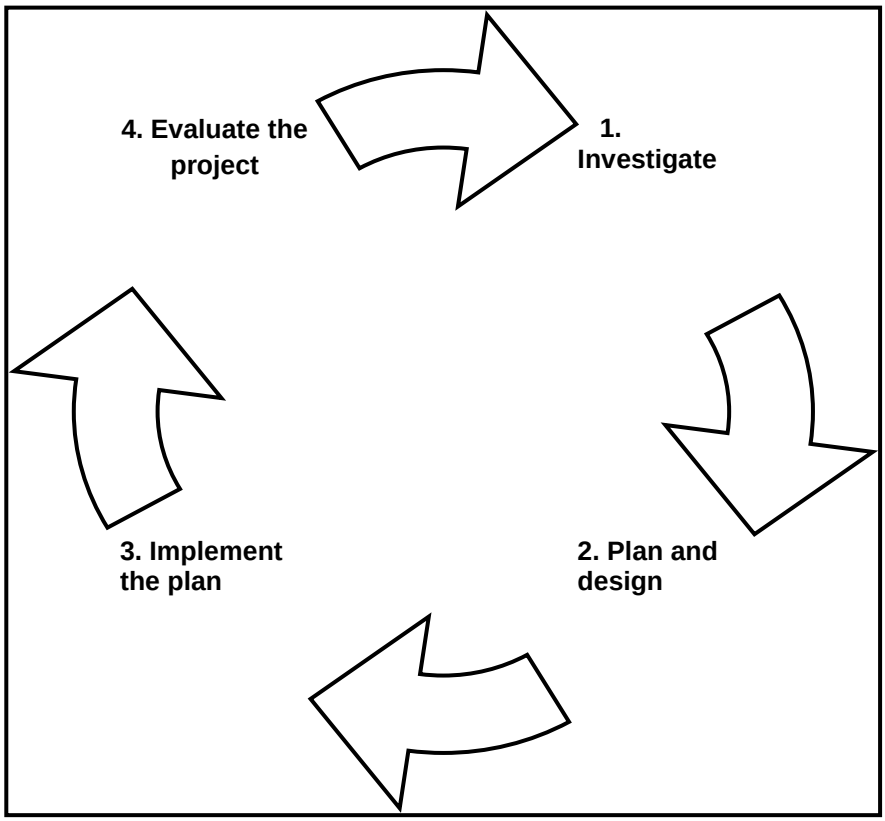
Now review your Answers and Action items and list:	
In what ways can you develop and launch your project?	To do:

Project Implementation	**Determine…**
What supports will your client group need to make use of your services?	
How will you advertise your project?	
How will you measure your success?	
What are potential barriers to the successful implementation of your project?	Example; list strategies to overcome the barriers

Strategies and Procedures

When communities are planning any project, they must take the following steps.

COMMUNITY PROJECT PROCEDURES



Source: Internet-2014

1. Investigate

Firstly, the communities must investigate and find out the community needs and also find out how they can be met. Such information can be collected by:

- Sending out questionnaires or simply asking the members of the community orally.
- A survey can be conducted
- Making the community vote for five (5) projects they would very much like to have in their community. They must put them in an order of priority.

2. Plan and design

When the community has finally decided on the project they need to make a plan of action. They may group themselves into clan groups, number of houses, or sections of their village, or skill areas and organise themselves to work. The team leader gives each group a particular task to do. At this stage, the community must be 100% sure on what the project is and how they are going to achieve it. They must be able to;

- Design the object or project (Example; community hall, fence, aid post, playing field, maintaining the church building, toilets and school improvements) and this includes all the tools and resources needed to complete all the work required on the project.
- Have a plan set, step by step on how the work is to be done and eventually completed. This time line will give an estimation on the project beginning and completion.

3. Implement the plan

The group must work consistently and co-operatively in order to complete this project. Each group must have a leader to oversee all its activities and will;

- Give every member a task
- Make sure that work is progressing well according to the time set
- Make sure that time and resources are used productively
- Address problems as they occur.

4. Evaluate the project

After the project has been completed, it is important to evaluate it. Areas such as;

- Clearness of plans and procedures of the project
- Did the community work as a team
- How reasonable was the project timing
- What problems were encountered during the project operation?
- Can this project be extended or developed further
- Write a full report on the processes involved in the project
- If money was used, write a full financial report on the project.

The above procedure if followed closely by communities will ensure that their projects run smoothly until they are completed. Then any other projects the community has as needs will be done using this same manner.

END OF SUPPLEMENTARY READING 11

Supplementary Information12: Steps for Planning a Health Promotion Project

In this section, we various steps of developing a plan and preparing for a health promotion project.

Planning requires a critical analysis of the problem to be addressed. Problem analysis is important for developing a goal and objectives for the project that are realistic and achievable. Once the goal and objectives are set, strategies for achieving them can be determined. Resources needed in the project, and ways to obtain them, are then identified. The planning process also includes deciding how the project will be managed, sustained and evaluated.

Major steps in planning, sustaining and evaluating a health promotion project

1. Identify the issues or health problems in the community
2. Prioritise the issues or health problems to identify the one that the project will address
3. Identify risk factors and set the goal for the project
4. Determine contributing factors and state objectives for the project
5. Determine what the strategies will be
6. Develop the action plan for the project. DO IT!
7. Sustain the project or keep the project (or some parts of it) going
8. Evaluate the project

Step 1: Identify the issues or health problems in the community

Needs assessment

Clarifying need is an essential part of deciding what issue or problem the project will address. The term 'needs assessment' is used to describe a process of collecting information that will give a good indication of the priority needs of a community. It provides an opportunity for the community to become involved in the planning from the beginning. It helps with allocating resources and making decisions about where to start with health promotion work Classifying needs

A definition of 'needs'

Health needs are understood as being those states, conditions or factors in the community that, if absent, will prevent people from achieving complete physical, mental and social health. This would include such things as minimum provision of basic health services and information, a safe physical environment, good food and housing, productive work and activity, and a network of emotionally supportive and stimulating relationships.

When undertaking a needs assessment, it is important to consider that needs will be thought of differently, depending on whom you consult. Needs are sometimes classified as:

1. normative needs
2. felt needs
3. expressed needs
4. comparative needs

1. Normative needs

Normative needs are needs based on the opinion and experience of 'experts' according to current research and findings. For example: Health experts consider that there is no safe level of tobacco smoking. Therefore, a primary health care provider may strongly advise a client who is a smoker to quit smoking.

2. Felt needs

Felt needs are those things that groups or individuals say they want, or the problems that they think need addressing. For example:

- many women from a community say that people are drinking at the pub too early in the morning. The community may decide to address this issue by having the pub open later in the morning.
- the community is demanding more fruit and vegetables in the store. The store manager may decide to look for a reliable and cheaper source of fruit and vegetables to satisfy the demand.

3. Expressed needs

Expressed needs are shown by the number of people using community facilities and services. For example:

- waiting lists for childcare may express a need for more childcare centres
- very few people using the community sporting facilities may express a need for alternative activities

4. Comparative needs

Comparative needs are shown by comparing what is available to one group of people with what is available to another group. For example:

- calls for the Council Offices in community X to have a No Smoking Policy because the Council Offices in Community Y have this policy
- community A says it should have a basketball court because Community B has one

How to find out about community needs

Analyse a community profile
Use a variety of research methods detailed in 'Information Gathering Tools' later in the chapter

An example of a needs assessment by survey

In a New Town community, a community health centre team decided to do a need assessment. They were keen to know what community residents thought were the major issues that they could all work on together. The health team decided to ask the following questions:

- What makes people worried in this place?
- What can we do together to make things better in this place?

A Motuan Health Worker and a nurse went together to interview family groups. The Motuan Health Worker asked the questions in the language of the family and translated the answers to the nurse who wrote them down in English. The health team analysed the data and fed the results back to the community for discussion.

Sharing information from the needs assessment

Sharing the results of the needs assessment with the community is a key part of the planning process. This process will:

- raise community awareness about the issues and possible underlying causes
- stimulate discussion about ways to address the issues · get the
- community more involved in planning and decision-making about the project

Some of the information gathered during the needs assessment may be able to be used as 'baseline data'. Baseline data describe the situation or condition at the time the project or intervention starts. Data collected later during the evaluation is then compared against the baseline data to see the effect of the project.

END OF SUPPLEMENTARY READING 12

Supplementary Information 13: A Health Promotion Project

Below is an article from a daily paper on Health Promotion Project been initiated by a senior public servant for its members targeting mainly lifestyle diseases.

Read it so similar projects can be undertaken in your community to help them.

EMC medical check-up target lifestyle diseases

Members of the Commission's Executive Management underwent a basic check last month by Convenience Medical Services, a locally owned medical company.

There were blood and eye tests done, ECG readings were taken to check the heart functions and weight and height for obesity.

The program was the first of its kind initiated by Convenience Medical Services targeting lifestyle diseases and bringing basic medical service to the doorstep of hardworking and busy public servants who do not have time to visit the nearest clinic to check their general health status.

The general medical check for the Ela Medical Centre (EMC) members was organised by the Health & Safety Officer Pouna Renagi of the Human Resource division.

"As public servants we are used to coming to work and going home to eat and sleep and the routine is the same every day." We do not have time to go to clinics to find out the status of our general health condition unless we are sick.

"Many of our senior staff and executives have passed on over the years due to lifestyle diseases. I have decided to organise this program with Convenience Medical Services to basically check the general status of our top management and if funding becomes available in the near future, we can consider organising the same for the others." said Renagi and thanked the company for a very good initiative in not only targeting lifestyle diseases but also bringing medical services to the doorstep of hard working public servants of the Commission. EMS members who undertook the medical check expressed gratitude for this service and thanked Convenience Medical Services for conducting the tests.

According to a director of the company, the EMC members will personally receive their tests results as soon as all checks are done.

END OF SUPPLEMENTARY READING 13

Lesson 8: Evaluating a Community Cooperative Project



Introduction:

Welcome to Lesson 8 of Substrand 2. In the last lesson you learned about aspects of planning a community project, especially a maintenance project. In this lesson you will learn to evaluate a community cooperative project.



Your Aims:

- Discuss how to carry out the planned project
- Discuss how to evaluate that planned project

Let us relook at some things we did in the last lesson to help us move into this lesson smoothly. In the last lesson, we learned about planning a community project. Our focus was on the planning of a church maintenance project. We learned that it is important to assess our resources – by asking ourselves – What do we have? What do we need? Then we produce a detailed plan including estimated measurements, quantities, costs of resources needed for the project. Plans for other projects can be done in a similar way.

Carrying out a planned project

The actual work may not go the way it was meant in the plan. This is likely to happen because planning is one thing but the actual carrying out of the plan is another.
This lesson outlines in a simple way how you can assess the performance of the project and suggest changes to bring improvements in other community projects.

Repair and maintenance of a building is not the only kind of community project that can be undertaken. There are many others like the ones identified in lesson 6. The following are important or necessary points to remember for community cooperative projects.

1. The identified project is an immediate need for the community to give it a priority. This is the collective view of the members of the community.
2. Although many aspects of this is part of the planning process, assess the viability of the project by carrying out a simple feasibility study to assess the strengths, weaknesses, opportunities and the threats before you do a detail plan of the project.
3. If there are more weaknesses and threats drop it until later. However, if there are more strengths and opportunities, put together a detail plan to carry out the project. Refer to lesson 7 for more information on planning.
4. Then carry out the project.

When the repair and maintenance is completed

It is always important to inspect and check the different parts of the house for any changes or sign of damage. A checklist is important so you can record these for improvements to be made later.

What is project evaluation?

To evaluate means to assess or check it out. A project evaluation is making a careful assessment of the current or completed project to see if it was done according to plans in place or expectations in mind.

Evaluating a project is about looking carefully at what is happening in the project and making a judgement about its value, worth or benefit (see the word value' in evaluate). Evaluation is important because it can tell us:

- how the project is going
- what effect it is having
- what changes we need to make to improve it

Evaluation is a way in which activities carried out are inspected and true comments and opinions are given about how it has operated. Suggestions made that require changes that are positive for the project must be actioned.

Why evaluate

Some reasons to evaluate include:
- to share experiences
- to justify doing the project
- to see if the effort is worth it
- to justify the resources used
- to see if the project is working
- to know what changes to make
- to see if it achieved what was planned

Who is the evaluation for?

Because evaluation is about making a judgement about the value of the project, people's own values, knowledge, responsibilities and accountabilities will affect the results they want and expect from it. Therefore, it is very important that everyone with an interest in the project (a 'stakeholder') is clear about what the project is for - a result that comes from good planning.

Stakeholders in evaluation

The stake holders are those who have particular interest in an activity because they either give support through financially or in time through ideas, skills and knowledge or in other material resources. The beneficiaries are also stakeholders. Beneficiaries refer to people who will get something good from a business activity. In this case the stakeholders are the community members and the very working team members themselves.

The community

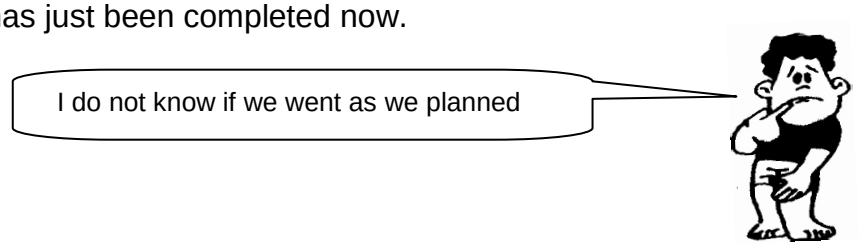
The community will be expecting the project team to:
- give people the information
- make sure the project provides a good chance for change
- ensure the project is meeting the agreed community needs
- check that the project processes and activities are appropriate

The project team itself

The project team will want to evaluate the project to:

- show they have followed processes and procedures
- get feedback on its work
- confirm that it meets community needs
- know that community members participated
- see that the project is going according to plan
- know whether it achieved its goal and objectives

Sometimes it is wise to keep a simple check list throughout the work period. This can be used to compile the report. Let us now look at our project plan in the last lesson. We planned to do maintenance to a local church building. Let us believe that the project has just been completed now.



The following is a report for the church maintenance project. Notice that the actual project did not go exactly as it was planned. This is true for all plans. However, an important part of process is the evaluation component which helps to provide opportunities for improvements with similar activities in the future. In real practice you do not delay evaluation until the activity is complete. It might be too late by then if a mistake has been made. A regular evaluation must be in the plan to help direct the progress of the project.

Church Maintenance Project Evaluation Report

Tasks	**Materials Needed**		**Estimated Time**		**Estimated Cost**		**Comments**
	Plan	**Actual**	**Plan**	**Actual**	**Plan**	**Actual**	
1. Repainting the interior of the church walls Length: (10 x3) + (10 x 3m) Width: (6 x 3) + (6 x 3m)	paints, painters, painting brushes, cleaning agents, rags, old newspapers and cardboards, 2 painters and 8 helpers	Paint and some brushes bought Only 4 people worked on it	2 days a week for 2 weeks	3 days a week for 4 weeks	K400 (cost of paint only)	K500	Completed
2. Patching the cracked cement floor (8 different patches)	Cement bags, gravel, water, drums for mixing, shovels, level, mullet, 5 people	Gravel bought Only 2 people worked	2 days in 1 Week	5 days in 1 week	K300 (cost of cement bags only)	K200	Completed Members not cooperative to get sand Received discount through a member

3. Mending the leaking iron roof	Metal Sealant & pump, a person	Purchased at discount	1 day	2 days	K150.00 (cost of sealant only)	K130	Completed Discovered more holes in the roof Discount received
4. Mending some 24 seats (form)	Local wood/sewn timber, hammer, nails, sand paper, paint, plane and 5 people	All bought Only 3 people worked	2 days a week for two weeks	2days a week for 3 weeks	K200 (cost of timber & nails only)	K300	Completed More seats were mend, 5new ones made
Recommendations:							

Summary:



You have come to the end of Lesson 8. In this lesson you learnt that;

- Evaluation means to assess or check.
- It plays a very important part in the successful completion of any projects.
- Those who are part of the project must give their views of the project which must be true in all aspect and the project to be successful.

NOW DO PRACTICE EXERCISE 8 0N THE NEXT PAGE



Practice Exercise 8

1. Write three (3) different words that mean the same as evaluation.
(a)_____
(b)_____
(c)_____

2. Write down two (2) purposes of project evaluation.

_____

_____

3. What is the purpose of the recommendations of a project report?

_____

_____

4. Who will benefit from the project evaluation? List three (3) only.

_____

_____

_____

CHECK YOUR WORK. ANSWERS AT THE END OF SUBSTRAND 2

Supplementary Information 14: Evaluating a Community Project

Ten Steps towards Performing a Successful Community Service Project

Community service can play an important role in communities. A community service project can take many forms depending on your community choice or need. Whatever is decided, the community members benefit. Following are some hints in making your community service project both successful and fun.

A Planning Guide for Club Leaders

1. Firstly determine what is needed in your community.
   - Ask club members and families.
   - Ask other community groups.
   - Talk with community officials.
   - Find out what types of projects have and have not been done in the past.

2. Secondly determine what types of activities your members have interest in and the abilities to do.
   - Consider the size of your club and ages of members.
   - Consider the skills possessed by club members and their families.

Determine how much time your club would like to devote to community service activities. (Would members rather do a long-term, ongoing community service project or a short-term one-time activity?

3. Next list all of the activities that have been suggested by the community

4. Next ask your club to rank the activities in order of importance and interest, based on what was considered in steps 1 and 2. Reach consensus or use a vote by majority rule to determine the activity your club will do. If this isn't practical (especially if your club is large), consider forming a committee to develop priorities. Then, the club can simply accept or vote on the committee's recommendations.

5. After your club has decided upon their community service project, develop a plan. Your members will learn organizational skills in developing such a plan. A plan doesn't have to be overly detailed and formal, but should include the following:

- overall goal
- time commitment
- budget
- equipment and supplies
- volunteers and duties
- evaluation
- tasks involved
- permission
- insurance
- risk management analysis
- publicity

6. Carry out the project as planned.

7. Make sure to document your club's efforts with photos, videotape, or written notes.

8. As you work on this project, monitor the activities taking place and make adjustments as needed. Especially when the project has been completed, allow time for your club to discuss the successes and short falls of the project and ideas for improvement. This adds value to the learning experience.

9. Develop a summary report of your club's experience when the project has been completed. Share it with media representative and the Extension staff. A scrapbook is a nice way to present the project's success. Include a written description, photos, and news clippings. Such activities might be assigned to the club reporter, secretary, vice-president, chair of the project or other club member.

10. Finally feel good about your club's contribution to the community and members' positive learning experience. Be sure to take time to process your club's experience. Do this by asking participants to share their thoughts and feelings as well as helping them to think about how they might relate this experience to other situations in the future. This is a part of the experiential learning process.

Other reminders

Remember that planning, conducting, and evaluating a community service project is a great opportunity for all the community members to learn by doing. Therefore, do encourage members to get involved in all phases of the project, including planning. Do not do it all for them.

Remember that they can learn from their mistakes as well as their successes.

The role of the club leader and other adults working with the club is to guide members in the right direction and provide needed support and encouragement.

Make It Fun

Role of a Club Community Service Project Coordinator

The role of the Club Community Service Project Coordinator is huge and sometimes tiring and involves tasks such as;

1. Purpose

(a) To assist club members in planning, conducting, and evaluating a club community service project.
(b) To assist with the processing of the experience with members as part of the overall experience.

2. Success Criteria

The successful completion of a club community service project where the members were actively involved in the planning, conducting, and evaluation of the activity.

3. Responsibilities

His or Her Responsibilities are,

- Assist club in doing a needs assessment to determine needs in community.
- Assist club in surveying members to determine interest in and abilities to use in conducting a community service project.

- Assist club in listing possible community service options and then in deciding which project to pursue.
- Assist club in developing a plan to conduct a community service activity. The plan might include the following:
- Identify exactly what will be done. Determine both the overall goal and the specific tasks involved. Remember the time frame for the project: dates/times for beginning and completion.
- Obtain necessary permission in advance.
- Facilitate the application, screening, and enrolment procedure for all new volunteers.
- Involve and supervise youth and adult volunteers to carry out needed functions.
- Develop a financial budget for the project. A decision to use club funds should be voted on by the membership. If not available from club funds, seek a community sponsor. Extension staff may know of sources of grants-in-aid for such projects, especially if you plan far enough in advance.
- Develop a risk management plan for the activity and review it with the club organizational leader.
- Obtain special event insurance and/or certificates of insurance if necessary.
- Obtain needed equipment or supplies.
- Determine how many people will be needed. What is the minimum required to do the job correctly and what is the optimum number? Be sure you have at least the minimum before proceeding!
- Ask members to volunteer for specific duties and get a commitment from them. Consider teaming up less experienced members with more experienced workers to maximize the learning experience.
- Encourage members to report progress on their assigned duties.
- Make safety a top priority.
- Alert mass media representatives and Extension staff concerning your plans. Publicize the efforts of your club and the project.
- Assist club in conducting community service project as planned. Monitor the activities taking place and make adjustments as needed.
- Assist club in documenting the club's efforts with photos, videotape, and written notes. Be sure to have media release forms signed by all participants.
- Assist club with publicity to share the project's success.
- Compile a written summary report for the club.
- Evaluate the experience with the club afterwards to discuss the successes and shortcomings as well as ideas for improvement or repetition. Use the experiential learning model to provide time for reflection by participants of the experience.

4. Target Dates

Depending on the size of the project, enough time should be given to complete and wrap up.

5. Club community service committee

The running of the clubs activities will be done by the Club volunteers whenever they are free. Setting up a timetable for the volunteers will help in a big way because everyone will take turns in working on the project. They can also see the challenges of the work too.

6. Training Opportunities

Number of training for the club members during the project can be made up to up skill these participants.

END OF SUPPLEMENTARY READING 14

ANSWERS TO

SUBSTRAND 2

PRACTICE EXERCISES

Answers to Practice Exercises 5 - 8

Practice exercise 5

1. What are the advantages of practicing the following interpersonal skills?

Behaviour

- Be a good listener
  Advantage: You are able to understand the views of others and this leads you to add your views on their idea

- Manage anger and conflict
  Advantage: You are able to create a peaceful and friendly working atmosphere. Others are able to freely interact with you.

- Communicate accurately
  Advantage: You are able to receive accurate answers which satisfy queries. The message send out meets its purpose for which it was send for.

- Demonstrate commitment
  Advantage: You are able to achieve targets and objectives of the job assigned. A lot of job is done in a short period of time. You will be counted on to complete tasks for the project or task given.

- Communicate clearly

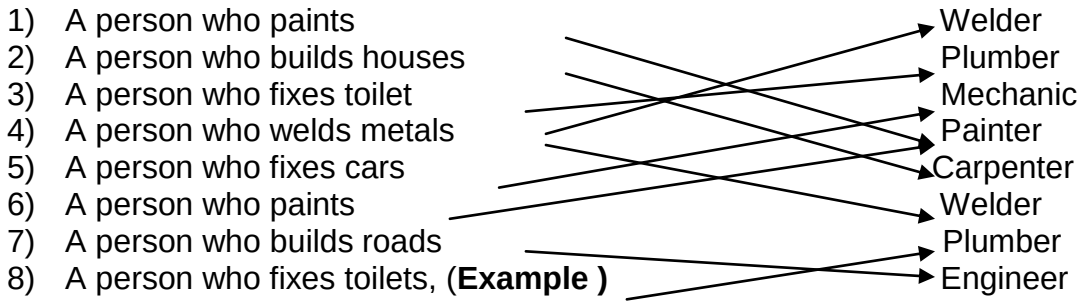
  Advantage: The message is heard and understood. The message sent out meets its purpose for which it was sent for.

- Encourage one another
  Advantage: Everyone will use their strength areas to contribute to the work. They will work with positive attitudes.

2. Discuss and list five positive attitudes and behaviour in building a good working relationship.

- *Honest, ethical, polite, courteous behavior.*
- *Respect for community property.*
- *Friendliness in greeting, talking and listening to community members.*
- *Developing ideas to improve some aspect of community life.*
- *Being prepared to work hard to help others and contribute to improving conditions in the community.*
- *Involvement in community activities.*
- *Cooperation in achieving results.*

3. Match the occupations below on the left with the trades on the right by ruling arrows.



Practice Exercise 6

1. Write **'U'** for those community works that need **urgent** or immediate attention and **'D'** for work that can be **delayed** and attended to a little later. In one word phrase give a reason for your choice.

   - **U**__Dig and build pit toilets for each family in the community
   - **U**__ Dig pits for no degradable waste disposal for each family
   - **U**__ Clean the beachfront
   - **U**__ Clean around the community
   - **U**__ Clean the road
   - **D**__ Build a market stall
   - **D**__ Build a village court house
   - **D**__ Clean along the road
   - **U**__ Build a classroom for the elementary school
   - **D**__Build forms under tree shades at the primary school for children to sit an enjoy their lunch
   - **D**__Clean the local police cell

2. Copy and complete the table by describing the existing improvement needs of an interest group yourself or your family members belong to.

No	Interest Group	Need	Resources Available	Resources Needed
Eg,	Church	Window curtains	Sewing machine and free labour improvise the curtain rod using wool used to make bilum	Money to buy curtain materials
Sample Answers				
1	*School*	*Toilet for students*	*Pandunas leaves* *Strong Narrow Sticks*	*Some big Posts* *Nails or bush ropes*
2	*Village*	*Clean roads, straighten drainage*	*A few Spades, bush knifes*	*More spades*
3	*Village*	*Build shelter and forms for mothers and children for well-baby clinic- rural visits*	*Nails, hammers, saws,*	*timbers, plywood*

Practice Exercise 7

1. Describe your involvement in a community/group work. Write brief answers to these questions in you work book.

SAMPLE ANSWER

(a) Name a possible community Improvement project
Village Cleaning Up Project

(b) What exactly is the improvement activity? Describe the kind of work that needs to be done for this community improvement project
- *Dig and build pit toilets for each family in the community*
- *Dig pits for non-degradable waste disposal for each family*
- *Clean around the community*

(c) How will you be involved? Describe it.
Contribute resources, labour, time and skills to the task

(d) Describe the membership of the team. Remember this is a team work activity. How many people (man, women youth, and children) will be involved?

All adults from each family especially the men and the male youths

(e) Do you and the team members have the necessary skills and knowledge to carry out that identified task? Find out and specify who will do what in the project.
Yes, the male all have the specified skills and knowledge to do the task.

All male will do the job.

(f) What resources do you have and what do you need? Check out and specify in detail.

Resources in hand	*Resources needed*
• *Pandunas leaves*	• *Hammer*
• *Strong Narrow Sticks*	• *Saw*
• *Big Posts*	• *Measuring tape*
• *bush ropes*	• *nails*

(g) When finished or even when you are still working on the project, how will the activity help the team members and the group as a whole?
The activity enables the team members to apply their knowledge and skills appropriately to help their community

(h) Do you think this project will be successful? If so, why? If not, why not?
It will be successful because it will make the community be a clean and better place to live

2. Cholera is spread by generally dirty conditions in the use and care of the kitchen, in food and water, in the use and care of latrine/toilets. Cholera is contagious, meaning it can be passed from one person to another very easily.

Imagine your community has reported its first case of cholera presence. Suggest 5 things that a concerned community will decide to do as a community to help themselves. They have to be community based activities.

SAMPLE ANSWER

(a) Dig pits for no degradable waste disposal for each
(b) Clean around the community
(c) Dig and build pit toilets for each family in the community
(d) Clean roads, straighten drainage, during wet seasons remove blockage of drainage along the road
(e) Run awareness of washing hands, and food preparation in clean conditions
(f) Invite health workers to give talks about the illness

Practice Exercise 8

1. Write three (3) different words that mean the same as evaluation
   a. check
   b. assess
   c. judge
2. Write down 2 purposes of project evaluation (any of these)
   - *to see if the project is working*
   - *to see if it achieved what was planned*
   - *to justify doing the project*
   - *to know what changes to make*
   - *to see if the effort is worth it*
   - *to justify the resources used*
   - *to share experiences*
3. What is the purpose of the recommendations of a project report?
   For further improvements
4. Who will benefit from the project evaluation? List only 3.
   The project team itself
   Stakeholders
   The community
   You and your family

SUBSTRAND 3

WISE CONSUMER

In this substrand, you will learn about:

- **Discuss goods and services for different types of needs and wants for different groups of people**
- **Identify organisations that provide goods and services**
- **Assess the value of goods and services**
- **Assess providers of goods and services that are in the**

SUBSTRAND 3: INTRODUCTION



Welcome to Substrand 3: Wise Consumer. In this Substrand, you will learn about evaluating goods and services. You will do this by identifying sources that produce goods and services within the community and hence, assess the value of their products in order to make better choices as a wise consumer.

This substrand consists of three lessons.

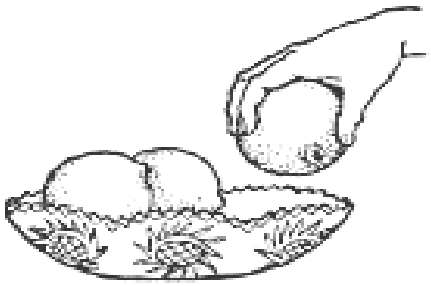
Lesson 9 is on goods and services for different types of needs and wants. It involves identifying different groups of people for the different types of needs and wants.

Lesson 10 is about sources of goods and services. It involves searching and identifying different organisations that provide goods and services.

Lesson 11 talks about selecting suitable goods and services to meet needs. It discusses how to assess the value of goods and services and their providers in the community in order to make choices to better satisfy their needs and wants as a wise consumer.



Read directions carefully
Source: Internet- 2014.



Choose goods carefully



Find Organisations that provides the best services

Lesson 9: Goods and Services for Needs and Wants



Introduction:

Welcome to Lesson 9 of Substrand 3. In this substrand, 3, you will learn about being a wise consumer. You have already learnt about being a wise consumer in one of your grade seven lessons. You learnt that as consumers you have rights and responsibilities. In this lesson you will learn about being a wise consumer and choosing the right type of goods and services that will satisfy your needs and wants.



Your Aims:

- Define and identify goods and services
- Define and identify needs and wants
- List and explain the reasons for the different needs and wants of different groups of people.

What are Goods and Services?

In order for people to make their lives easier and comfortable they need to consider the goods and service providers and whether or not they are satisfied with the quality of goods and services provided. Assessing or checking out such information makes people become wise consumers. Goods and service providers are people who provide goods and services as a business. That is, they exchange the goods and services for money. If you are involved in providing goods or services to people then what you are producing and selling must satisfy the needs and wants of your customers.

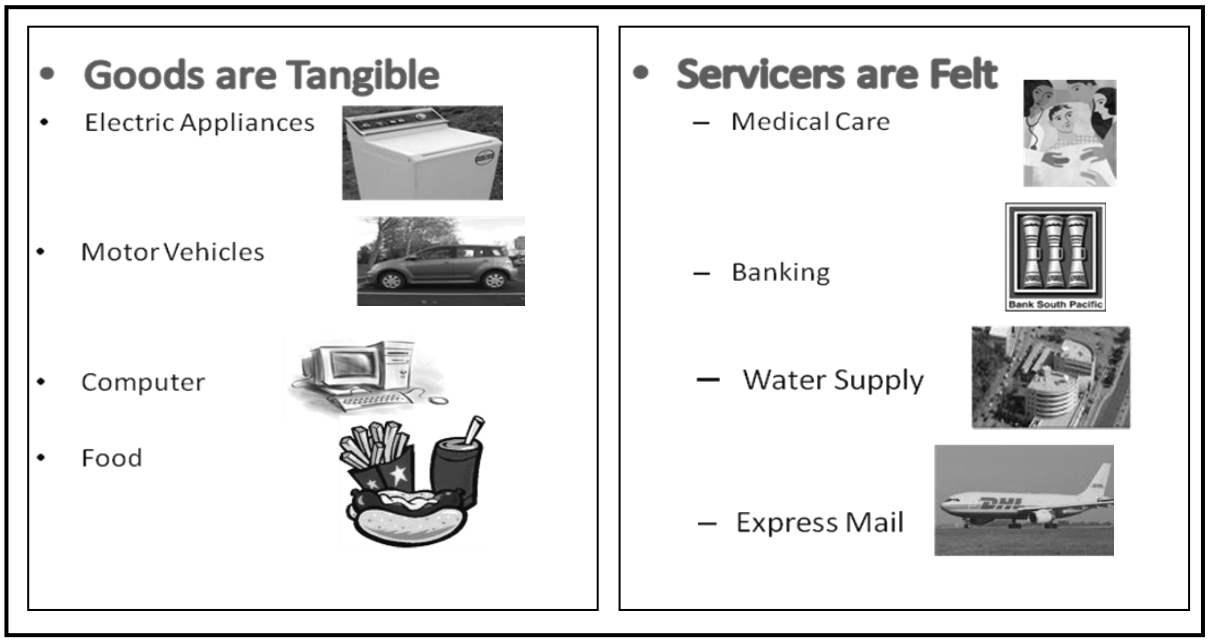
Let us recap or recall what we have learnt about goods and services.

Goods refer to things for sale or use that can be seen and touched. Services refer to jobs and business that provides something especially help for other people but do not produce tangible goods. For example, banking and insurance.

What then is tangible? Tangibles are the things that can be seen and touched. So goods are tangibles that are provided for people to consume. Consume means to use. That is, whether eating or using it like wearing it, sleeping on it, or siting on it.

The opposite of tangible is intangible which goes along with services. Intangible refers to things that cannot be seen or touched but they are felt. In other words, they are tasks that are performed for us by other people. A service is a help given to a consumer. These services or help are provided by people like doctors, engineers, lawyers, teachers, clerks, bus drivers, travel agents, shop assistants, accountants, security guards and housekeepers. Notice that there is nothing manufactured or made by these groups of people mentioned, they are only giving their help to satisfy people's needs and wants in the form of advice or work they perform.

Now, turn to the next page to see examples of goods and services provided for people.



The diagram above shows examples of goods and services.
Source: Internet-2014.

Activity 9.1: Complete the activities given below.

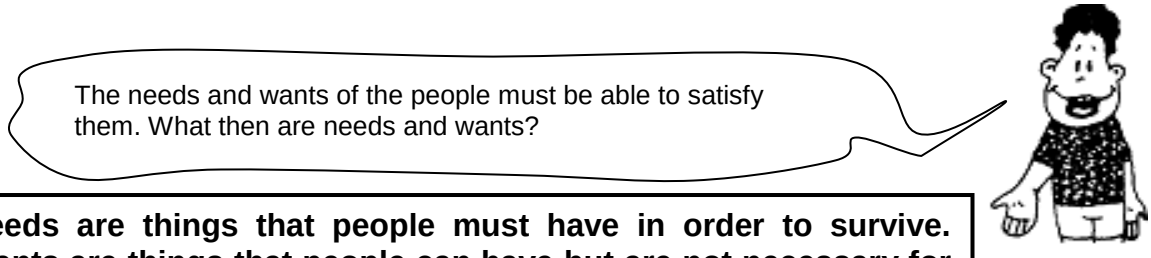
1. Define;
(a) Goods._____
(b) Services. _____
(c) Tangible. _____
(d) Intangible. _____

2. State the difference between goods and services.

_____
_____

What are Needs and Wants?

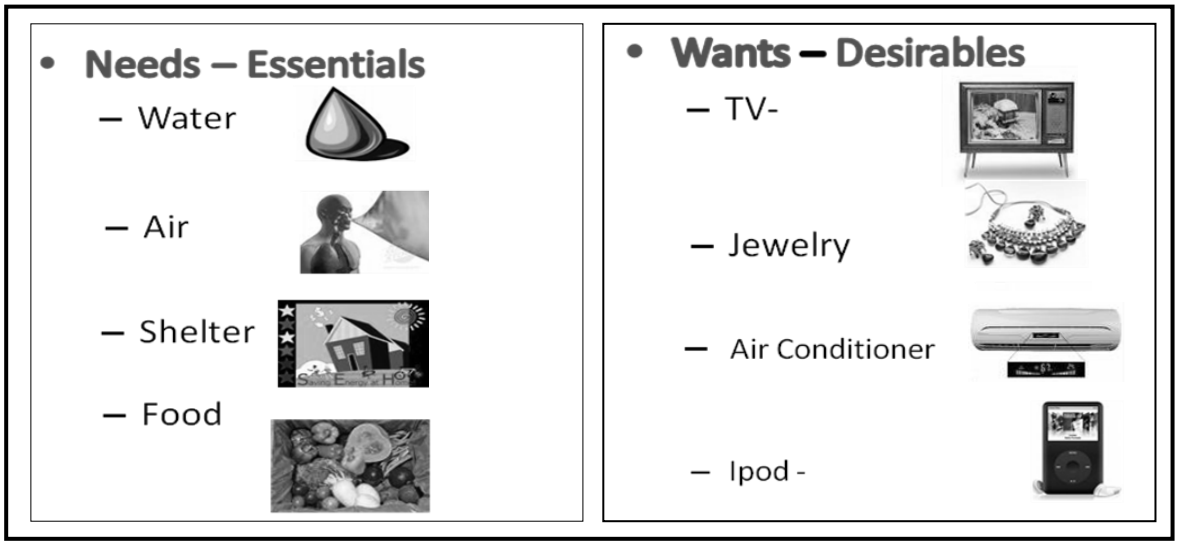
People have different needs and wants that keep them alive. Goods and service providers must be able to meet this never ending needs and wants.



Needs are things that people must have in order to survive. Wants are things that people can have but are not necessary for survival.

With the limited or little income that people earn they have to make the most out of it by choosing and paying for goods and service that will be of value for their money. They are satisfied when consuming these goods and services and are willing to pay the price offered by the providers.

Now, look below to see examples of peoples needs and wants.



The diagram above shows examples of needs and wants of people.
Source: Internet- 2014.

Characteristics or Features of Needs and Wants

How do we know that the goods and services that we consume are needs and wants? There are characteristics or something common that identifies the goods and services consumed as needs or wants.

i. Needs

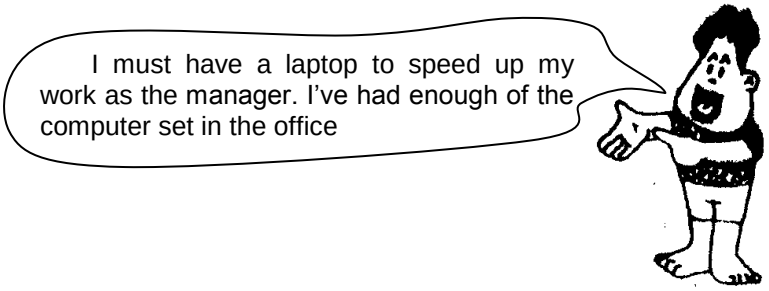
- *Needs are essential and are necessary*. They make up the basic things that all people must have in order to survive. If people's needs are not met they will surely die. Refer back to the diagram on needs and wants to help you understand better.

ii. Wants

- *Wants are unlimited and not necessary.* Unlimited means never ending. In fact peoples wants are too many that they can never be satisfied. Wants are not necessary though they may make life comfortable.
- *Wants are desirable:* Desirable refers to something you really wish to have. You just want it because others have it. In fact, if you do not have something you want you cannot die. Refer back to the diagram on the needs and wants to understand better.



A laptop.
Source: Internet- 2014.



The cartoon here tells of what individuals want. There is no need to get something new if the other machine does the same tasks as the first one.

Activity 9.2: Complete the activities given below.

1. Define
(a) Needs. _____
(b) Wants. _____
(c) Unlimited. _____

2. Fill in the table by listing the characteristics of needs and wants.

Needs	Wants

Different Types of Needs and Wants for Different Groups of People

As mentioned earlier all people have needs and wants. However, these needs and wants vary or differ simply because all these people are different. How are they different? The list below gives the factors that make peoples needs and wants vary differently.

1. Accommodation

This refers to a room or building people live in. Accommodation can be put out for rent. Rent refers to money paid by people using rooms or buildings to the owners of those rooms and buildings. Examples of accommodations are houses, hotels, motels and guesthouses. Accommodation becomes a need for people who desperately needs shelter. Desperate refers to greatly needing something. It will become a want for people who have private houses or offices.



1



2

The two photographs above show 1. A Motel and 2. A Hotel
Source: Internet-2014.

2. Building

This refers to industry or work which involves constructing or creating buildings whether for housing or for business. Examples of those involved in the building industries are timber merchants, concrete suppliers, building companies, hardware stores, architects and carpenters. Building becomes a need for people who do not have house and are planning to have one. Also if businesses are renting other

companies office and using it, in time, it becomes a need for them to set up their own office building. Building becomes a want for those who have private or own houses and offices.

3. Communication

Communication refers to keeping in contact with other people whether over short or long distances. For example, keeping in touch through newspaper, television, radio, telephone and postal services. Communication is a need for people who are involved in business. Also those who are faced with situations like natural disasters. Communication is a want for those who are especially in the rural areas where it is not necessary because most do not have electricity or other services that can make communication flow freely at their convenience or easy for them to have. To them it is a waste to have such things like television and telephone.

4. Crops and livestock

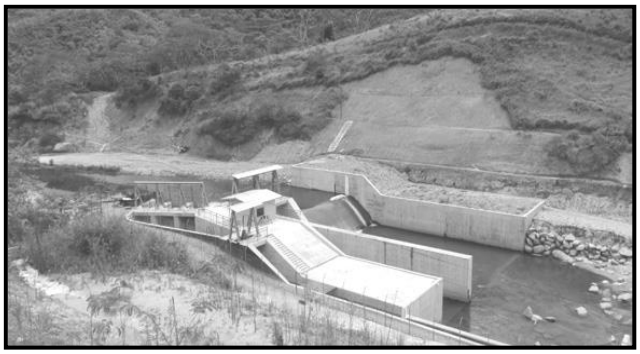
Crops and livestock refer to plant food and animal protein for people. It is a need for all people to eat food crops and animal protein to grow healthy and survive as well. Those involve in providing food crops and livestock must meet the food demands for all people.

5. Education

Education refers to learning how to read and write by going to school. It involves bookshops, suppliers of education materials, schools, colleges and universities. Education is a need for people to communicate with the outside world. For example, you go to school and learn how to read and write in English because this is the universal or common language used all over the world. Through speaking English you are able to talk with people from the outside world like Australia to Japan and other foreign countries to find out more about something from them.

6. Electricity

This refers to the power that provides light for the people. The organisation involve in providing electricity is PNG Power with their big generators and hydro dams. Electricity is a need for those living in cities to light up their homes and their business offices. It is a want for people in the rural areas. They can use kerosene lamp or Coleman lamps.



The diagram above shows a dam where water is used to create power for electricity.
Source: Internet- 2014.

Even for some in the cities like illegal settlements. Without electric light they will still survive.

7. Financial Management

This refers to how money is managed or looked after. Those involved in financial management are banks, savings and loans societies, accountants and auditors. Financial management is needed by people and businesses to keep their monies safe. It is a want for people who do not have accounts or keep their money at home.

8. Food and household goods

Food and household goods refers to food and household goods that keep people alive and make their lives easy and comfortable at home. Those who provide food and household goods are shops, supermarkets, local markets, trade stores and hardware stores. Household goods refer to things like cooking utensils like cooker and jug, stove, fridge, television and radio. This becomes a need for working class people since they are very busy people. They do not have time to light fire to cook food.

9. Health

Health refers to the general condition of the well-being of the human body. Those involved with health are pharmacies, doctors, medical clinics, health centre and hospitals. It becomes a need for those who are sick. It is a want to those who are healthy.

10. Religion

This refers to peoples belief about something. For instance, in Papua New Guinea people believe in God. Religion involves worship, marriage, baptism, and funerals by church organisation. It is a need for marriage in churches to keep up with the modern times. However, for most people in Papua New Guinea, it is a want since their marriages are recognised through traditional means other ways as well. Traditional marriage refers to the bride or the lady getting married receiving garden food and money given by the groom or the man getting married and his relatives.

11. Safety

This refers to the security of the people. Safety involves police, correctional institutions, courts, lawyers, and security companies. For every one, security is a need since people do not want to become victims of crime. Victim refers to someone innocent who becomes part of an incident for no good reason. Safety is very important.

12. Sanitation

Sanitation refers to sewage and garbage or rubbish collection and disposal or dumping. Sanitation also involves garbage collections. PNG Water Board managers, water suppliers and managers sanitations systems. For people living especially in the cities it is a need for their rubbish to be collected and dumped at the right place as it can cause health problems. It is a want for people who use pit toilets and who burn their rubbish when it builds up and is not collected.

SEWAGE OR WASTE PIPE



Source: Internet-2014.

13. Transport

Transport refers to something that carries things or people from one place to the other. Transport involves PMV operators, car rental companies, shipping companies, airlines, service station, tyre repair operators, mechanic workshop, earth moving contractors, bridge and road engineers, boat yards and car dealers. Transport is very important at present times for all people whether employed or unemployed. It is a need because people have to move on time to get work done. For those in the rural

remote areas transport like vehicles are a want because they can simply walk from one location to the next unless it is an emergency.



Activity 9.3: Complete the activities given below.

Name the twelve (12) different types of needs and wants of people excluding accommodation.

1. _____	4. _____	7._____	10. _____
2. _____	5. _____	8._____	11. _____
3. _____	6._____	9_____	12. _____

Summary:



You have come to the end of Lesson 9. In this lesson you learnt that;

- Goods refer to things for sale or use that can be seen and touched.
- Services refer to jobs and businesses that provides something especially help or assistance for other people.
- Tangible refers to things that can be seen and touched
- Intangible refers to things that cannot be touched or seen but are felt.
- Needs are things that people must have in order to survive.
- Wants are things that people can have but are not necessary for survival.
- The thirteen different types of wants are; accommodation, building, communication, crops and livestock, education, electricity, financial management, food and household goods, health, religion, safety, sanitation and transport.

NOW DO PRACTICE EXERCISE 9 ON THE NEXT PAGE



Practice Exercise 9

1. Group the following goods and services into appropriate columns in the table shown below. One example has been done for you.

Lamb chops, ice cream, shirt, house, video recorder, canoe, rice, water, ART drug for HIV positives, immunisation, elementary school, health, hair dresser, PMV, taxi service.

Needs		**Wants**	
Goods	**Services**	**Goods**	**Services**
		Lamb chops	

2. Match the goods and services on the left to those who need and want them on the right. One example has been done for you.

Goods and services	**Those who need and want them**
1. Wheelchair	a. Multi-Skilled Handy Man
2. Track Shoe	b. Taxi Driver
3. Bullet Proof Vehicle	c. Teacher
4. Handy Man's Tool Box	d. Nurse
5. Thermometer	e. Prime Minister
6. Drivers Licence	f. Sprinter
7. Computers	g. Christian
8. Certificate In Teaching	h. **Crippled Adult**
9. Garden Tools	i. Office Secretary
10. Bible	j. Farmer

CHECK YOUR WORK. ANSWER AT THE END OF SUBSTRAND 2

Supplementary Information 15: Resources

All people have needs and wants that must to be satisfied. These needs and wants vary or differs because all people are different. People involved in the business of meeting the growing and unlimited needs and want of the people study these demands before providing them so it satisfies everyone. Unlimited refers to something that is unending or will never end. But before the providers can meet the needs and wants of the people they have to have the required resources. What then are resources? Resource in this context or study refers to raw or natural assets that are taken from the natural environment. In recent times resource seems to run out due to the growing population of the world. Papua New Guinea is no exception. This means our resources in will also run out. Those who are involved in providing for peoples needs and wants must be careful on the methods they use to extract or take out resources to produce things.

Papua New Guinea as you know is a very rich country in terms of its natural resources. The government must enforce or carry out the strict laws and regulations it already has so that those involved must abide by it. Regulations refer to rules. Papua New Guineas resources are made up of minerals, petroleum and energy, marine, forestry and agriculture and livestock.

Here below, is a table showing information on the examples of resources that are extracted or taken out from Papua New Guinea's soil and sea.

Type of Resources	Examples of Resources
i. Minerals	Gold, copper, silver, nickel and zinc
ii. Petroleum and energy	Oil and gas
iii. Forestry	Trees
iv. Marine	Fish, shellfish, berch de mer or sea cucumber, crustaceans like crabs, crayfish, lobster and prawns
v. Agriculture	Coffee, cocoa, tea, rubber, oil palm Vanilla and cardamom
vi. Livestock	Pigs, cows, sheep, goats and birds like duck, goose and chickens

Our government generates or earns its income from these resources. It allows the national firms and foreign investors or businesses with skills and technology to extract these resources by following the set regulations and laws it has in place. These resources are extracted at a much faster rate. It has taken thousands of years for some of these resources to form and if they are taken out at a very fast rate simply to meet the ever increasing and unlimited needs and wants of people than that is already a danger for the people themselves.

Technology refers to modernised machines, tools and the equipment used to help carry out work.

How is the overuse of resources satisfying the needs and wants of the people a danger for both the people and their environment? Let us go through an example to understand how extracting or taking out resources satisfies needs and wants at the same time poses or brings danger to the people and the environment.

1. *Minerals.* The mineral example of gold.

Extraction



Open pit mine

Secondary product



Raw gold

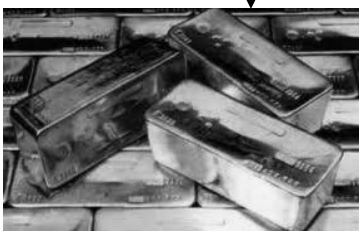
Satisfying needs and wants



Gold watch



Gold necklace



Gold bars

Environmental effect



Plants along the river bed dying out due to mine waste being disposed or discharged into the river.

The picture above shows where gold is extracted in the first place then processed or changed into certain things to satisfy people's needs and wants and the end result of taking gold out from the land. The photograph of the open pit mine is Ok Tedi mine and the dying plants are along the Fly River. Both pictures were taken from Western province in Papua New Guinea.
Source: Internet- 2014.

In Papua New Guinea the government has mining laws however it must strictly enforce it to save our resources from being abused and running out quickly. What is abuse? Abuse refers to not treating something with care. So, in this case, resources when not extracted with care are being abused. From the picture some things like the gold watch and the gold necklace are just wants and are made for few people who are very rich. The resource owners suffer in the end with nearly all their natural environment destroyed.

What can be done to reduce mining's environmental impacts? There are number of ways people can do to reduce impacts of mining. Impact refers to the effect of an action on something. In this case, mining has a negative impact on the environment.[

Ways of Reducing Mining Impacts	Explanation
1. Reduce the consumption of minerals	People can reduce the amount of goods they consumer or manufacturers must reduce the content of minerals in manufactured goods. For example, instead of building more cars, we could rely more on public transit or public transport.
2. The efficiency or well organised manufacturing process can be increased to reduce the amount of new minerals required	For example, structural beams or timbers might be designed or made to be equally strong while using less steel.
3. Substitution or replacing other materials and processes or ways with more environmentally friendly materials and processes or ways	For example, plastics might be used instead of metal to build appliances or equipment. Biomass pronounced as baiomes are plant wastes which can be used instead of uranium to produce energy. Uranium is a mineral.
4. Using recycled materials instead of mined materials	For example, if tin cans are efficiently or well recycled, fewer minerals should be mined to make cans.
5. Improving environmental performance at mines	Mines can be designed so that they produce less waste or use less toxic or poisonous chemicals.
6. Legislation or laws and regulations to reduce environmental impacts can be enacted or made and enforced or carried out in full force.	Governments can require mines to adopt or include increasingly effective environmental procedures and call out for penalties for failure to comply or follow rules.
7. Cleaning up abandoned or closed mine sites	Companies and governments can be held accountable or responsible for sites they will be leaving and be required to carry out environmental clean-up.
8. Economic or wealth measures for the government	No tax or tax cut can be introduced to provide rewards for practices like product substitution or replacement. No reward for poor environmental performance.

Source: Internet-2014.

Therefore, people must think about the resources and its sources before consuming too much of it or desire for things which are wants and are unnecessary.

END OF SUPPLEMENTARY READING 15

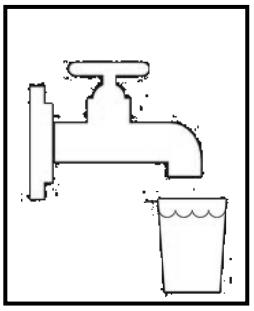
Supplementary Information 16: Satisfying Needs

In order for people to survive their needs and wants have to be satisfied. However, as you have learnt in supplementary information 15, these needs and wants comes with a cost. That is, the environment is being destroyed just to satisfy peoples ever increasing and unlimited demands for their needs and wants to be fulfilled.

Demand refers to the number of goods and services people are willing and able to pay for at a particular time.

Needs as you have studied earlier refers to the things that people must have in order to survive. For example, air, water and shelter. Wants are things that people can have but are not necessary for survival. For example, cars. If a family owns a car then there is no need for another family member to own another car. In reality peoples wants are greater than their needs. They make these wants become needs. The more the wants are, the greater the use of resources. People must look mainly at satisfying their needs than wants. The immediate need should be taken care of followed by the next need. The last things to about are the wants. If people's needs are not met they will surely die.

Let us look at two examples of need that all people must have. Once these needy areas are satisfied then other needs should be taken care of rather than trying to satisfy something considered or seen as unnecessary.



1. Water

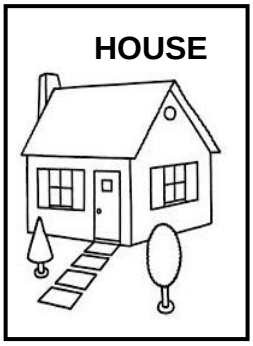
Water is very vital or important to life. Without water all people will surely die. What is water? Water refers to a colourless, tasteless and odourless liquid. Odour refers to smell. Thus, such needs of the people must be taken care off.

2. Shelter

Shelter refers to housing. People need shelter to be kept warm. If people are not provided shelter or do not have one, they are likely to fall ill, get robbed or harassed. For example they may get malaria since they are exposed or are out in the open where mosquitoes prey on them. Prey refers to something that is treated badly by another.

Other things that are for decorations to the shelter should be the least or the last thing on the minds of the people

If only needs are to be met then resources will not be overused or abused. Therefore, as an individual you can make a difference to the environment by organising your needs and ensure that you are fully satisfied.



Source: Internet-2014.

END OF SUPPLEMENTARY READING 16

Lesson 10: Sources of Goods and Services



Introduction:
Welcome to Lesson 10. In the previous lesson you learnt about goods and services as well as needs and wants. You learnt that there are different types of needs and wants for people. In this lesson you will learn about organisations that provide goods and services to satisfy the needs and wants of people.



Your Aims:

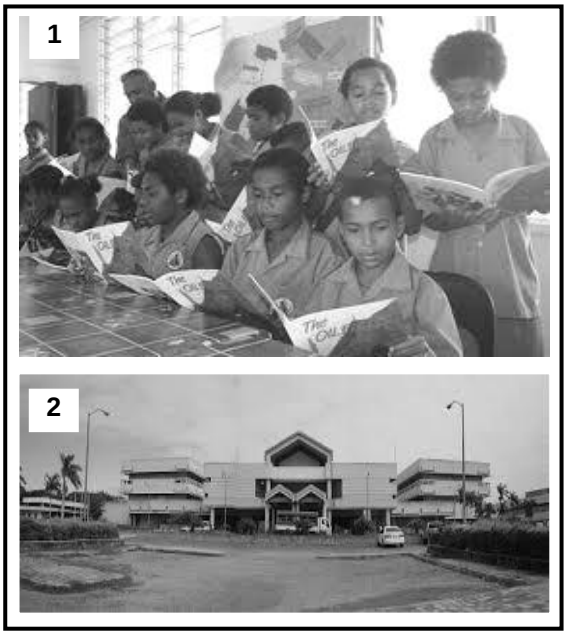
- Identify the organisations that provide goods and services
- Discuss the importance of the goods and services provided by these organisations

Organisations that provides Goods and Services

Generally, in Papua New Guinea sources of goods and services or goods and service providers are of two types. They are 1. *Government organisations, 2. Non-Government organisations .*Before we can study these two types of organisations, let us define what an organisation is. Organisation simply refers to a group. Groups that are formed to meet the growing demands of the needs and wants of people. They are mainly business oriented. Business oriented refers to the aim of making money. However, there are organisations that provide goods and services for free. As you proceed or move on in our lesson you will learn about them. Organisations are formed by people of different backgrounds with the same interest, aim and goals . For example, doctors can get together to provide fast health services to people as a business. Or people with the skills of carpentry can get together and start a construction company. Now, let us go through the two main types of organisations that provide goods and services in Papua New Guinea.

1. Government organisations

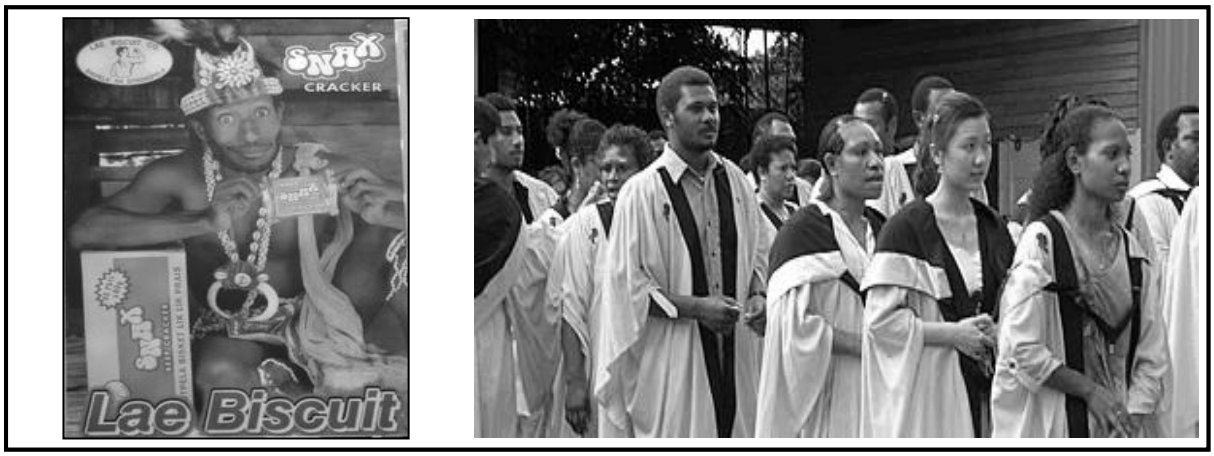
Government organisations refer to organisations or groups that are directly or indirectly influenced by the actions of the government. The government refers to groups of ministers who are in the parliament that makes decisions that are supposed to be in the best interest of the people. These ministers ensure that goods and services like health care and education that are provided fully satisfy the needs and wants of the majority of the of Papua New Guinea people. The government's aim is to serve the people by providing goods and services at cheaper and affordable price.



The two photographs above show government services. 1.Ted Diro Primary School. 2. Port Moresby General Hospital.
Source: Internet- 2014

The private organisations or private businesses are indirectly influenced by the government for these main reasons. They are to pay tax to the government and follow the business regulations or laws set by the government of Papua New Guinea. Private organisations are businesses that are aimed at making profit. Refer to your supplementary information 17 to find out more on government organisations.

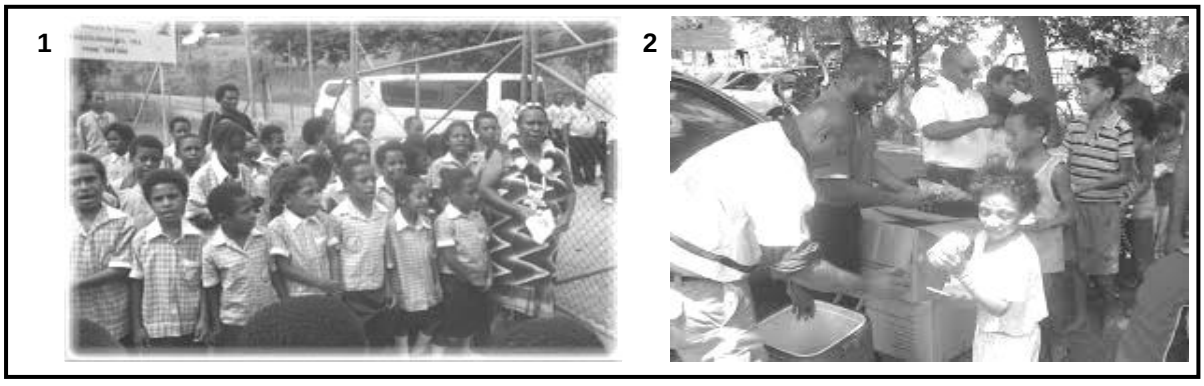
Goods and services that are provided by private organisations or businesses. Bear in mind that their aim is to make profit for themselves at the same time satisfying the needs and wants of the general public. Public refers to people like you and I who are the consumers.



The photographs above show 1. Goods that is snacks biscuit produced by private company, Lae Biscuits.
2. Service of higher education by private school, Institute of Business Studies (IBS)
Source: Internet-2014

Non-government organisations refer to those organisations or groups that get very little or no assistance or help at all from the government. Churches and faith based organisations are part of the non-government organisation. These organisations or groups have the aim of helping the government met the ever-increasing demand of the needs and wants of people. Like the government they provide help in terms of goods and services such as education, health and infrastructure. Infrastructure refers to the basic structure for movement of things. For example, roads, bridges, airport and wharves.

Following are some services provided by the non-government organisation.



The photographs above show 1. Service of Education provided by Seventh Day Adventist Church-Carr Memorial Primary School
2. Care service provided by Salvation Army Church free of charge
Source: Internet- 2104

To learn more about non-government organisations read Supplementary Reading 18.



Activity 10.1: Complete the activities given below.

1. Define

(a) Organisation _____

2. Explain business oriented _____
_____

3. Explain the difference between government and non- government organisation.
_____
_____
_____

Importance of Goods and Services provided by Organisations

Goods and service providers are important because they supply goods and services that people need or want but cannot provide for themselves. For instance, those living in the cities cannot make garden therefore they will need to buy food like rice and frozen meat protein from the shops. Other goods people need are clothes and water which they have to pay for. For those in the village water is free.

Most services that are provided by organisations whether government or non-government are nearly all important. The following services satisfy the needs and wants of many Papua New Guineans.

- Air, sea and land transport companies are important because people can book and pay fares to travel to other places.
- Churches are important because they provide religious instruction and care for spiritual needs.
- Council services by National Capital District Commission (NCDC) are important because they maintain market places, repair roads and collect garbage or rubbish.
- The PNG power is important because it provides electricity services to homes and businesses.
- Schools are important because they educate the young.
- Service stations are important because they provide petrol, diesel, and tyre repair and care maintenance services.
- Police are important because they help to maintain law and order in the community.
- Shops are important because they enable people to buy food, clothing and household item.
- Digicel and telecom makes communication easier where people are able to talk to others over short and long distances.
- Banking enables people to save their money and also access or get their money to pay for goods and services for instance in shops.
- PNG Water Board ensures that people have the most essential need of water available to them at affordable and cheap price.

- Health services are important because they provide people health care.



Activity 10.2: Complete the activities given below.

1. State the importance of goods and service providers.

_____
_____

2. Why are services very important to the people of Papua New Guinea?

_____
_____

Summary:



You have come to the end of Lesson 10. In this lesson you learnt that;

- Organisation refers to a group.
- There are two main service providers *1. Government organisations and 2. Non-government organisations.*
- Government refers to the ministers in the parliament that tries to make decisions in the best interest of its people.
- Business oriented refers to organisations that provide goods and services to make profit at the same time satisfying the needs and wants of people.
- Private business organisations are indirectly influenced by the government because they must pay tax to the government and comply or follow the rules of the country regarding or looking at business.
- Government organisation is made up of the ministers who represent the people of Papua New Guinea and the private business organisation.
- Non-government organisations are groups that are not part of the government but try to meet the needs and wants of people.
- Churches and faith based groups are part of the non-government organisations.
- Goods and service providers are very important because they supply goods and services that people cannot provide themselves.
- Nearly all services are greatly needed as well as wanted by many people in Papua New Guinea.

NOW DO PRACTICE EXERCISE 10 ON THE NEXT PAGE

Practice Exercise 10

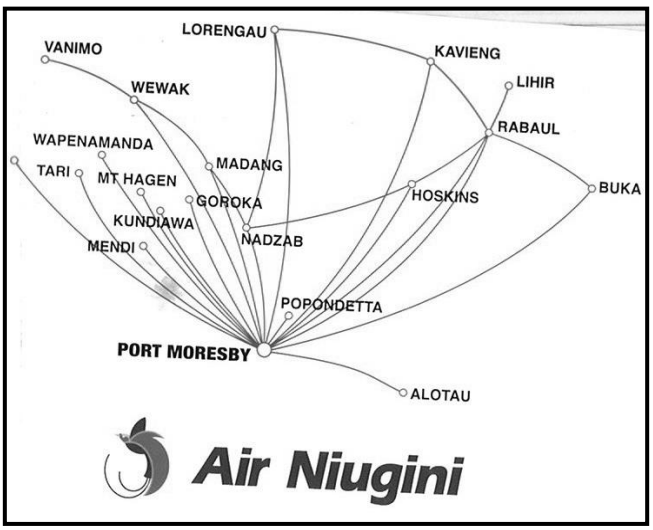
1. Write down two needed (2) goods and two needed (2) services and their providers. Fill in the table with the correct information.

Goods	Providers	Services	Providers

2. Write down the correct service providers for the services they provide peoples. These services satisfy people's needs and wants. Choose only one word to write beside the services.
Hanjung Power, Central bank, Bank South Pacific, Angau Memorial Hospital, Paradise Hospital, Digicel, PNG Power, Eda Ranu.

(i) Provides electricity or light to the people. _____
(ii) Makes banking easier. _____
(iii) Provides health care for the general public. _____
(iv) Provides water for all people at affordable price. _____
(v) Keep the city clean. _____
(vi) Makes it easier for people to communicate over short or long distances. _____

2. Refer to the picture given to answer the questions.



(a) Name the type of service and the provider of this service.
_____

(b) Explain how it can become a needed service?
_____
_____
_____
_____
_____

(c) Do you have this service provided in your area? _____

CHECK YOUR WORK. ANSWERS AT THE END OF SUBSTRAND 2

Supplementary Information 17: Government Organisations

Peoples needs and wants for goods and services are satisfied by those who provide them. Goods and service providers must provide goods and services that will fully satisfy their consumers. This is because people are paying for these goods and services to satisfy their needs and wants in the first place. In Papua New Guinea there are organisations that try to meet the most basic needs and wants of the people.

Government organisations are groups formed by the government to provide basic goods and services for its people. Who makes up the government? The government refers to certain individuals who have been elected to represent the interest of the people of Papua New Guinea in the parliament. These individuals work together with the help of foreign countries to run Papua New Guinea. The aim of the government is to provide as much as possible cheaper and affordable services to the people.

Let us go through the services that are provided by the government to meet the basic needs and wants of the people.

1. Education

The government provides affordable education services for its people. The government tries its best to provide as much as possible free education for its people mainly to increase its literacy level. It also to increases human resource to develop this country in the future.

2. Health

The health services provided by the government are also affordable. For example, Port Moresby General Hospital treats people for their wounds, illnesses and diseases.

3. Transportation

The transport services that the government provides for are land, air and sea. For example, Air Niugini provides air transport in Papua New Guinea. People pay for these services to be transported by air from one place to the other. Another government organisation is PNG Ports Services. It takes care of the wharves throughout the country and safeguard the nation from foreign goods coming onto the shores of Papua New Guinea.

4. Communication

The government tries its best to provide cheaper communication service such as telephone, mobile phone or internet. For example, Telecom deals with Papua New Guineas communication problems. Including Post PNG a government organisation that tries to provide mail services as well as internet services for transferring money.

5. Banking and Insurance

The government provides service through its banks, for example, such as Micro Finance and National Development Bank. Banks such as Bank South Pacific, ANZ and Westpac are regulated by the government. Regulate refers to government having indirect influence on the decisions of how these banks operate. The government does not decide on how they run their banking business. They have a board or people in authority or power who decide. They simply abide or follow laws

and regulations of the government to do business in Papua New Guinea. This includes insurance companies such as Nambawan Finance, AGC Pacific, Credit Corporation and Resources and Investment Finance Limited.

6. Electricity supply

This service is provided to supply power to homes, offices and industries. For example, PNG Power is responsible for this service to all people in the country.

7. Water supply

The government aims to provide clean and safe drinking water for its people. It also takes care of the sewage. For example, the PNG Water board takes care of these services through such company like Eda Ranu.

8. Security

The government provides domestic and national security for the people. For example The Papua New Guinea Defence force provides security from foreign invasions or invasion from other countries. The Royal Constabulary Force or the police force provides security for its people in the country. PNG Correctional Services provide services for prisoners. Fire services are there to provide fire service to safeguard people's property from fire and arson. Arson refers to the crime of burning property.

9. Manufacturing and industries

This refers to products or goods that are made for people to consume or use by the government. Some of these providers are business groups called joint venture. Joint ventures refer to the government and the private companies working together. For example, OK- Tedi mining, Pogera Joint Venture, Wafi-Golpu mines, Ramu Sugar and Higaturu Oil Palm. Others that produce food for consumption are like the Paradise Food Limited that make biscuits and RD Tuna Cannery that produces canned fish like Diana Tuna.

The government aims to provide the basic goods and services at an affordable rate to all its people to satisfy their basic needs and wants.

END OF SUPPLEMENTARY READING 17

Supplementary Information 18: Non-Government Organisation (NGO)

What are non-government organisations or NGO's? Non-government organisations refer to groups that have very little support or no support at all from the government. They provide goods and services just like the government. Some services they provide greatly satisfy the needs of people where the government cannot reach out to. This applies especially to those in the rural areas. There are increasing numbers of non-government organisations in Papua New Guinea. Mainly churches or faith based organisations provides these needed service

The table below gives information on the non-government organisations and how they help satisfy needs and wants of people from the goods and services they provide. Most of these organisations are supported by donor Agencies. Donor agency refers to countries, people or groups that assist in cash and kind to these non-government organisations to keep it operating. There are more than fifty registered non-government organisations in Papua New Guinea.

NON-GOVERNMENT ORGANISATIONS

Organisation	Aim
Adventist Development and Relief agency (ADRA)	Believing that every person is valuable. It works with people regardless of ethnic, political, racial or religious association to stop human suffering, strengthening both individuals and communities to develop their abilities.
Appropriate Technology and Community Development Institute (ATCDI)	Provides technical information and assistance to rural communities, and to research and develop new technologies that are useful for the PNG environment. It helps communities to apply for funds from donor agencies (Ausaid)
Anglicare Stop Aids PNG	They offer counselling services to victims of family violence and HIV/AIDS, conduct awareness on HIV/AIDS and violence. Visit secondary schools, settlements and village communities. They also provide training for peer or friend education.
ATprojects	A Goroka based NGO which works with communities, other NGOs and the provincial government of the Eastern Highlands Province of Papua New Guinea. Its mission is to enable rural people to develop and use skills and technologies that give them more control over their lives and which contributes to the sustainable development of their communities.
Business Enterprise Support Team	Works with rural groups who want to

	strengthen their community through business and community development
Children Fund Papua New Guinea	Child fund PNG works in partnership with children and their communities to provide practical support such as lifesaving health care, and the chance to go to school. By empowering people voice their needs and supporting them to address the issues affecting their daily lives. It supports long term sustainable community development.
Clean Energy Solutions	Profile Consultancy and Training in renewable Energy – pic/Micro hydro power, solar pv systems, water pumping
Conservation International PNG/Conservation Melanesia	Founded in 1987 and present in Melanesia since 1991. It believes that the earth's natural heritage or property must be maintained if future generations are to thrive or continue living spiritually, culturally and economically. Its mission is to conserve the Earths living heritage, our global diversity and to demonstrate that human societies are able to live harmoniously with nature.
PNG Eco- Forestry Forum	Its goal is promoting development and sustainable resources use through a good and sustainable eco-forest industry.
Greenpeace	It is an independent campaigning organisation that uses non-violence direct action to inform people about global problems and to force solutions which are essential to a green and peaceful future. Its goal is to ensure the ability of the earth to look after life in all its diversity.
Hope Worldwide PNG	Conducts awareness in schools and in urban communities on HIV/AIDS, Growth and Development and it does video sessions and distribute various programs.
The Nature Conservation	Its mission is to preserve the plants, animals and natural communities that represents the diversity or differences of life on earth by protecting the lands and waters they need to survive.
PNG Red Cross Society	Red cross society is a humanitarian organisation working towards improving unfortunate people's lives.
Port Moresby City Mission	To provide physical, emotional and spiritual help through practical, positive programs at the point of crisis and develop skills and potential which will

	enable people to become self-reliant.
Save The Children Fund	Fights for children's right and delivering immediate and lasting improvements to children's lives.
Transparency International PNG	Its vision is to protect the laws of the nation. It raises public awareness of the negative effects on society of dishonesty and mismanagement. With the support of its coalition partner, TI PNG aims to stop corruption and build a just society.
World Vision PNG	It is a Christian relief development organisation dedicated to working with children, families and communities to overcome poverty and injustice.
World Wide Fund For Nature	It works on issues regarding the conservation and restoration of the environment formerly known as world wildlife fund.
Young Women Christian Association (YWCA)	A worldwide movement, the YWCA in PNG is committed to help women to voice their views against social, economic and political injustices
Country Women's Association	Offers financial assistance to women organisations that need assistance to implement projects within the communities in Madang

The table above gives information of twenty NGOs and what they do however as mentioned there are more than fifty. The table below shows other NGO groups.

1. Business and Professional Women's Association	8. Liklik Dinau Abitore Trust
2.Conservation Resource Centre	9. Local Environment Foundation
3.CUSO-VSO	10. Lousiade Womens Association
4. East New Britain Council of Women	11. Lutheran Development Service
5. East New Britain Sosel Eksen Committee ENBSEK	12. Melanesian Environment Foundation
6. East Sepik Council of Women (ESCOW)	13. Melanesian NGO centre for Leadership (MNCL)
7. East Sepik Local Environment Foundation	14. Milne bay Eco- forestry Association
15. Ecotourism Association of PNG	32. Morobe NGO Kibung
16. Ecumenical Education Development Services (ECOSEEDS)	33. NANGO
17. Family Health and Rural Improvement Program	34. National Volunteer Services
18. Family Planning Association Incorporation	35. New Ireland Environment Monitoring and Awareness Committee
19. Family Voice Incorporation	36.People against child exploitation (PACE)
20. Foundation for Rural Development (FORD)	37. Pacific Heritage Foundation
21. Foundation for People and	38. Partners with Melanesians

Community Development (FPCD)	
22. Fresh Produce Development Corporation (FPDC)	39. Research and Conservation Foundation
23. Gazelle Womens Desk	40. The Salvation Army Development Services
24. German Development SERVICE	41. South Pacific Appropriate Technology Foundation
25. Habitat for Humanity	42. United Nations Volunteer
26. Help Resources	43. UNDP Papua New Guinea
27. Horizon 3000 (Australian Service for Development Cooperation)	44. Village development Trust
28.Individual Community Rights Advocacy Forum (ICRAF)	45. Virtu
29. Inter-team	46. Voluntary Service Overseas
30.Japan Overseas Co-operation Volunteers	47. Volunteer Service Abroad (NZ)
31. Lifeline PNG	48. Wau Ecology Institute

END OF SUPPLEMENTARY READING 18

Lesson 11: Selecting Suitable Goods and Services to meet Needs



Introduction:

Welcome to Lesson 11. Lesson 11 is the last lesson for sustrand 3. In the previous lesson you learnt about organisations that provide goods and services and their importance to the consumers. In this lesson, you will learn how to select suitable goods and services to meet your needs as well as wants. As a consumer it is your responsibility to choose carefully the goods and services you are paying for to fully satisfy your needs and wants.



Your Aims:

- Assess the value of available goods and services and their providers in the community in order to make informed decisions and choices to better satisfy needs and wants as a wise consumer.

Making Informed and Wise Decisions to Satisfy Needs and Wants

As a wise consumer it is your sole or self-responsibility to assess or weigh out the value of goods and services to see that these goods and services satisfy your needs and wants. Who then is a wise consumer? A wise consumer is someone who makes good decisions on buying goods and services that will greatly satisfy his or her needs and wants. Let us look at the examples given below on making wise choices.

(i) Food is a basic need. A good way of getting food is to produce your food or buy it at local markets or stores. You can even produce food as well as buy it at the same time. What do you do?

(ii) People need treatment when they are sick. An appropriate or good way of getting better is to go to the hospital or doctor for diagnosis or check-ups and treatment. Some people use traditional remedies or medicines but these are not always reliable. What do you do?

(iii) Safety is a need. An appropriate or good way is be security conscious or aware. Be aware of when you are vulnerable or may be easily attacked and take precautions. Precautions refer to taking extra care when in dangerous situations. Lock doors. Walk in groups. Let people know where you are going so they will raise alarm if you go missing. Travel in roadworthy vehicles or seaworthy vessels. What do you do?

With just these three examples you can think of your needs and wants that must be fully satisfied for the value of your money.
As a wise consumer you must evaluate or check out goods and service providers before you pay to use the goods and services. There are laws on the rights of consumers that goods and service providers must follow. You as a consumer must know these rights to help you pay for goods and services that will greatly benefit you.

*Co*nsumer Rights and Responsibilities



I have heard that consumers have rights and responsibilities.
What are these rights and responsibilities?

1. Consumer Rights

As a consumer you have the right to;

i. *Safety:* Goods and services you pay for should not endanger or cause harm to you in any way. For example, the food you buy should not cause food poisoning.

ii. *Honest Information:* You must be given reliable and honest information about goods and services that are advertised for sales. For example, sale prices must be genuine reductions. That means if the goods are nearing their date of expiring then correct reduced prices should be stated. People might pay more for low valued goods or end of use date.

iii. *Choice:* You should be given a choice of goods and services. This avoids one business controlling the quality or charge of service. For example, you should have a choice of banks, health services and food products.

iv. *Be heard:* If you have problems with the quality or charge for goods and services, you have the right to be heard. For example, you have the right to complain if you are charged too much by a particular shop compared to all other shops operating in that same area.

v. *Redress:* If there is a problem, it should be solved. For example, a faulty item should be replaced or money returned.

vi. *A healthy environment:* You should have access to water supply and your household rubbish should be collected on time.

vii. *Consumer education:* You should learn how to use your money wisely to get value for the money you spend.

2. Consumer responsibilities

Apart from your rights you must be responsible. That is, taking good actions.

i. *Obtain information and take appropriate actions*
You must learn how to be wise in using your money. Ask questions about goods and services you buy if you do not know how to operate or use them.

ii. *Make critical awareness and take actions on social concerns and the environment*
For the amount you spend you should get quality goods and services.
Consumers should work together to take actions if they share a common problem. For instance;

- If transport is a problem, what can be done about it?
- If there are ques to get money at the bank, what can be done about it?
- If opening hours of stores are always late, what can be done?
- If the company is polluting the areas it is operating around, what can be done?

Knowing these this rights and responsibilities will help you become a wise consumer.



Activity 11.1: Complete the activities given below.

1. Define
Wise consumer

_____
_____

2. Fill in the table by listing and explaining the rights of the consumers.

Rights	Explanation

Summary:



You have come to the end of Lesson 11. In this lesson you learnt that;

- A wise consumer is someone who makes appropriate or good decisions on buying goods and services that will satisfy his or her needs and wants.
- All consumers have rights and responsibilities
- There are seven laws that protect the rights of the consumers. They are;
  - Safety
  - Honest information
  - Choices
  - Be heard
  - Redress
  - A healthy environment
  - Consumer education
- Consumers must take note of these responsibilities;
  - Obtain information and take appropriate actions
  - Make critical awareness and take actions on social concerns and the environment.
- Consumers must take note of these rights and responsibilities in order to make appropriate or good decisions.

NOW DO PRACTICE EXERCISE 11 ON THE NEXT PAGE



Practise Exercise 11

1. Why is it important for people to be aware of their rights and responsibilities as consumers?

_____
_____
_____

2. List the 2 main responsibilities of customers.
(a)_____
(b) _____

3. Do you see yourself as a wise consumer? Explain your answer.

_____
_____
_____

4. Do organisations have rights and responsibilities? Explain answer.

_____
_____
_____
_____

5. Use in the words in the word list given below to complete the blank spaces.

Rights, consumer, responsibility, wise, need, satisfaction, decision, all, save, spend, choice.

_____ consumers are able to _____ a lot of money and gain greater _____ from their _____ of goods and services. Knowing their _____ and _____ helps them to make informed decisions. There _____ and wants will also be fully satisfied.

6. Match the following rights listed below to the correct situations given.

Right to: Safety, honest information, choice, be heard, redress, a healthy environment, consumer education.

(a) King Kakaruk kai bar sells stale meat pie.

_____

(b) Tan trading supermarket has rubbish piling up at the entry to the shop.

_____

(c) Bismillah Trading builds a shopping mall next to TNZ supermarket.

_____

(d) PNG power makes awareness of illegal connections of power on the media.

_____

(e) Workers of Eda Ranu raising their concern to their manager about pay.

_____

_____

CHECK YOUR WORK. ANSWERS AT THE END OF STRAND 2

Supplementary Information 19: Qualities of Wise Consumers

You as a consumer have rights and responsibilities for the goods and services you pay for to satisfy your needs and wants. To be a wise consumer you need be careful on how you spend money on the type of goods and services that are provided. Who is a wise consumer? A wise consumer is someone who makes right or good decisions on buying goods and services that will greatly satisfy his or her needs and wants. There are five basic steps you can take to help you become a wise consumer.

1. Comparing prices of goods and services

A wise consumer is always aware of prices for common goods they buy. Often there is a difference between prices in stores. For example, one shop may sell a jar of coffee for K5.99 while another shop sells the same brand and jar size of coffee for K4.99. A wise shopper can save money by buying items at the lowest price.
Even at the market people sell their food at different prices. Someone may sell a bunch of banana for K3 while another person may have a similar size banana bunch selling for K2. In the same way, similar services may have different prices. Someone may charge K20 to cut the grass while another person may charge only K15 to cut the same area of grass. Someone may charge K2.00 to wash a vehicle while another may charge K3.

2. Checking the quality of different brands

Cheapest is not always best. There is a wide range of prices for clothes, tools and household items. A wise consumer checks out quality of different brands before deciding to buy. It is wise to buy the best quality that you can afford.
A T- shirt may be cheap but if it stretches out of shape quickly, then it is not good value for money. An axe may be cheap but if the head falls off after a short time then it is not good value for money. Cutlery for example, fork may be cheap but if it bends soon after purchase you have already wasted your money.

3. Writing a shopping list

A wise consumer always makes a general shopping list before going to the shops. In this way needs are met and impulse shopping is avoided. Impulse shopping refers to buying something that is unplanned. The product on display looks very attractive that you are tempted to buy it.
A shopping list may include food from the market, food from the shop and household items like soap and tooth paste. From time to time items like stationery, clothes or new cooking pots may be needed.

4. Observing consumer laws for protection

Many perishable goods are required by law to have use by date on them. Perishable refers to goods that go bad quickly. For example, bread, kaukau or greens. A wise consumer always looks for the use-by date on products and does not buy products that are past the use- by date. There are set laws in place to protect the consumers.

Many electrical products have a warranty period. If something goes wrong within the warranty period, the store should fix the product for free. A wise consumer keeps receipts and warranty cards in case something goes wrong with the product they have purchased.
Cigarette by law are required to carry a message that warns that smoking is dangerous for your health. Other products may carry warnings to protect consumers.

For example, a detergent washing powder will have warning messages like, *'Keep out of reach of children'*.

5. Keeping records such as receipt of purchase in a safe place for future reference.

Most big shops give a receipt for goods purchased. The receipt shows where something was bought, the date it was bought, what was bought and how much was the change. A wise consumer always checks the receipt and also checks that the correct change is given. Most receipts are printed by machines however there are some that are handwritten.

It is always wise to keep receipts of expensive items such as sewing machines, electrical equipment, lawn mowers or generators. For instance, you have just purchased or bought an item and find out there is a problem with it so you decide to exchange it for another one. The shop management will require proof of payment then you show them the receipt. A wise consumer keeps records, such as receipts for purchase, in a safe place for future reference.

Therefore, the five mentioned points will help you get the value for your money as a wise consumer.

END OF SUPPLEMENTARY READING 19

Supplementary Information 20: Independent Consumer Competition Commission (ICCC)

There are organisations or groups that the government has created to protect the rights of the consumers. You as a consumer should also know about such organisation to help you if you have problems concerning the goods or services that you have purchased. The organisation that protect the rights of consumer in Papua New Guinea is called the *Independent Consumer and Competition Commission (ICCC)*.

The parliament of Papua new Guinea passed the *Independent Consumer and Competition Commission Act* on the 26th May 2002 and became effective or was working on the 16th of May 2002. The part VI of the act which is *'Competitive Market Conduct'* became effective one year later on the 16th of May 2003. Act refers to law.

ICCC Responsibilities

According to the ICCC Act, section 6 gives the primary or main objective or goal for the ICCC that is the responsible people in that organisation to enhance or improve the welfare or well-being of the people of Papua New Guinea. There are three (3) objectives.

Objectives:

(a) Promote competition, fair trade and protect consumers' interest.
(b) Promote economic efficiency in industry structure, investment and conduct.
(c) Protect the long term interest of the people of Papua New Guinea regarding price, quality and reliability of significant or important goods and services.

In order for the three objectives to work three (3) functions mentioned below were created to help consumers.

Functions:

- Ensure effective economic regulation of State Owned Enterprises or business, privatized enterprises and declared goods and services.
- Ensure the promotion and protection of competitive market and fair trading.
- Ensure the protection of consumers' interest.

The aim of the government in establishing these organisations is to promote and protect competition in markets and fair trade to enable efficiencies in operations in commerce and industries. They provide more and better quality goods and services at affordable prices to the consumers. Businesses whether nationals or foreigners must abide to these Act or law.

END OF SUPPLEMENTARY READING 20

ANSWERS TO

SUBSTRAND 3

PRACTICE EXERCISES

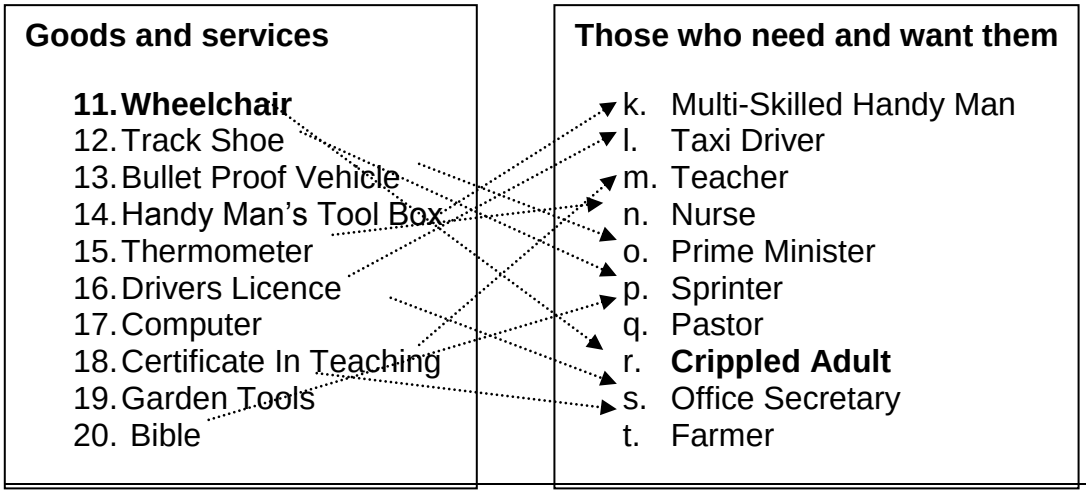
Answers to Practice Exercises 9 - 11

Practice Exercise 9

1. Group the following goods and services into appropriate columns in the table shown below. One example has been done for you.
Lamb chops, ice cream, shirt, house, video recorder, canoe, rice, water, ART drug for HIV positives, immunisation, elementary school, health, hair dresser, PMV, taxi service.
:

Needs		***Wants***	
Goods	***Services***	***Goods***	***Services***
shirt	*immunisation*	*Lamb chops*	*hair dresser,*
house	*ART drug for HIV positives*	*ice cream*	*taxi service*
rice	*elementary school*	*video recorder*	
water	*health*		
canoe	*PMV*		

2. Match the goods and services on the left to those who need and want them on the right. One example has been done for you.



Practice Exercise 10

1. Write down two needed (2) goods and two needed (2) services and their providers. Fill in the table with the correct information.

Sample Answer:

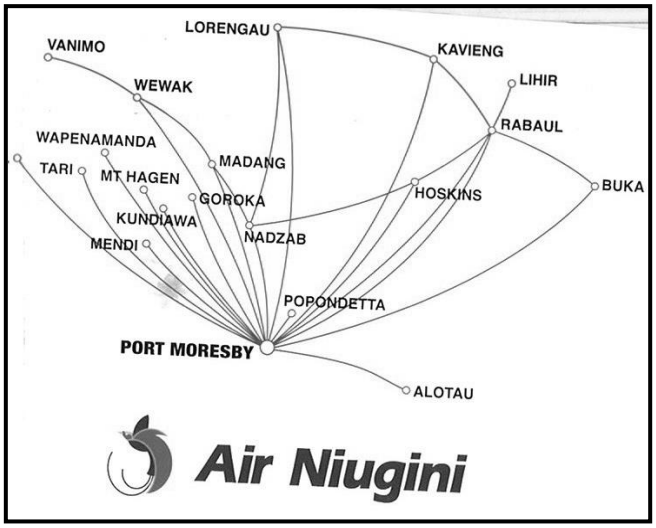
Goods	***Providers***	***Services***	***Providers***
Rice	*Trukai Industries*	*Education*	*Department of Education/ Private School or Intelligent Education Agency*
Tinned Fish	*RD Tuna Canneries*	*Health*	*Department of Health or Private health providers like Paradise Hospital*

2. Write down the correct service providers to the services they provide. These services satisfy peoples needs and wants. Choose only one word to write beside the services.
Hanjung Power, Central bank, Bank South Pacific, Angau Memorial Hospital, Paradise Hospital, Digicel, PNG Power, Eda Ranu

Answers:

(a) Provides electricity or light to the people. *PNG Power*
(b) Makes banking easier. *Bank South Pacific*
(c) Provides health care for the general public. *Angau Memorial Hospital*
(d) Provides water for all people at affordable price. *Eda Ranu*
(e) Makes communication easier. *Digicel*

3. Refer to the picture given to answer the questions.



(a) Name the type of service and the provider of this service.
Air transport, Air Niugini

(b) Explain how it can become a needed service?
It will transport people by air from one place to another quickly

(c) Do you have this service provided in your area? *Students answer*.

Practise Exercise 11

1. Why is it important for people to be aware of their rights and responsibilities as consumers? *It is important for the people to be aware of their rights and responsibilities as consumers because it will help them make informed decision on buying goods and services and will make them become wise consumers.*

2. List the 2 main responsibilities of customers.
(a)*Obtain information and take appropriate actions*
(b)*Obtain information and take actions on social concerns and the environment.*

3. Do you see yourself as a wise consumer? Explain your answer. *Students Answer.*
4. Do organisations have rights and responsibilities? Explain answer.
Students answers.

5. Use the words in the word list given below to complete the blank spaces.

Rights, consumer, responsibility, wise, needs, satisfaction, decision, all, save, spend, choice.

Wise consumers are able to *save* a lot of money and gain greater *satisfaction* from their *choice* of goods and services. Knowing their *rights* and *responsibilities* helps them to make informed decisions. Their *needs* and wants will also be fully satisfied.

6. Match the following rights listed below to the correct situations given.

Right to: Safety, honest information, choice, be heard, redress, a healthy environment, consumer education.

(a) King Kakaruk kai bar cooks cooking very small air tight kitchen. *safety*

(b) Tan trading supermarket has rubbish piling up at the entry to the shop.
A healthy environment

(iii) Bismillah Trading builds a shopping mall next to TST supermarket. *choice*

(v) PNG power makes awareness of illegal connections of power on the media.

Consumer education

(vi) Workers of Eda Ranu raising their concern to their manager. *Be heard/redress.*

SUBSTRAND 4

MAKING THINGS

In this substrand, you will:

- **Discuss different types of local materials and their appropriate uses for specific purposes**
- **Discuss how to plan and design a new product**
- **Discuss the value of reusing and recycling materials and resources**
- **Discuss how to modify products to meet functional and aesthetic needs**
- **Discuss how to evaluate a product or item for improvement**

SUBSTRAND 4: INTRODUCTION



Welcome to Substrand 4: Making Things. In this Substrand, you will learn about making things from materials that are regarded as wastes. You will do this by identifying materials for reusing and recycling. You will also learn how to improve your product further after evaluating it.

This Substrand consists of five lessons.

Lesson 12 is about identifying materials. It involves searching, identifying and analysing different types of local materials and their appropriate uses or for specific purpose.

Lesson 13 teaches about making a new product from waste materials to make a new product.

Lesson 14 covers re-using and recycling materials. It involves identifying the values of reusing and recycling manufactured materials and resources.

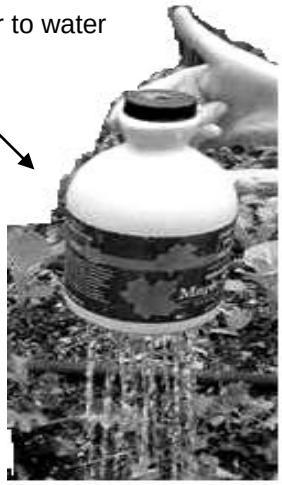
Lesson 15 talks about improving a product. It teaches how we can identify possibilities of modifying products to meet functional and aesthetic needs. Aesthetic refers to making something beautiful. It also discusses how to identify appropriate techniques, tools and equipment required to modify a product or item.

Lesson 16 discusses product evaluation. It teaches how to evaluate a product or item for improvement.



Using container to plant flowers

Using container to water nursery plants





The symbol of recycle



Using leftover cloths to make bag



Using pallets to make tables

Source: Internet- 2014.

Lesson 12: Identifying Materials



Introduction

Welcome to Lesson 12 of Substrand 4. Lesson 12 is the first lesson for this substrand. In substrand 3 you learnt about being a wise consumer. In this substrand, 4, you will learn about making things. In this lesson you will learn about identifying materials. That is before you can make a product or good yourself, you must find out if materials needed to make them are readily available.



Your Aims:

- Search, identify and analyse different types of local materials and their appropriate uses or for specific purposes

Identifying Specific Purposes

People have various or different needs and wants that have to be satisfied from the goods and services that are provided. In this lesson you will learn about using local materials to meet specific purposes or needs for goods in and around your local community. Goods as you have studied are tangible items.

Before producing or creating a good there has to be a need for this particular good for start. For example, in schools students really need chairs or desk to sit on to do their work. If you are going to produce or make desks for the students then you have to find out what materials are best for making the desks and if they are suitable for the students. You must also find out if these materials you need to work with are found around you and that it is easy to bring to your workshop. Since you are already going into business it would be better if you can conduct a survey to find out the needed items or good in your community. Otherwise, you might waste time and money trying something not needed. Survey refers to looking at or studying something more closely to get a general idea of what it is. The goods that are needed by the community can be handmade or made by machines.

Quality and Type of Materials to Use for Specific Purposes

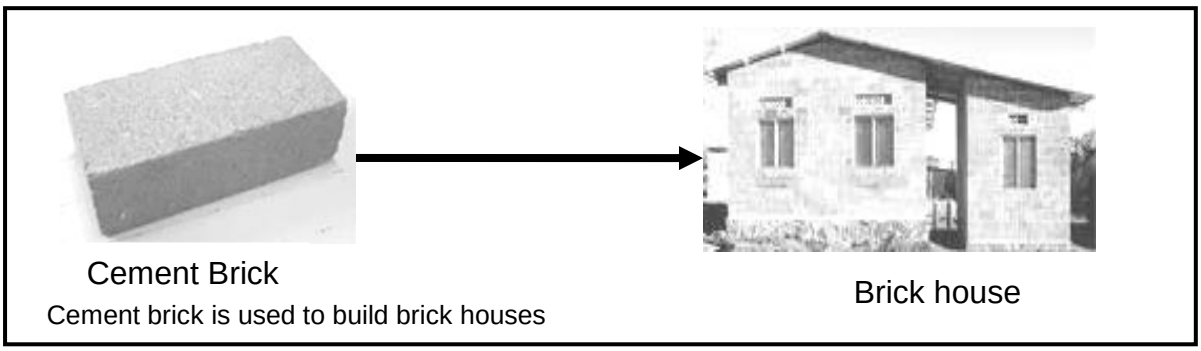
The materials that you are going to use as mentioned must be found around you. You can make the needed products or items from materials of mainly two types; *1. Manufactured Materials and 2. Material available from the Environment.*

Manufactured Materials

Plastic, metal, cardboard, plywood, milled timber, fabric, string, cement and bricks are some of the manufactured materials available that you can use to make things. This means they are ready made and you only have to buy them from the stores especially hardware houses where they are sold. Each type of materials has a range of qualities that make it appropriate to use for specific purposes. For example, plastic is suitable for hoses because it is flexible. Flexible refers to things that can bend or be moved easily without breaking. Metal is suitable for roofing because it is strong and waterproof. Cardboard is suitable for cartons because it is strong and light. Fabric is suitable for clothing because it is smooth, light and washable. The choice of material you use for a specific purpose depends on its qualities. You will have to use strong timber for a chair but three-ply wood to line a wall because strength is not required to the same extent. You use strong sheet metal for a barbecue plate but

flexible metal wire for a cooking fork. You use strong non-absorbent nylon string for a fishing line but softer absorbent cotton thread for sewing. Therefore, choose the appropriate manufactured materials for the specific purpose or need of the people. Absorbent refers to something that takes in water easily.

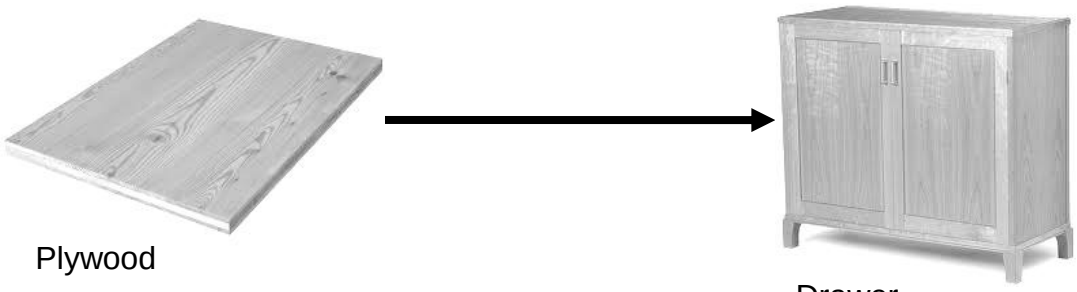
Following are the manufactured items you can use to make the appropriate needed goods.



Cement Brick

Cement brick is used to build brick houses

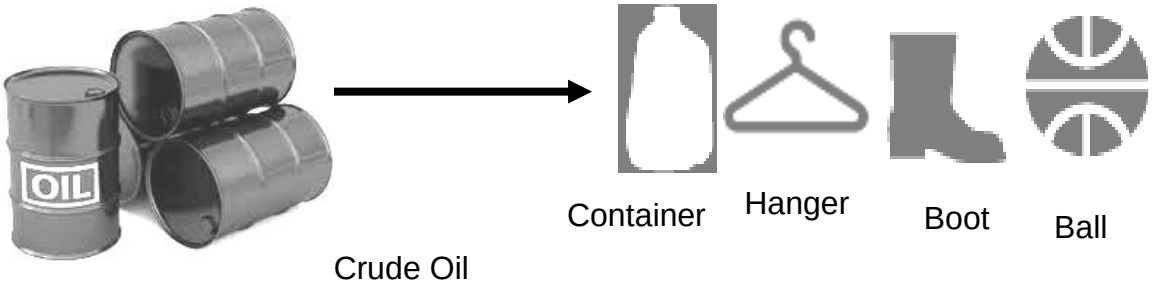
Brick house



Plywood

A thick ply wood can be used to make drawers.

Drawer



Crude Oil

Container Hanger Boot Ball

Crude oil is used to make plastic containers to store food, water and so forth, hangers, boots and ball.

Source: Internet- 2014.

Activity 12.1: Complete the activities given below.

In your local area or community list five (5) things you could make from manufactured materials that will be suitable for peoples specified purpose in your community. An example has been given for you.

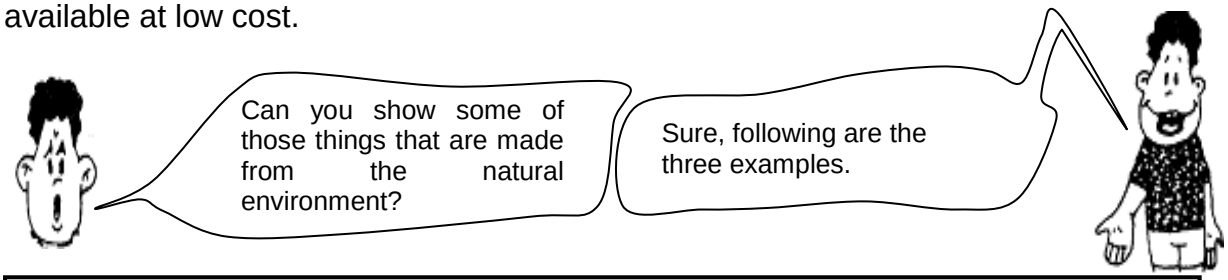
PRODUCT	MATERIALS	QUALITIES
Example; Window Curtain	Fabric-cotton	Strong washable, colourful

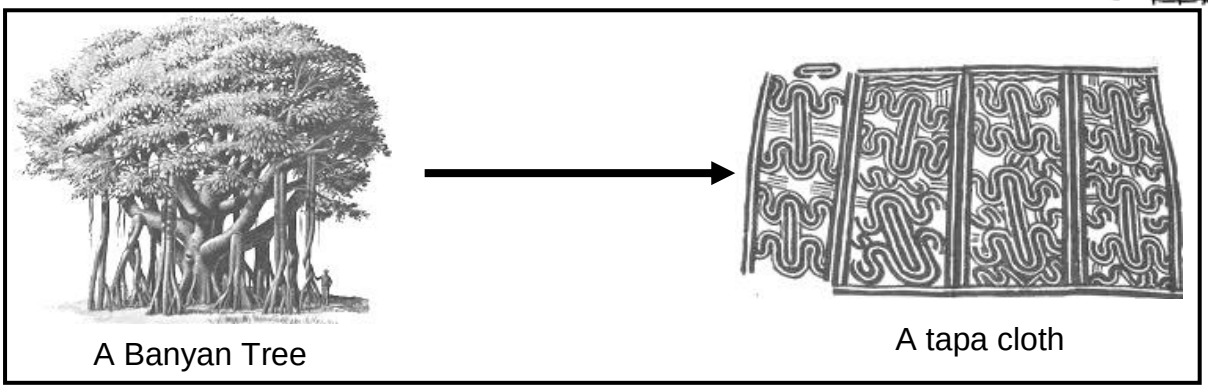
Natural Materials Available In the Environment

Bamboo, coconut shell and leaves, vine, shells, clay, bush timber, bones, cane, pandanus, kunai, pitpit, seeds, gourds, bark and kapok or cotton are some of the materials in the environment that we can use to make things.

Bamboo bridges, coconut leaf hats, vines to tie roofing beams or posts together, shell jewellery, clay cooking pots, walking sticks from canes, bone food peelers, cane chairs, pandanus mats, kunai grass roofs, pitpit trays, seed curtains, gourd lime containers, bark for tapa cloth and kapok or cotton for stuffing pillows are just some of the products made to meet the needs of the community. There are many more.

The choice of materials you use for a specific purpose depends on its availability in the environment. Building materials from sago and coconut palm trees are widely used in coastal areas where these trees grow. Kunai grass for roof thatching and bamboo are widely used in highland areas. Materials found in our local area are available at low cost.





A Banyan Tree

A tapa cloth

Source: Internet- 2014.

A banyan tree is used to make tapa cloth. There are many uses for the tapa. It is mainly made for clothing but there are other purpose it can serve also like table cloth and mat.



A bamboo tree



Bowl



Serving spoons and scoops

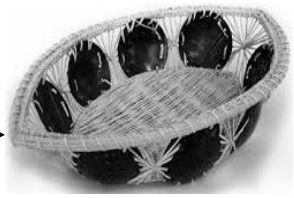


Brush

Bamboo is used to make bamboo wears like plate, brush, serving spoons and scoops.



A coconut tree



Basket



Vase

A coconut tree can be used to make basket, bowls, mat, hat, oil for cooking and for body lotion.

Source: Internet- 2014.



Activity 12.2: Complete the activities given below.

List four (4) different natural materials available in your local environment that you can use to produce items of need for people.

Material	Its use
Eg. Shells 1.	For earing
2.	
3.	
4.	

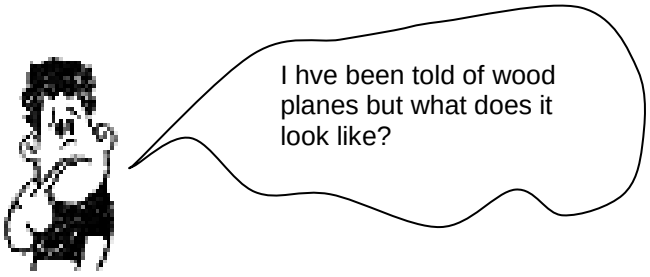
Texture, Flexibility, Strength and Shape

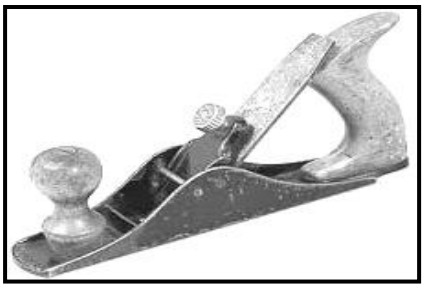
When deciding if materials are appropriate for a specific purpose, you must consider or find out the qualities such as texture, flexibility, strength and shape. What is texture and flexibility?

Texture refers to the feel or touch of the material's surface. Flexibility refers to how something can be bent, twisted or moved without breaking.

For instance, a table mat could be made from tapa cloth, fabric or pandanus and each would have a different texture or feel. Because you do not want flexibility in tables or bookshelves, you could choose materials that are rigid or upright meaning they cannot bend easily. However, if you want to weave a mat or basket, or make a strainer, you should choose materials that are flexible. Pandanus, cane, vines, fabric and bamboo.They are examples of flexible materials. Some materials are appropriate because of their strength. Nylon string is much stronger than bush fibres and suitable for fishing line. A chair, bed or table could have wooden or metal stand. The metal stand would be stronger than the wooden stand.

Bamboo tied together to make bridges across river, is strong enough for people to walk on. Some materials are soft and smooth. Fabric, for example, is used to make clothing, bed sheets and pillowcases because it is smooth next to our skin. Traditional clothing made from bush fibres, leaves and bark is not as smooth as fabric. As for timbers they are rough in their natural state. You use planes and sandpaper to smoothen the rough surfaces of timber furniture items so that you do not get splinters. Plane refers to a tool that smoothens rough surfaces of the timber. Splinters refers to a small thin sharp piece of wood, metal, stone, glass or other materials broken from a large piece. It can cause harm to people by cutting them.
Bamboo tubes are suitable to make musical instruments and cooking tubes because of the hollow inner space. Coconut shells are suitable for bowls or drinking cups because of their round shape.





The diagram above shows a wood plane. It is used to smoothen rough edges of timbers.
Source: Internet 2014.

Using Appropriate Technology

Technology is the name given to any system in which materials, tools or machines are used to make work easier. Examples of technology include the use of axes, spades, hammers, saws, sewing needles, water pumps, chainsaws, wheelbarrows, sewing machines, lawnmowers, stoves, kerosene lamps, bicycles, typewriters, outboard motors, tractors, paper, glass, plastic, candles, electricity, metal, telephones and vehicles. Knowing how to use these technologies well will help you cut down on costs as well as wastage of resources. You will be able to fully satisfy the specific purpose or needs of people in your community.

Following are some of the technologies used to produce or make goods.



Wheel barrow



Hammer



Sewing machines



Chainsaw

The diagram shows some of the tools or equipment that makes up the technology that helps to produce or make goods for specific purpose.
Source: Internet-2014.

Activity 12.3: Complete the activities given below.

Define

1. Textile. _____
2. Flexibility. _____

Summary:



You have come to the end of Lesson 12. In this lesson you learnt that;

- There are people around you who have specific purposes or needs for certain products or goods.
- Before these products or goods can be made there has to be a need for it.
- Survey would best help find out if it is necessary to produce or make a good.
- There are two types of materials people can use to create or make products to satisfy the specific purpose of other people. They are *1. Manufactured materials and 2. Natural materials available in the environment*.
- Manufactured materials refer to things that are ready made from the factory that you can use to make things to meet peoples specific need.
- Natural materials available from the environment refer to the natural things around the environment that you can use to make things to satisfy people's specific need.
- Those who are making the products or the goods must ensure that the materials they used have texture, are flexible, have strength and can be shaped.

- Texture refers to the feel or touch of the material's surface.
- Flexibility refers to how something can be bent, twisted or moved without breaking.
- Technology is the name given to any system in which materials, tools or machines are used to make work easier.
- Using appropriate technology will help cut down costs.

NOW DO PRACTICE EXERCISE 12 ON THE NEXT PAGE



Practice Exercise 12

1. What makes a person want to produce a new item?

_____

2. List the elements of qualities that are considered when deciding materials appropriate for a specific purpose.

_____

_____

_____

3. What is technology? Give three (3) examples.

_____

_____

4. Fill in the missing words in the paragraph below with the given words in bold.
Product, technology, wastage, natural, produce, way, costs, money, producing, manufactured, increase.

Both _____ and _____ materials must be chosen carefully when_____ a _____. Using the appropriate _____ will help reduce _____ of resources and cut down _____

CHECK YOUR WORK. ANSWERS AT THE END OF STRAND 2

Supplementary Information 21: Natural Building Materials

Building material is any material which is used for construction purposes. Many naturally occurring substances such as clay, rocks, sand and wood even twigs and leaves have been used to construct buildings.

The following are some of the natural materials that have been use by people from long ago and some are still being used.

1. Brush

Brush structures are built entirely from plants and are generally found in the tropical and subtropical areas such as rainforest where very large leaves can be gathered and used in building. Houses are built mostly with branches, twigs and leaves and bark similar to a beavers lodge or house. For example, our traditional houses in the village are made from the leaves of pandanus and sago. Clay soils and dung from cow are used to fill in and cover a woven brush structure. These styles of homes are found mainly in India and Africa.

Dung refers to cows excreta.



The photograph above shows a brush house in Africa with walls made of dung and grass cover.
Source: Internet-2014.

2. Ice

Ice was used by the Inuit for igloo but has also been used for ice hotels as a tourist attraction in northern areas of the world that might not otherwise see many winter tourists. Inuits are groups of people that live in the cold of North Pole.

3. Mud and clay

Clay based building usually come in two distinct or very different types. One being solid monolithic structural walls such as Rammed earth, sod and cob. Rammed earth, sod or cob refers to piling earth like mixed clay into walls. These walls form a house according to designs that have been planned. The other being walls built by stacking building blocks or bricks. This is done by forming the clay into individual units or blocks which are then dried or fired, example includes compressed earths and bricks. Other use of clay in building is combining straw with clay to create light clay insulation plaster.



The photograph above shows rammed earth house.
Source: Internet-2014.

4. Thatch

Thatch is one of the oldest building materials known. Grass is a good insulator or blockage of sun rays and heat. It is easily harvested. African tribes have lived in homes completely made from grasses and sand year round. In Europe, thatched roofs on homes were once prevalent or widely used but the materials fell out of favour, although, the practice is undergoing a revival or is being used again. In the Netherlands, for instance, many new buildings have thatched roofs with special ridge tiles on top.



The photograph shows a thatch house in Papua New Guinea.
Source: Internet-2014.

5. Sand

Sand is used with cement and sometimes lime to make mortar for masonry work and plaster. Sand is also used as part of the concrete mix. An important low-cost building material in countries with high sand content soils is the sandcrete block which is weaker but cheaper than fired clay bricks. Mortar refers to a material like glue but made of mixture of sand, water and cement or lime that becomes hard. It is used to hold bricks and stone together in building. Masonry refers to stone work and a person who builds houses or other buildings out of rocks is called a mason.

6. Stone or rock

Rock structures have existed for as long as history can recall. It is the longest lasting building material usually readily available. There are many types of rocks throughout the world, all with different styles that make them better or worse for particular uses. Rock is a very dense or heavy material so it gives a lot of protection too. Its main drawback or disadvantage as material is its weight and awkwardness. Awkward refers to difficult or uncomfortable to use. Its energy density or weight is also considered a big drawback as stone is hard to keep warm without using large amounts of heating materials like firewood.

Dry stone walls have been built for as long as humans have put one stone on top of another. Eventually, different forms of mortar were used to hold the stones together, cement being the most commonly use nowadays.

Stone buildings can be seen in most major cities. Some civilization or city's developments were built entirely with stones such as the Egyptians and Aztecs pyramids and the remains of the Inca civilization. Aztec is a place in Mexico and Inca is a place in Columbia. Both countries are in the continent of South America.

7. Wood and timber

Wood has been used as a building material for thousands of years in its natural state. Today, engineered wood is becoming very common in industrialized countries. Engineered wood refers to wood that have been designed and manufactured to last long. Industrialized countries refer to countries that have a lot of industries that make things such as cars. Examples of such countries are Japan, United States of America and Australia.

Wood is a product of trees and sometimes other fibrous plants are used for construction purposes when cut or pressed into lumber or timber such as boards,

planks and similar materials. It is a generic building material used in just about any type of structure in most climates. Structure refers to the things that can be built from wood like house, cupboard, tables and chairs. Generic refers to suitable for any or common use. Wood can be very flexible under loads, keeping strength while bending and is incredibly strong when compressed or packed tightly vertically. There are many different qualities to the different types of wood even among same tree species. This means specific species are better suited for various uses than others. Growing conditions are also important for deciding quality of wood.

END OF SUPPLEMENTARY READING 21

Supplementary Information 22: Man-Made Building Materials

Apart from naturally grown materials, many man-made products are in use, some more and some less synthetic. Synthetic refers to something made or created through chemical processes using petroleum. They are sometimes referred to as artificial or man-made.

The manufacturer of building materials is an established industry in many countries. The use of these materials make jobs such as carpentry, insulation, plumbing and roofing work easy. Insulation refers to materials that block the suns rays and heat from causing damages to things including people. Building materials make up the habitats or homes for people.

The following are man-made materials used for building.

1. Cement Composites

There are building materials made out of cement like concrete. Concrete is made up of hydrated or watery mixture of cement paste that binds or sticks woods, particles or fibre to make the desired or wanted shape of a building as well as the different parts of that building according to the design of that building. Fibre refers to material, cloth or fabric. For instance, the materials that are sown together to make your shirt or trouser. Fibrous materials like paper, fiberglass and carbon-fibre have strength of binding or sticking things together.
Wood and natural fibres slow down cement from being formed properly. This is because they are made up of various or many different soluble organic or natural chemicals like carbohydrate, glycosides and phenolic. Soluble refers to something that is easy to dissolve and disappear in water. Before using wood in making things that will include cement check the suitability of woods compatibility or ability to hold together with the cement.

2. Concrete

Concrete is a composite building material made from combining cement. The most common form of concrete is called Portland cement which is made up of rock mineral like gravel and sand. After mixing the gravel and sand with the cement, the cement hydrates or watery mixture eventually hardens into a stone-like material. The hardened stone is the concrete.

3. Fabric

The tent is the home of choice among nomadic or wanderer groups all over the world. Two known types of tent include the conical teepee and the circular yurt. Due to the development of fabric architecture and synthetic fabric the use of tent is growing in demand.
Modern buildings can be made of flexible or moveable and bendable material such as fabric and supported by wires made of steel.

Turn to the next page to see the two types of tent.



Teepee Tent



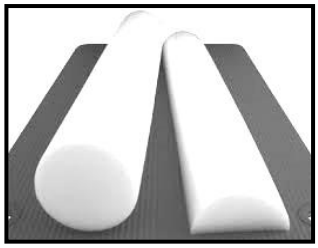
Yurt Tent

The two types of tent.
Source: Internet-2014.

4. Foam

Foams are light weight, easy to shape and an excellent insulator. Insulator refers to something that keeps off suns heat and rays. Recently, synthetic foams called polystreme foams have been combined with concrete to make building materials. Synthetic refers to something made through chemical process using petroleum.

FOAM

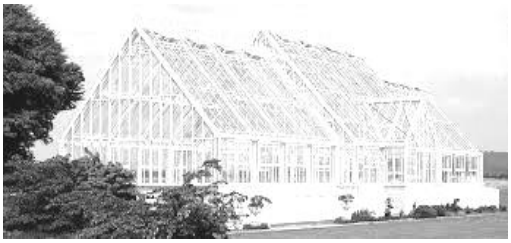


5. Glass

Glassmaking is considered an art form as well as an industrial process or material. Clear windows have been used since the invention of glass to cover small opening in a building. Glass panes or windows provided humans with the ability to both light into rooms while at the same time keeping inclement weather outside. Inclement means stormy.

Glass is generally made from mixtures of sand and silicate heated in a very hot fire stove called kiln and becomes very brittle or easy to break. Additives or other things are often included in the mixture used to produce glass shades of colours or various characteristics such as bullet proof glass or light emittance. Light emittance refers to glass that can allow light to pass through it.

The use of glass in architectural buildings has become very popular in the modern culture. Glass curtain walls can be used to cover the entire of a building or it can be used to span or spread over a wide roof structure. These uses though would require a very large kiln to be used to span or spread such large size of glass.



Glasshouse



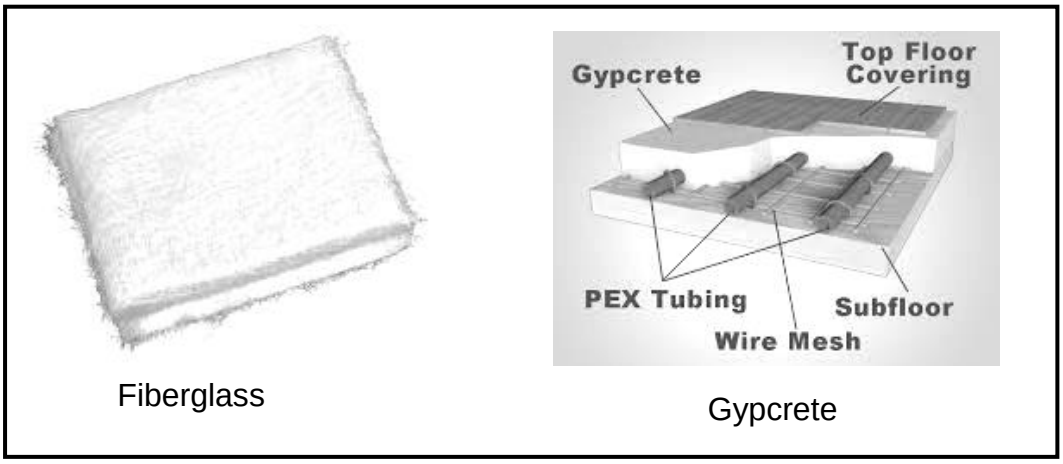
A Kiln

The photographs of a glass house and a kiln where glass is heated and formed.
Source: Internet: 2014.

6. Gypcrete

Gypcrete is a mixture of gypsum plaster and fiberglass rovings. Fiber glass is glass made in to very thin fabric or material. They are used to make dinghies and boats. It has many other uses as well. Roving refers to moving or traveling from one place or thing to another.

Gypsum is a white colourless mineral made up of slurry or watery chemical mixture of calcium sulfate. Although plaster and fiborous plaster have been used for many years, especially for ceiling. In the early 1900s serious studies of the strength of a walling system called Rapid Wall, using a mixture of gypsum plaster and 300mm plus fiberglass rovings were investigated. It was discovered through testing at the University of Adelaide that these walls had significant load bearing shear and lateral resistance. Load bearing shear and lateral resistance means that the walls though very heavy could be moved smoothly and the sides of it cannot be affected if there were hard and fast movements. Also at the same time the walls were earthquake resistance, fire resistance and had thermal or heated water properties. Resistance refers to something that cannot be easily damaged. Gypsum is a mineral that is mined and is abundant or more in supply. Manufactured or by-products from gypsum are chemicals called Flue Gas Desulfurization (FGD) and phosphor gypsum. They are fully recyclable and offer significant or important environmental benefits.



Fiberglass

Gypcrete

The pictures above shows fiberglass and where gypcrete is used when constructing buildings. Source: Internet-2104.

7. Metal

Metal is used as structural or structure framework for larger buildings such as skyscrapers or as an external or outside surface covering. There are many types of metals used for building. Metals can be used to build buildings such as Quonset hut. It can be seen used in most cosmopolitan cities. It requires a great deal of human labour to produce metal, especially in the large amounts needed for the building industries.

QUONSET HUT



Source: Internet-2104.

Corrosion is metals prime enemy when it comes to longevity. Corrosion refers to weakening of something through chemical process.

- Steel is a metal alloy whose major component is iron and is the usual choice for metal structural building materials. It is strong, flexible and if refined well and or treated lasts a long time.
- The lower density or weight and better corrosion resistance of aluminum alloys and tin sometimes overcome their greater cost. Alloy refers to mixture of metals.
- Copper is valued building material because of its advantageous properties. These includes corrosion resistance, durability or long lasting, low thermal movement, light weight radio frequency shielding, lightning protection sustainability, recyclability and a wide range of finishes. Cooper is combined with other materials to make into roofings, flashings, gutters, downspouts, domes, spires, vaults, wall claddings, building expansion joints and indoor design elements.
- Other metals used include chrome, gold, silver and titanium. Titanium can be used for structural purposes, but it is much more expensive then steel. Chrome, gold, and silver are used as decorations because these materials are expensive and lack structural qualities such as flexibility strength or hardness.

METAL PRODUCTS



Roofing



Gutter

METAL PRODUCTS



Dome



Spires



Vault

Source: Internet-2104.

8. Plastics

The term plastics cover a range of synthetic products that can be molded or shaped into objects, films, or fibers. Their name is derived from the fact that in their semi-liquid state they are malleable. Malleable refers to being able to be bent and shaped. Plastics are very immensely or largely in heat tolerance, hardness and resiliency. Resiliency refers to recovering quickly from a problem. The lightness of plastic and it being able to tolerate heat, being hard and resilient has many industrial uses.



The photograph above shows a plastic product which is plastic pipe.

END OF SUPPLEMENTARY READING 22

Lesson 13: Making a Product



Introduction:

Welcome to Lesson 13. In the last lesson you learnt the importance of selecting and collecting materials carefully according to the needed designed product or products. You also looked at the quality of materials from the local environment. In this lesson you are going to learn how to make a product.



Your Aims:

- Plan, design and develop or make a product

Project Idea

When making a product there are three things you will be involved with. They are planning, designing and making the product itself. Once you have the intention of making a product to meet the need of the people, ready for a business project. You are now spending money to make more money by meeting the peoples need for certain things. There are many projects you can do to meet people's needs.
Here below, are ten areas of needs where you can make many different products or goods for people who need them.

i. Furniture: Explore alternatives or ways and design ideas to make furniture. They could be benches, beds, chairs, cushion-chairs, tables, cupboard, bookshelves, desks or tools.

ii. Construction: Draw a plan of the item you wish to construct or build. It could be a pit toilet, stall for selling goods, stepladder, trestle (a braced framework with horizontal beam and sloping legs), room divider, footpath, footbridge or playground equipment.

iii. Cooking: Consider making things related to cooking. You could make clay pot, hollow drum for mumu, food safe, barbeque firestand, coconut scraper, drum oven, tray, sawdust stove, cutlery box, grater, chopping board, tongs or cooking utensils.

iv. Gardening: Investigate alternative design ideas for things to make for gardening purpose. They could be digging sticks, spades, garden forks, wheel barrows, irrigation systems, strings and stakes. Stake refers to sticks for tying creeping and crawling plants on so they bear fruits properly.

v. Clothing: Design clothing items you could make for personal use or to sell. They could be children's clothing, dresses, blouses, skirts, laplaps, shorts, shirts, trousers, aprons or hats.

vi. Entertainment: Create plans for items you could make for entertainment purposes. They could be flutes, drums, kundus, garamuts, ukuleles, bamboo tubes, sports equipment like bats and balls, goal posts, playground equipment or a dartboard.

vii. Craft: Be creative in designing craft items to make. They could be photo frames, vases, mats, bilums, baskets, artefacts, walking sticks, fans, lampshades, waste-paper baskets, pencil holders or a sunshade.

viii. Fishing: Explore ideas for items you could make related to fishing. They could be canoes, spears, traps, lines, nets, or a fishing basket.

ix. Hunting: Plan items you could make for hunting purposes. They could be bows and arrows, spears, axes or clubs.

x. Gathering: Design items you could make for gathering purposes. They could be bilums, or baskets. They could be carried by hand, over the shoulder, on the head or on the back.

1. Planning for the product

Before planning to make that particular product, you need to do a survey. Survey as you have already studied refers to looking at or studying something more closely to get a general idea of what it is. Carrying out a survey will greatly help you find out more information on the demand for that good and the materials to be used. It will also help you find out the opportunities involved in producing that particular good. After collecting all the necessary information, you then choose the product you are able to make.You will now plan on making that particular good. Your plan will look at the following areas.

- What will the product look like?
- What size will it be? What resources are needed?
- Where will the resources come from?
- What needs to be bought and can you afford it?
- What are the steps involved in making the item? Steps in the correct order.

Write down a plan of action for the object you are going to make. This will probably be a set of instructions to follow. Start by drawing a picture of the thing you will make and end with an item ready to be sold. With this you will now move onto designing the project.

2. Designing the product

Designing refers to making detailed plan of a form or structure of something. For example, you may be planning to make kundu drums to sell because there is a great need for it. You design or make a detail plan of how you are going to make the kundu. You either have a drawing or write down the steps in order of how it will take to shape. It is important that ideas are put on paper either as drawings or a written description to have a clear picture of what is in your mind. When ideas are put on paper, you can look at them many times and make changes. It also helps you to think ahead and find the necessary materials available and the most suitable ways of completing the project. With this, possible mistakes can be avoided. The idea of designing the kundu also applies to other goods. Ensure or make sure that the design will satisfy those who get to consume or use it.

3. Making the product

Working and finishing the project is easy when you have chosen the best available materials and the most efficient way of doing it. Plans on the method of making that particular item also provide directions on how to make them. For instance, have you used a recipe for baking a cake? A recipe is one kind of plan.

What you are making will determine the materials you need to collect or buy. Materials need to be carefully selected to suit the needs of your design. You must consider or take note of the strength, flexibility, texture, shape and color of the materials. You have already studied these in your last lesson.



Activity 13.1: Complete the activities given below.

You are to visit your local area or community and list down the things you can make with the materials found around you that are greatly needed by the people.

Testing and Evaluation

It is important to check that the item you have made works in the way you imagined. Try your products out. Look for faults or mistakes. Answer these questions:

- Was the design successful? Why? Why not?
- Which features are successful?
- Which features did not work?
- What were the problems in making the items?
- How can the products be improved?
- Would you repeat the process to make the same things again? Why? Why not?
- What changes could be made?
- Will you try a different project?

When selling the products or the goods, calculate the cost of production so the price you set for the products will be reasonable. At the same time you are able to make profit. Questions to consider or take note of when selling your finished products.

- When and where will the product be sold?
- How will the product get to where will be sold?
- What will happen to unsold items?
- Will it be advertised?
- How will people know that it is available?
- Who will sell it?
- Will money be needed to give change to buyers?
- Is there a need for the money to be put in the bank?
- What records do I need to keep?

Always keep a record of the sales to know if you have made a profit or loss.
The sales will help you to avoid wasting money since you will know which items costs a lot. You will learn more in detail about costing in your supplementary reading 29



Activity 13.2: Complete the activities given below.

1. List the three things that that are involved in producing a good?

(a)_____ (b) _____ (c) _____

2. Look at the materials found in and around your local area or community and suggest what you would do for the following situations.

(a) Your uncle has a very sore knee. He cannot walk around easily. What can you make to help him move around easily or comfortably?

(b) Dogs have eaten two of your chickens. What can you make to protect your chickens?

_____

(c) Your books got wet when you were walking home in a storm. What can you make to keep your books in good condition?

_____

(d) Your little brother keeps his pencils and biros in the bilum. He realised that the pencils and biros keep on falling out. How can you help him?

_____

Summary:



You have come to the end of Lesson 13. In this lesson you learnt that;

- When making products or goods there are three things people will be involved in. 1. Planning, 2. Designing and 3. Making the product.
- Designing refers to making detailed plans of a form or structure of something.
- Making the product refers to making the actual project for people to buy and consume.
- There are about ten projects people can get involved with to do business at the same time satisfy needs of the people. They are;
  1. Furniture
  2. Construction
  3. Cooking
  4. Gardening
  5. Clothing
  6. Craft
  7. Fishing
  8. Hunting
  9. Gathering
  10. Entertainment
- Always check your products or goods by testing it.
- Make evaluation of the work on the product. That is, from the planning to the designing and creating of it. If problems are encountered or found than work on it to improve the product.
- There must always be records of the sales of the product or the good.
- Keeping record will help you know if you have made a profit or loss for the business.

NOW DO PRACTICE EXERCISE 13 ON THE NEXT PAGE



Practice Exercise 13

1. Fill in the table by writing down the areas of need by people where you can be involved in by producing the needed products or goods. An example has been done for you.

Areas of Need	Products or Goods
Example: Decorations	Carvings, knitted flowers tied on wires and attached to soap.

2. State the importance of putting ideas on paper?

_____
_____

3. Why is it important to test and evaluate your product?

_____
_____
_____

CHECK YOUR WORK. ANSWERS AT THE END OF SUBSTRAND 2

Supplementary Information 23: Making a Pillow Case

In the subject *Making a Living* which you are now studying it teaches basic things about how people can look after themselves by making use of things that are around them whether they are consumers or producers. There are things that people can make for themselves or to sell.
Here, you will learn the steps to making pillow cases. If you are new to sewing, making pillow cases is a great way to start learning the skill. Pillow cases are easy to make and they can add just the right accent to your bedroom. Accent refers to style.
There are two types of pillow cases you can make however we will look at the first method which is the easiest one.

Method 1: Basic Pillow cases

Step1: Pick out fabric or materials

Pillow cases are often made from fabric that feels comfortable against the skin, like soft cotton, satin, flannel or a jersey knit fabric. If you are making pillow cases that are more decorative in purpose, the material you choose doesn't have to be soft or quite as easily washable. Choose any type of material you would like to complement the colour scheme or set up in your bedroom. Complement refers to match.

Step 2: Cut the material to size

To make a standard pillow case, use a scissors or a rotary cutter to cut out a piece that is 114cm x 91cm. If you are using a patterned material, take care to cut it so that the pattern is straight.

Step 3: Fold the fabric or material in half

Fold it length-wise with the finished sides or "right" sides of the fabric or material together. The unfinished sides or "wrong" sides should be facing out.

Step 4: Stitch the long side and one short side

Use a sewing machine or a threaded needle make a straight stitch up the long side of the material. Turn the material and continue stitching one of the short sides. When you are finished, turn the material right side out.
Use a thread that matches your material or a contrasting thread to add a little flair.
If you're stitching by hand, take your time and make sure your seam is completely straight. You can pin the material with tacking pins to help guide you’re stitching if necessary. Seam refers to the point where the pieces of materials are joined together.

Step 5: Hem the open side

Hem the open side. Start by folding the material back to create a 1 to 2cm hem. Iron the material to create a crease. Fold the material back again, this time creating a 6cm hem. Iron the material again and use your sewing machine or a needle and thread to stitch around the base of the hem to keep it in place. Crease refers to a straight line formed in clothing or fabric by pressing.

Step 6: Decorate the pillow case

You can add ribbon, decorative lace, or other decorations to the finished pillow case. Consider sewing a colourful contrasting ribbon over the hemline to hide the stitch there.

END OF SUPPLEMENTARY READING 23

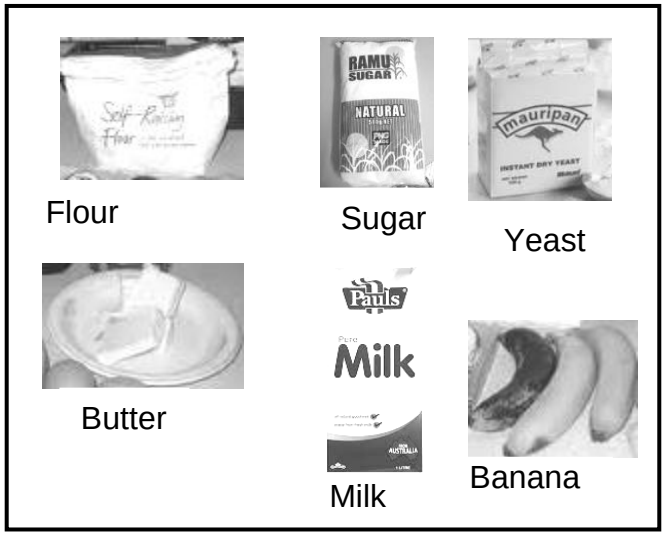
Supplementary Information 24: Making Banana Scones

Learning the skill of cooking and sewing is very important as it will help you sustain your lives in the future. For those who are not are not able to make it into formal employment you can use this skill to earn income for yourselves. Here, you will learn how to make or bake banana scones.

Before you can start have the following ingredients on hand.

Ingredients

1. 2 cups of flour
2. 2 teaspoons baking powder
3. ¼ cup sugar
4. 3 tablespoon of margarine
5. 2 ripe bananas
6. 250 ml milk



Ingredients for making scones.
Source: Internet-2014.

Steps to baking the banana scones

Step 1: Mix the dry ingredients

In a wide bowl mix all the ingredients. That is, pour in the flour, the baking powder and the sugar then mix them

Step 2: Add margarine

Rub the margarine or butter into the mixture of dry ingredients. Then with your hand mix the margarine until the dry ingredient is now wet and has been covered with butter.

Step 3: Mix in the mashed banana

Make sure the banana has already been mashed. You add in the mashed banana and mix well.

Step 4: Mix in the milk

Stir in the milk to make soft dough. Do not pour in all the milk at the same time. Pour slowly and do so until you see that your mixture is not too wet and not too dry but is easy to hold and knead or shape.

Step 5: Shape the dough

After making the dough you shape them round. Place them onto the greased tray.

Step 6: Bake the scone

Heat the oven to 180˚C (Degree Celsius). Place the tray of scones into the oven and bake for 10 minutes or until golden brown.

Steps 7: Serve and Eat

Take out the baked scone serve it hot with butter and have it with tea or coffee.

Note: If you do not have an electric oven you can use a drum oven where fire is required. If you do not have both the electric oven and the drum oven then you can do this.

Place the scones into a saucepan or pot that has no holes and is air tight. Make fire with strong wood. Once the flames have died out and the charcoal is red hot put the pot on the wire mesh to bake. Also put some heat or the hot charcoals on the top of the pot so that the top of the scone is baked as well. Check from time to time to see that the scone is golden or brown in colour then you take the pot off from the heat.

END OF SUPPLEMENTARY READING 24

Lesson 14: Reusing and Recycling Materials



Introduction:

Welcome to Lesson 14. In the last lesson, you looked at the importance of planning, designing, collecting the materials and processing the product for personal or economical use. In this lesson, you will look at reusing and recycling materials.

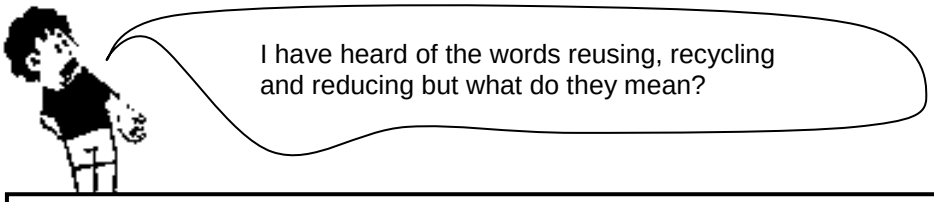


Your Aims:

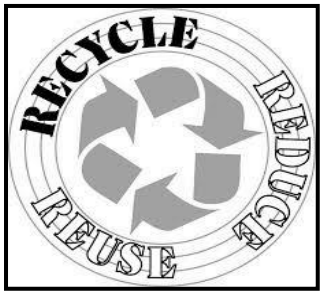
- Identify the values of reusing and recycling materials and resources
- Observe, identify and analyse used manufactured materials for recycling and reusing purposes.

Values of Reusing and Recycling

Reusing and recycling as well as reducing wastes are very important methods in managing waste materials or rubbish. Why should more attention be paid to these very important methods of controlling waste materials or rubbish especially those made by human beings? In this century or period of time people need to control their waste materials or rubbish as these can becomes hazardous or very dangerous to the environment including the themselves. The more people there are, the more the demand for food increases. More food will be bought, caught, grown and eaten. These all lead to creating more of rubbish.



1. Reusing means to using something again, often for a different purpose.
2. Recycling refers to processing or changing of used or waste materials into something different so that it can be used again.
3. Reducing refers to lessening or decreasing the number of items you use.



All manufacturers of products or goods must have the reusing, recycling and reducing symbol on the products or goods they produce. Also people should be educated or informed on the disposal or dumping of their waste or used items. Knowing what the symbol means as shown on the left will greatly help countries to control waste or rubbish and help save the environment.

The symbol means a manufactured product that can be recycled, reused or reduced.
Source: Internet-2014.

Activity 14.1: Complete the activities given below.

1. Define
(a) Reusing._____
(b) Recycling._____
(c) Reducing._____

2. State importance of reusing, recycling and reducing.

_____

Purposes of Reusing, Recycling and Reducing Used Manufactured Materials

The aim or purpose of using these three methods is to manage or get rid of waste materials or rubbish to minimise or reduce wastage of resources.
Waste materials or rubbish are mainly of two types. They are *i. bio-degradable and ii. non- biodegradable.*

i. Biodegradable

Biodegradable refers to something that can decompose or decay or rot quickly as a result of the actions of bacteria. Such waste materials are organic or natural like plants and food scraps and also manufactured materials like paper products, plastics and leather handbags. For example, if someone throws away an old basket that has been made from the coconut leaves, eventually the leaves will rot and tiny insects and bacteria will feed on it. The basket will gradually or slowly change into soil.
Due to improvement in technology manufactured items such as papers and plastics are now biodegradable, They can decompose or decay too. They are sometimes referred to as eco-friendly items. That is, bacteria can feed on these products and cause it to break down and change into soil. They do not harm the environment but help save it.



Food Scraps



Bag



Basket

The photographs show biodegradable items.
Source: Internet-2014.

ii. Non-biodegradable

Non-biodegradable refers to things that cannot decompose or decay quickly. This includes waste materials which are mainly manufactured or machine made. These materials are made of materials such as plastics, tins and glasses. They will take a very long time to decay or not at all. For example tyres of vehicles. If they are dumped as rubbish it might take a thousand years before it decays. Burning will add more pollution to the air. Pollution refers to adding harmful substances or things to

something. When tyre is burnt it give off carbon dioxide which increases the air pollution. You may have learnt in your science and social science lesson about carbon dioxide and the effects of increased carbon dioxide in the air.



Plastics



Tyre



Aluminum or tin water bottle

The photographs above show products that are non-biodegradable.
Source: Internet-2014.

Activity 14.2: Complete the activities given below.

1. Define pollution. _____
_____

2. Explain the difference between bio-degradable and non-biodegradable.
_____
_____
_____

Wise management of waste materials involves following the three Rs: *Recycle, Reduce and Reuse***.** Instead of throwing things away or burning them, you should think of ways to recycle, reduce or reuse these waste materials.

Let us go through these three methods. You will learn more about these in your supplementary information 27 and 28.

1. Reusing

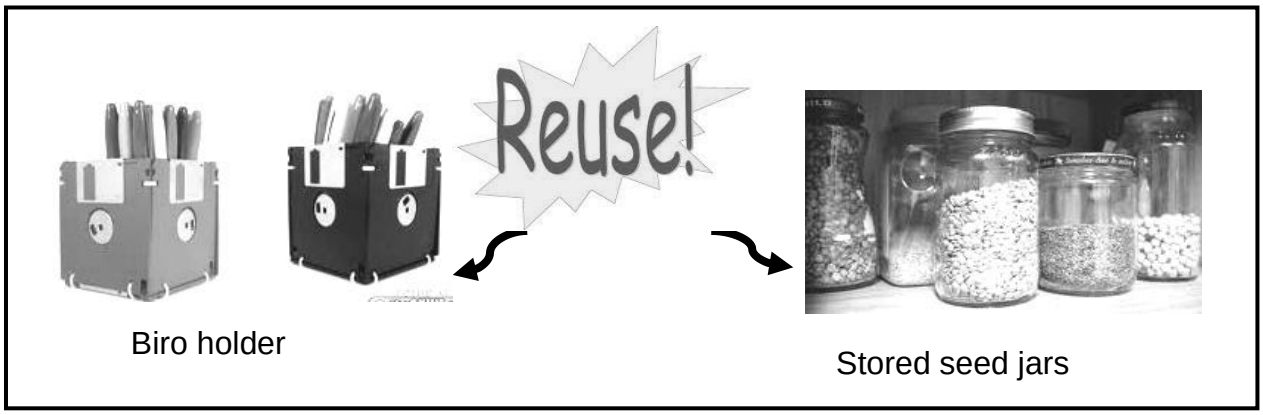
Waste materials can be reused in the following manner.

- Old clothes that can no longer be worn can be used in a number of ways such as rags or wear for doing dirty jobs around the house. They can be cut into long strips and used to tie things. A more creative use could be to cut them into long strips to make a colourful mat to use in the house.
- Soft drink cans can be used to make toys.
- Food scraps can be used either to feed the pigs or to help make compost.
- Old newspapers, papers, and cardboards come in many different shapes and sizes. They can be used to protect seedlings in the garden. Toilet roll cardboard can be used as curtain holders.

- Soapy water that you have left over from washing your clothes can be reused. Instead of just throwing it away, throw it over any citrus trees you may have in your garden. The soapy water on the leaves helps protect the tree from certain plant diseases.
- If a tyre is worn out and can no longer be used then the right thing to do would be to make it into a flower pot. Many people try to burn tyre which is very dangerous. It definitely contributes or adds to the air pollution by increasing carbon dioxide in the air.

Following items can be reused.

You can do this too.



Biro holder

Stored seed jars

The photographs above show 1. Old disks reused as biro holder.
2. Empty jam and vegemite bottles reused for storing seeds.

Source: Internet- 2014.

2. Recycling

Recycling refers to processing or changing a product into something different from what it was like before. Recycling helps lessen the pollution that may result from waste disposal. Examples of things that are often recycled are glass, plastic, newspapers, aluminium cans, used motor oil, and batteries. Waste materials can be recycled in the following manner.

- Children's clothes can be made from an old laplap or bed sheet.
- Wood from a damaged table could be turned into a stool.
- A plastic drink bottle can be turned into a plant holder.
- Scrap sheet metal can be made into a barbecue plate or cooking tray.
- Cardboard cartons can be made into storage boxes.
- Coconut shells can be turned into bowls, buttons, or necklaces.
- Rice and flour bags can be made into carry bags.
- Paint tins can be recycled as sawdust stoves.
- Small fuel drums can be turned into seats.

If you live in one of the larger towns in Papua New Guinea, you may be able to recycle some items. However, if you live in a remote part of the country, it may be very difficult to send back these things for recycling. The cost of transport can be expensive. If this is the case, then you can still dispose off the item in a wise.

This helps conserve raw materials and energy that manufacturers would otherwise use in producing new products. Recycling also reduces the amount of material going into landfills. Landfills refers to areas where wastes are buried. Landfills have very negative or bad effects in the long run. For instance, the land can no longer be used

to plant crops at the same time taking up space for housing or other building for development to take place.
Here below, shows you items that have been recycled.



Can Coke Key tag Chair

The photographs show recycled items from can coke.
Source: Internet-2014.



Trye Sandal Flower pot

The above photographs show recycled items from used tyres.
Source: Internet-2014.

3. Reduce

Reduce means lessening or decrease the number of item you use. It means to cut down on the quantity. If you think of ways to cut down on how much waste you make in the first place, then it will not be as big a problem. This will also greatly help save the earth's resources. The following are the manner in which resource can be reduced to cut back on the waste materials.

- When shopping, use bilums instead of plastic bags.
- Buy plain-packaged products to reduce flashy bulky packaging.
- Buy a large-sized product instead of two or more smaller products to reduce packaging.
- Start a compost heap to reduce the amount of food and garden scraps being thrown into your rubbish bin.
- Use cups and plates that can be washed and used again instead of paper or plastic items.
- Use cloth instead of disposable nappies for babies.
- Reuse empty glass jars as vases or storage containers.
- Reuse plastic bags from stores to hold rubbish.
- Wash and reuse disposable plastic cups, plates or utensils, do not throw them away after one use.
- Repair things where possible instead of throwing them away to buy new ones.

- Hold a yard sale when you have things to get rid of. Other people might find a use for items that you would otherwise throw away.
- Reuse gift paper when wrapping presents or covering books.
- There is also another way in which waste can be reduced. Some waste material takes up a lot of space, for example, empty cardboard cartons. They can take up a lot of space even though they are empty inside. The space taken up by these cartons can be reduced simply by squashing them up and lying them flat against each other they will take up less space.



Activity 14.3: Complete the activities given below.

1. Explain land fill

_____
_____

2. What negative impact will land fill have on the environment?

_____
_____
_____
_____

Summary:



You have come to the end of Lesson 14. In this lesson you learnt that;

- People can save the environment by controlling their waste materials.
- Peoples waste material or rubbish can be reduced by these three important methods; *reusing, recycling and reducing.*
- Reusing refers to using something again, often for a different purpose.
- Recycling refers to the processing or changing of used or waste materials into something different so that it can be used again.
- Reducing refers to lessening or decreasing the number of items you use.
- If waste materials are not disposed off properly this can cause damage to the environment.
- Pollution by waste material is very hazardous or dangerous.
- Pollution refers to adding harmful substance to something.
- Waste materials are of two types; biodegradable and non-biodegradable.
- Biodegradable refers to something that can decompose or decay quickly as a result of the actions of bacteria.
- Non-biodegradable refers to things that cannot decompose or decay quickly.
- Manufacturers of products must have the symbol of reusing,
- recycling and reducing on their products.
- People should be educated on the importance of reusing, recycling and reducing to help save the environment.

NOW DO PRACTICE EXERCISE 14 0N THE NEXT PAGE



Practice Exercise 14

1. Why is it good to use recycle materials?

_____
_____

2. Fill in the table by writing down the products that can be made from these recycled materials. An example has been done for you.

Waste	Product
Example: Tyre	Flower Pot
Old used Rice bags	
Empty Cans	
Old news papers	
Old Cord board	
Used Coconut Shells	

3. List some ways you can help people know about the three methods of controlling waste materials.

_____
_____
_____
_____

CHECK YOUR WORK. ANSWERS AT THE END OF STRAND 2

Supplementary Information 25: Reducing Waste at School

As you have learnt in your lesson there are three ways that people can use to control waste materials. They are reusing, recycling and reducing. These methods of reducing waste materials should be made clearly known to all people including the children. Here, we will look at ways in which children can be educated on how to manage waste materials at their schools. When they do these it will encourage them to practice these at home and the community where they live. In the future their actions will have a greater impact on the environment by saving it.

1. Pack a no-waste lunch

A no-waste lunch is a meal that does not end up in the trash or rubbish bin. You can buy food items in bulk then put them in reusable containers to carry to school.

Example: Use a reusable lunch box or bag and fill it with your lunch in reusable containers. You could also include a cloth napkin-don't forget to bring it home so you can wash it and use it again. Another idea is to ask your school cafeteria or canteen to use items such as reusable trays, napkins and silverware like knives, spoons and forks.

Benefits: You create less waste by using washable containers to pack your lunch. Packing your food in reusable is typically less expensive than buying food that comes in disposable containers or plastics.

2. Take only as much food as you will eat

In developed countries like United States of America more than 20 percent of the food they buy get thrown away. One way to figure out how much food they waste is to measure and track all the food they throw away from lunch over a fixed period of time. Then they could brainstorm ways to reduce how much food they are throwing in the garbage or rubbish bins. Our country could try to follow such way to manage food rubbish in our schools.

Example: If you are bringing lunch from home, you can use an ice pack so that it stays fresh until it is eaten.

Benefits: By taking only what you can eat or sharing your extras with a friend you are taking steps to waste less and save money. When such countries like United States of America does this it can reduce the 48 million tons of food thrown away each way.

3. Carry a few reusable

At the beginning of each school year, it seems like we need to buy lots of supplies. When you go to the store, look for durable, long-lasting supplies and reuse them. Durable refers to something that can last for a long time.

Example: Refillable pens and pencils, a durable backpack and a lunchbox are all great examples of products that can be used over and over again.

Benefits: Items that can be used more than once will reduce waste. If you take care of them, they will last a long time. And maybe you won't buy new ones the next year.

4. Use less paper

Even though we recycle much of the papers we use, it is still significant or important part of what we throw into the trash or rubbish bin. Think about all the papers you

have thrown away that only had writing on one side. Those pieces of papers could have been used a second time, potentially cutting your paper in half. Also by buying paper and notebooks that contain recycled paper, you complete the recycling loop and create less waste. Loop refers to a space so in in this case paper is fully recycled.

Example: Make room in your classroom or at home to put paper that has only been used on one side. Use that paper for notes on one side. Use that paper for notes, or feed the blank side into the printer for draft documents. You can also make scratch pads out of that single-sided paper by binding one side.

Developed countries like the Unites States of America where students have access or are able to use own computer at school and home do assignments and save it into a computer disk also known as CD or send or through e-mail and give to their teachers. That is already saving papers.

Benefit: Because paper and packaging makes up a large part of our garbage by using less paper you can reduce up to 40 percent of trash or rubbish that are thrown away.

5. Organise a school-wide rummage sale.

Rummage sales are great way to pass along items that you no longer want to someone who might need them. Instead of throwing your unwanted items away, they will be put to good use. Rummage refers to searching through things.

Example: Plan a class or school wide rummage sale with your teacher. Collect donations for the sale. Sell used items such as clothes, furniture and sporting goods at end-of the-year sale.

Benefit: Buying used items is not only cheaper but someone else's trash might be your treasure.

6. Get informed and become more aware

Talk to your teacher about starting or joining an environmental group at school or look for ways to increase your awareness of natural surroundings and environmental issues.

Example: Set up a classroom waste reduction campaign with your environmental club. You could turn visits to nature areas and parks into service learning class project.

Benefits: Being informed about environmental issues will give you all the knowledge to help yourself and others become environmentally friendly. Connecting your activities with nature helps to increase appreciation and gives extra motivation to take actions to preserve and protect it.

If schools around Papua New Guinea can get involved in reducing waste materials using some of these practices this will go a long way for the country. As these children become adults they are encouraged to help save the environment from being destroyed by waste materials.

END OF SUPPLEMENTARY READING 25

Supplementary Information 26: Case study- Duluth School gets A's in Reduceology 101

From this case study though in a developed world it can be practised in our country Papua New Guinea. The government must fund or put money aside for such project to save our environment. Waste materials are not only created and found in developed and industrialised countries like Australia, Japan, United States of America, Germany and England. Wastes are also created by developing countries like ours Papua New Guinea, Vietnam and Nigeria. Everyone must work together to save the earth from being polluted or being destroyed.

Duluth School gets A's in Reduceology 101

Stowe Elementary School in Duluth in the United States of America instituted or carried out a waste reduction program in the school which focused on canteen. They switched from disposable to reusables, started to separate recyclables, increased food ordering accuracy and set up vermiculture project to compost food. Vermiculture refers to the process of putting worms into bins to help food to decompose or decay quickly for compost. Compost is the decaying materials like food scraps used for fertilising or adding nutrients to the soil.

In a second project, they created model service learning projects. The projects took what students learned within the classroom and applied them outside of the classroom for the benefit of the Stowe enrolment community.

Projects included reseeding a bare field adjacent or joint to the school, building a composting system for the zoo, helping control trial erosion along some parks and creating awareness of how drains link directly to the river by stencilling or guiding them. They also organised community-based service learning project by creating a nature trail near the school. Their most recent project focused on other alternative sources of energy. Stowe school purchased solar panels, a wind turbine and an inside meter to measure the energy created and the electricity used in the school's worm composting building. The school will teach students about energy generation and consumption for grades kindergarten through to fifth grade. Energy here refers to the amount of power to create electricity for light.

Source: Internet-2014.

END OF SUPPLEMENTARY READING 26

Lesson 15: Improving a Product



Introduction:

Welcome to Lesson 15 of Substrand 4. In the previous lesson, you learnt about waste management by reusing, recycling and reducing of waste materials or rubbish to protect the environment. In this lesson, you will learn about improving a product.



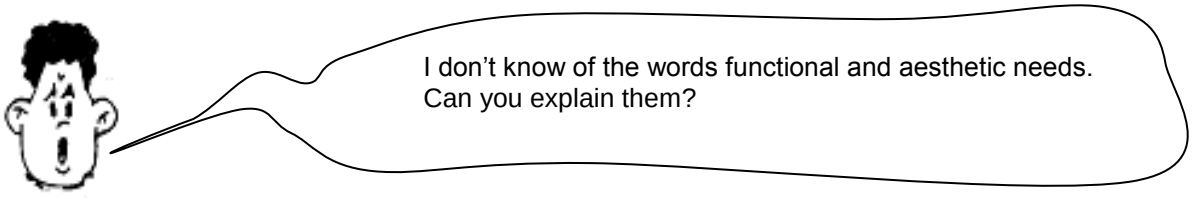
Your Aims:

- Define functional and aesthetic needs
- Identify possibilities of modifying products to meet functional and aesthetic needs
- Identify appropriate techniques, tools and equipment required to modify a product or an item

Functional and Aesthetic Needs

People need to take care of their needs and wants especially the goods or the products that they have purchased or bought. Once you have used the products, you can use the empty containers whether glass, plastic or tin again. In your last lesson you learnt that the three methods that you can apply or use are reusing, recycling or reducing. In that way you are helping to manage waste materials and at the same time saving the environment and reducing wastage of resources. For example, the toilet papers are rolled onto a cardboard. Once the toilet papers are finished instead of throwing the cardboard away you can use it as a curtain holder or holder for your biros and pencils by sealing or closing off one of the ends.

Therefore, people must be educated or informed on proper ways of using goods or products that have been considered or seen as waste materials. In the process of managing waste materials functional and aesthetic needs can be met.



Functional need refers to a need that is practical or real and can serve useful purpose for people.
Aesthetic need refers to a need for creativity for beauty of something.

Let us take a look at the following examples to understand functional and aesthetic need to know better.

- You have a big bale or bag of old, torn and worn out clothes. You ask yourself, what am I going to do with this? Well, you can donate to schools to use as rags to clean their classroom and their other needs. That is already meeting functional needs. It becomes an aesthetic need for the students when they use these old clothes for their arts project. They make something totally different by being creative so it beautifies their classroom. They might make table cloths. They may do this my dying the waste materials, cut them into strip then

interlock the strips to make the table cloth just like how mats are made. They can even make place mats.



Activity 15.1: Complete the activities given below.

Define
1. Functional needs _____
2. Aesthetic needs _____

Modifying Products to Meet Functional and Aesthetic Needs

What is modifying? Modifying refers to making a minor alteration or change to improve something. In the process of modifying something functional and aesthetic needs are met. Waste materials in fact meet needs of some people. Things which are modified are mainly waste materials. The three (3) methods of managing waste materials are used to modify the waste materials. Below here, shows some of the ways in which things are improved to be useful through modifying or changing.

1. **Reusing old tyres**

(a) Flower pots

- Select medium-sized used tyres.
- Cut tyre in half.
- Turn the inside part out.
- Fold it into a flower vase shape.
- Use a nail to insert holes through the tyre and fasten the edges with a strip of strong wire.
- Close the bottom part with a piece of tyre or sheet metal.
- Paint the outside and add pictures.
- Add soil and ornamental plants and put them up for sale.

(b) Fencing

- Collect 20 medium-size used tyres.
- Paint them white.
- Dig small shallow drains around your house near the flower garden.
- Place the tyres in the shallow drains vertically. It adds extra beauty to your residence.

2. **Old, torn clothes**

(a) Quilt

- Collect all old and torn clothes.
- Cut them into different shapes. The shapes should be easy to sew together.
- Sew them together to make a quilt.
- This saves you money from buying new bed sheets.

(b) Door mats

- Cut the old and torn clothes into strips.
- Sort the strips into colours.
- Tie the strips at end to make them long.
- Weave them to make door mats or toilet rags.

There are many things that you can make out of waste materials. If aesthetics can be made a learning topic especially in arts in primary schools this will greatly help in the future.

Appropriate Techniques, Tools and Equipment Required to Modify Things

Before you can modify things you need to have the appropriate or right techniques, tools and equipment to make your work easy.

The information mentioned in the table given below is examples of old tyres and torn, old clothes.

Item	Modified Item	Techniques	Tools
1. Old tyres	(a) Flower pot	Reshape the tyres into flower pot by cutting it in half then pierce or make holes on both end of the half tyre then tie it with wire. It should form the shape of a flower pot. You can paint it plain or paint some design on it.	Cutter for rubber, paints, paint brush and wire
	(b) Fence	Dig the ground enough for the tyre to fit in. Place the tyres and cover the ground half way. Place the tyres 30cm apart. You can then paint it with the colours you want.	Paint, paint brush, spades, hoe
2. Old and torn clothes	(a) Quilt	Cut clothes into shapes enough to hold and sew.	Cloths,scissors sewing machine, thread and needle
	(b) Door mats	Cut clothes into strip and then tie them at ends long enough to weave. If the length of the strip shortens then continue tying it so it could be enough to hold to weave.	Cloths, scissors

Source: Internet-2014.



Activity 15.2: Complete the activities given below.

Visit your local area or community and list down things that have been modified by people to meet their needs.

Summary:



You have come to the end of Lesson 15. In this lesson you learnt that:

- Functional need refers to a need that is practical or real and can serve useful purpose for people.
- Aesthetic need refers to a need for creativity for beauty of something.
- Modifying means to making a minor alteration or change to improve something.
- In the process of modifying something functional and aesthetic needs are met.
- Waste materials in fact meet needs of some people.
- Things which are modified are mainly waste materials.
- The three methods of managing waste materials are used to modify the waste materials. They are reusing, recycling and reducing.
- People with aesthetic minds can help manage waste materials and reduce the wastage of earth's resources.

NOW DO PRACTICE EXERCISE 15 ON THE NEXT PAGE



Practice Exercise 15

1. How does aesthetic need help manage waste materials?

_____
_____

2. Explain modify.

_____
_____

3. Why is there a need to modify things?

_____
_____
_____
_____

4. Fill in the table below by listing the modified item from the original item given.

Item	Modified item
Chicken feathers	
Shopping plastics	
Off cuts from timbers	
Empty jam and peanut butter containers	
Food scraps	

5. Choose the correct words from the list given in the box below to fill in the missing blanks.

Resources materials, recycling, reducing, earths, grounds, reusing, less, resources, enough, more.

The three important methods that help to manage waste _____ are_____, _____ and _____. If people are encouraged to _____ their waste then in the long run there will be _____ _____ for everyone to use.

6. Explain the importance of having the necessary tools, techniques and equipment when modifying an item.

_____
_____
_____
_____

CHECK YOUR WORK. ANSWERS AT THE END OF SUBSTRAND 4

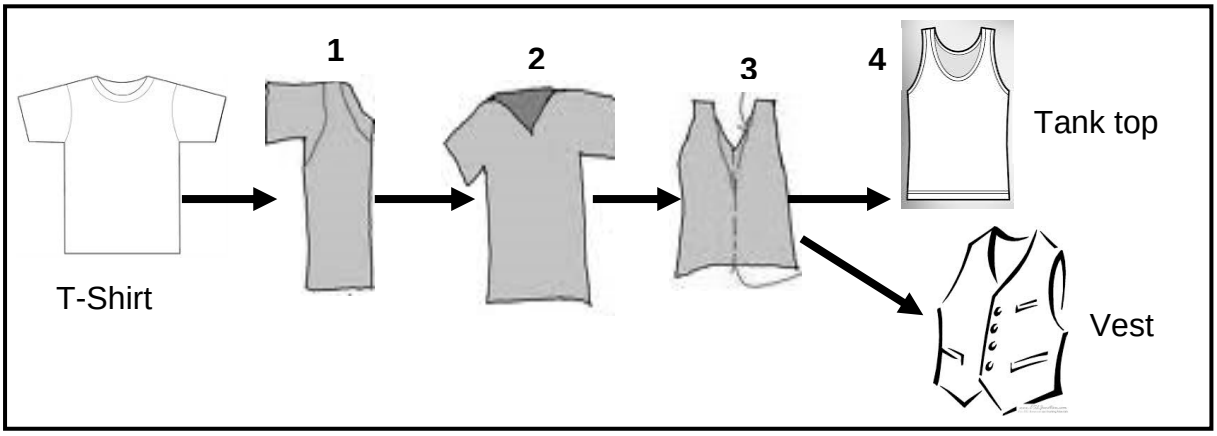
Supplementary Information 27: Modifying

You can help save the resources of the world by doing little things that can make a difference. You have learnt about the three R's so you need to practice that. Modify as you learnt earlier means to making a minor alteration or change to improve something. There is no need for you to buy something new if one part of that item is broken, missing or spoilt. You can simply fix it or change it to satisfy your need. It still serves its purpose or serves another purpose to satisfy your need. There are many things that you can modify like clothes, cars, watches, shoes, furniture and cutleries like knives, fork and spoons. Here, we are going to look at modifying clothes. Since clothing is a basic need then you need to know how to keep it well so you wear it for a long time. Below, gives you the steps to modifying a t-shirt. It is very important that you understand the techniques of cutting to modify your clothes. It will give you the desired outcome of the clothing you want. So always cut little by little the material from the clothes. You can always cut more of it at a later time.

Modifying or altering a t-shirt

Steps

1. Cut of the neckband. Then cut a v shaped neckline. Then cut a scooped or long and round neckline. Cut either the front or back necklines.
2. Cut off the hem of the sleeves. Cut off more the sleeves to create capped sleeve. Cut on the outside of the seam to create a sleeveless style. Then cut on the inside of the seam.
3. Cut on the outside of the sleeve seam with v-shaped neckline for the look of a vest.
4. Cut on the inside of the sleeve seam with a scooped or long round neckline for the look of a tank top.
5. Cut off the hem. Create a jagged hemline. Then cut the hem at a two-inch slant from one side seam to the other.
6. Wear these alone, over or under another shirt.
7. These are great for hot days, the beach, for sports or pyjamas.



The diagram shows how a t-shirt is modified into a vest and a tank top.
Source: Internet-2014.

As mentioned already there are many other things that you can modify or change. For example, if your sandal has straps at the back and one of the straps has been broken then what you can do is cut the other strap off. The sandal becomes a slipper. There is no need for you to throw away the whole thing. Another very simple one is if the handle of your cup has being broken then smoothen the rough edged with sandpaper and put your biros in it so it becomes a biro holder. By modifying things though in smaller ways you are actually making a difference that will save the earth in the long run.

END OF SUPPLEMENTARY READING 27

Supplementary Information 28: Aesthetic

What is aesthetic? Aesthetic as you have learnt in your lesson refers to a need for creativity for beauty of something. That is appreciating or acknowledging the beauty of something. All over the world peoples aesthetic needs are met from the forest. Why the rainforest? The rainforest inspires us to experience nature as valuable, sacred, and special in some hard –to- describe way. The rainforest teaches humility or humbleness through experiences of awe or respect and the grandeur of nature. Grandeur refers to the quality of being great or grand and very impressive or pleasing. It helps us to value the unknown, untouchable, and mysterious.The rainforest provides a spectacular or amazing example of complexity or difficult cycles and interconnectedness helping us to understand living systems. It reminds us of our destructive capabilities or ability and separation from natural processes or ways. From the rainforest we can experience some form of healing. This means that by looking at the forest or walking in the forest makes you think of the future. If too much is taken from the forest than the future generations will be in danger. It helps us to expand our usual sense of self. That is, it makes us think of the rest of the world and try to help and save the forest. Saving the forest will one way or the other save the earth.

Most people like beautiful things and like to have beautiful things around them. People decorate their houses with beautiful paintings, pictures and plants. A lot of plants we decorate our houses with are from the forests. Because the rainforest is filled with many beautiful things, people want to preserve it and keep it beautiful. Pictures and paintings showing the beauty of the rainforest are becoming quite popular. Hopefully, the beauty of the rainforest can help save them. The beauty makes the rainforest a place that people want to keep around. For example, the famous Kokoda Track. The track is found in the thick dense forest of the people of Kokoda, of Oro Province. Tourist from overseas especially countries like Australia come to walk this track. They appreciate what the forest gives.

People need to experience beauty because it lifts their spirit and reminds them of the much larger design of nature. Design of the nature refers to people depending on the environment like the forest to survive. For example, we will not survive if we do not breathe in fresh air. The fresh air or oxygen comes from the trees from the forest. People need to experience something that existed long before them and will live long after them. People need to be enchanted or made to become aware by the tinniest plants and gigantic trees. If we do not protect the beauty of the rainforest, we rob future generations of this life experience.

Of course, beauty comes with its price and with the yearning or wanting for art and beauty another want has grown, the want for exotic materials. For instance, we do not want a beautiful machine-made vase out of plastic instead we want a hand-made vase made out of clay. The same goes for wood and jewelry materials. This encourages stores to supply more of these items thus they find means and ways to get it from the forest. For example, exotic trees like the Purple Heart tree (the inside of this tree is purple) and ivory from the elephants tusks is what some people want to have to furnish or beautify themselves and their homes. When somebody buys any of the products that come from the forest for aesthetic purposes, that person is supporting other people to bulldoze fifteen different trees for Purple Heart tree or the death of an elephant for the tusks. What solutions are there to this problem? Well, fake ivory and other fake materials can be bought instead of the real thing. This is a much cheaper and more human way then slaughtering a beautiful animal for its tusks. Slaughtering means to the killing of animals. Even though aesthetic need

might not sound hazardous or dangerous for the destruction of the rainforest, it still plays a role in the collapse of the rainforest.

END OF SUPPLEMENTARY READING 28

Lesson 16: Product Evaluation



Introduction:

Welcome to Lesson 16. This is the last lesson for this substrand as well as this strand. In lesson 15, you learnt about improving or modifying a product. You also learnt that appropriate techniques, tools and equipment are needed to improve or modify a product. In this lesson, you will learn about product evaluation.



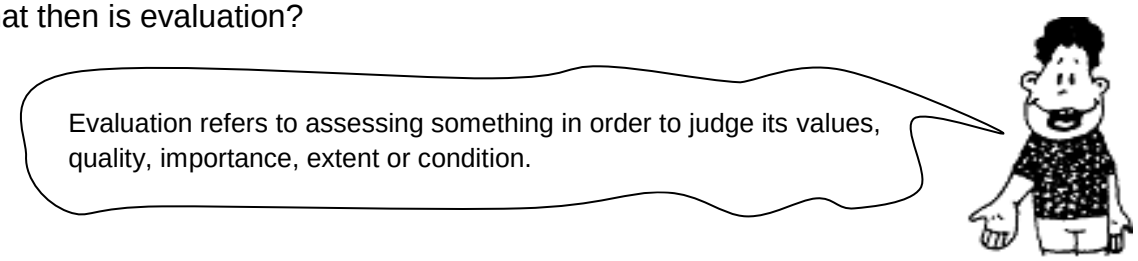
Your Aims:

- Evaluate a product or item for further improvement or change

Evaluation

After you have modified your product you need to evaluate it. Whether you have made the item for self or to be sold for money there must be an evaluation for the product.

What then is evaluation?



It is important that you check the item before you produce some more of it. People will like your products and demand more of it to satisfy their needs though they are made out of waste materials. Make a checklist in place. This will tell you which areas to improve on.

Let us go through this example on used tyres.

CHECKLIST FOR FLOWER POT FROM RECYCLED TYRES

Questions	Yes	No
Was the painting attractive?	✓	
Were the wires tied correctly?	✓	
Was the correct cutter use?		✓
Should knife be used?		✓
Was there need for people to help?	✓	
Was there enough supply for the tyres?	✓	
Was there a high demand for the flower pots?	✓	
Was Costing involved?	✓	

After assessing the products through the use of the checklist, you then give your final recommendations or suggestions for further improvement.

See how the information is presented

Waste Product	New Product	Suggestions For Further Improvement
Old tyre	Flower pots	-Use the correct cutter instead of knife. -Make more flower pots since the demand is high -To meet the demand there should be one more helper to make the flower pot

It is important that suggestion for further improvement be taken note of since it will tell you of the next thing to do to improve your waste management project as a business.
Inform the general public of the purpose of your project. This encourages people to become aware of managing waste materials. At the same time it also encourages others with such ideas to get into business of waste management which all in all help the environment.

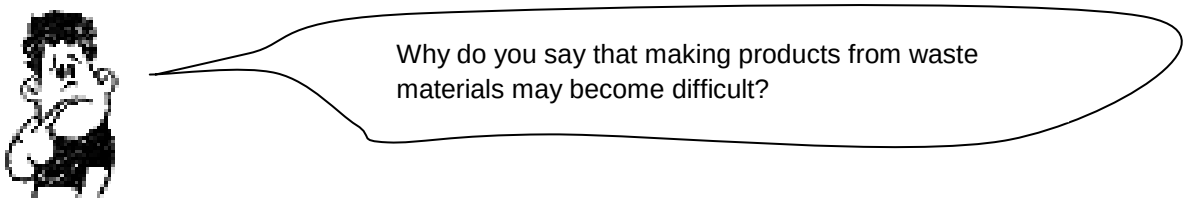


Activity 16.1: Complete the activities given below.

Visit your local area or community and make an evaluation of waste materials whether big or small that have been reused, recycled or reduced. Follow the example given on the flower pot made from recycled tyres.

Factors for production of items from waste materials

Having the idea to make products from waste materials may sound very easy however without the necessary factors the products will not be made.



Products that you desire to make will eventuate or take place if you have the following necessary factors.

i. Capital

What is capital? Capital refers to the money that you put into the business. In this case the waste material project to get it started. So even before you start making the product it is better to see what tools or equipment you will need from the shops to get your waste material project started. Once you have taken note of the things you need and their prices you can then use your money to purchase or buy those tools or equipment. For example, you want to make flower pots from the old tyres. You know very well that to tie the tyres after creating them into the shape of flower pots you

need to tie them with wires, not the nylon or cotton ropes you have lying around the house.

It is better to have a plan and design of the product you are going to make. With your design you will know how much of the needed materials you will buy from the shop.

ii. Design

What is design? Design refers to making a detailed plan of the form or structure of something. With careful design you are likely to make very good products. People will be attracted to the items that you have produced and will buy more of it.

In the process of designing the products you will come up with even better designs. By seeing the items that you have already produced will encourage you to redesign them. You are able to continue using more waste materials and helping to manage and minimise or reduce waste materials in the environment.

iii. Cost

What is cost? Cost refers to the sum or total amount of money needed to pay for something. In this case the total amount of money you will spend on the materials and tools and equipment needed for the project. You must also include in your money you will pay to those who will help you. Costing will help you work out if your business has made a profit or loss.



Activity 16.2: Complete the activities given below.

1. Define

(a) Capital

_____

(b) Design

_____

(c) Cost

_____

2. Name some products that you can make to sell from waste materials found in your local area or community. Would people buy it from you? What is its price? Could you improve it and sell it for a higher price?

_____
_____
_____
_____
_____
_____

Summary:



You have come to the end of Lesson 16. In this lesson you learnt that:

- It is important to evaluate your products made from waste materials.
- Evaluation refers to assessing something in order to judge its values, quality, importance, extent or condition.
- Evaluating the products will help you to improve your product.
- To help you evaluate the project you must have a checklist in place.
- Going into waste material projects may sound very easy to do however you must have the necessary factors available.
- The necessary factors to consider are capital, design and costing.
- Capital refers to the money that you will put into the business to get it started.
- Design refers to the detailed plan of the form or structure of something.
- Costing refers to the sum or total amount of money needed to pay for something.

NOW DO PRACTICE EXERCISE 16 ON THE NEXT PAGE



Practice Exercise 16

1. Explain evaluation.

_____
_____

2. Why is it important to evaluate the items you have made or your projects in general?

_____
_____
_____

3. Fill in the table by listing and explaining the importance of having the necessary factors of producing products from waste materials.

Factors	Importance

CHECK YOUR WORK. ANSWERS AT THE END OF SUBSTRAND 4

Supplementary Information 29: Costing

Before any business project can take place, costing has to be done. What then is costing? Costing refers to the cost or the total amount of money spent in undertaking or starting a project. So whether your business is a recycle business or a usual business providing goods or services to satisfy needs and wants you must always do costing.

As a crafts person it is most likely important that you sell products and not a service. A crafts person refers to someone who makes furniture, clothing, footwear or jewellery. There are some financial or money management disadvantages or problems of being a maker and selling products. They are;

- You will have higher start-up costs when you begin to get your craft business off the ground or started.
- You have higher overheads such as water bills, electricity and transport costs because you will have to work in a workshop.
- You have higher direct cost as you will need raw materials to produce your work from and you will need to keep stock.
- And calculating your costs are slightly more difficult than someone who only designs or draws the item.

There are seven steps to calculating how much your product will cost.

Step 1: Calculate your hourly overhead costs.

Start with identifying your annual or yearly business overhead costs by checking your current monthly or quarterly invoices, identify the various or many different overhead costs, and list them all in a spread sheet if you have a computer or on a piece of paper.

Overhead costs refers to costs that need to be paid regardless of sales. For example, these include the workshop you are renting, telephone and mobile bills, insurance, marketing, storage and light and water bills as well. They are paid for on a regular basis. Drawings/ Salary or raw materials are not included.

For example, we will use K1200 per annum or year. You are the maker and designer of leather made shoes.
Let's assume that in the year you have 4 weeks of holiday, this makes K1200/48 weeks. There are 52 weeks in a year so we minus 4 weeks from 52 gives 48 weeks.

K1200/48=K250 is the overhead cost in a week.

Now, work out how many hours per week you actually spend on average making shoes. Do not include marketing, administration and meeting as there is no producing or making of goods involved.

In your first years you do well if you spend 40-50% of your time physically making.
So let's say 40 hours per week working × 40% = 16 hours per week physically making. The 40 hours comes from the 5 working days, Monday to Friday and the 8 hours of working in a day that is 8.00am to 4.00pm.

40 hours × 40% = 16 hours per week of physically making the shoes.

The hourly overhead cost will be Overhead cost per week ÷ hours per week for physical making of the shoes.

K250/16 = *K15.62 is the Hourly Overhead Costs*

So to keep your workshop running with the overheads you need to generate or make at least K250 every week plus a salary to cover personal living expenses. Even if you do not sell anything you will need to cover both the cost of running the workshop and your own living expenses.

Therefore it is really important to keep your overhead cost as low as possible, especially when you are just starting out.

See if you can share the workshop or work from home to minimize or reduce your costs and get your craft business off the ground or started.

Step 2: Calculate your hourly wage

Let us say you want to earn a gross or total of K22 000 per annum or a year to cover for your personal budget, rent, food, clothes, insurance and tax and other expenses. How much salary you need or want depends on many personal circumstances, such as where you live and with whom you live and what you want or need to have the lifestyle you want.

We use the same figure as previously:

48 weeks × 40 hours × 40% = 768, so that makes an hourly wage requirement of;

K22 000/ 768 = K28.65 hourly wage rate.

Step 3: Calculate your total hourly rate

This is you hourly overhead costs plus hourly wage.

K15.62 + K28.65 = K44.27

Step 4: Calculate how long it will take you to produce one product.

How long does it take for you to produce one product? You hopefully have made your production a bit more efficient and effective and combined various or many different jobs together and produce in small batch or groups. Efficient refers to being organised and effective refers to producing results.
If you do not know the answer to this question, do not guess! Check out with a time sheet and keep a time log or record. You might be surprised how different your guess is from reality.

Remember to include all production processes, including cutting fabrics, sewing, finishing and packaging. Use averages, for example you cut 6 shoes in 2 hours, resulting in 20 minutes per shoes on average.

Let's say total time spend to get 1 shoe ready is 2.25 hours × hourly rate = K99.60

So that is 2.2 hours × K44.27 = K99.60

(It is always good to calculate backwards too: If you are actually making 16 hours per week, do these calculations mean that you indeed produce 7 shoes per well week? Is this enough, too many or too little (use this calculation to improve your own management).

Step 5: Calculate the total material cost

Add all the costs of the materials to produce one shoe. Do not skim or leave them out, it is really important to have a bit of contingency and do not use the cheapest materials. Contingency refers to something that will likely happen in the near future. We will use K22.00 as an example.

Tip: Do not use the cheapest materials: For example if you use a very cheap rubber for the sole of the shoe your overall production will look cheap, but the chances are that it will break sooner too. And the cost of replacing a broken rubber sole is far higher than using a good rubber sole in the first place.

Step 6: Add Contingency

The words 'just in case' are common in businesses, this is called contingency. The contingency percentage of a business should be around 110%. If your product is very expensive you might go for a lower percentage, or if you have a lot of experience with similar products you can lower this figure too. Contingency will allow for mistakes and hidden extra costs and will allow you to offer discounts or special offers.

Step 7: Calculate your total cost

This is how your total cost will be like.

Add time it will take to produce one shoe to the K22.00 which is an example figure and multiply by the contingency rate.

(K99.60 + K 22.00) × 110 % = K33.76

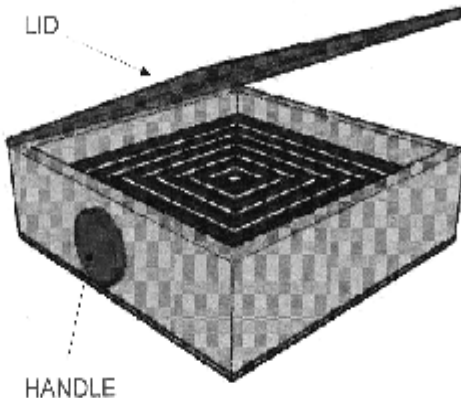
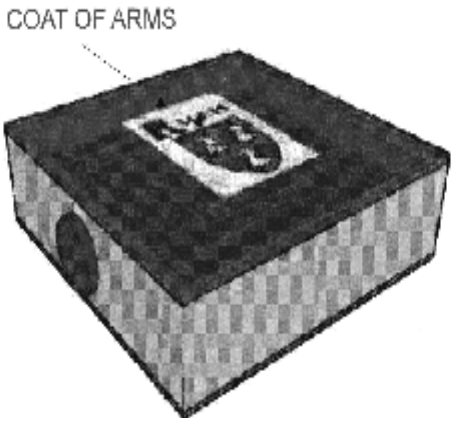
This is the amount that it cost you to produce one shoe. That's it! You have done it! You have found out how to cost a good.

END OF SUPPLEMENTARY READING 29

Supplementary Information 30: Evaluation

All business whether they are producing recycled or usual goods and services must always evaluate their business. They evaluate the performance of the business and the products that have been made. What then is evaluation? Evaluation refers to assessing something in order to judge its values, quality, importance, extent or condition.

Below is an evaluation form.

Good Point	Product photographs	Improvements
I like the overall design of my project. It is a suitable game for a young child as it helps in the development of hand and eye coordination. The game and its container are safe as the edges are not sharp and there are no small pieces that could be swallowed. The joints are accurate and hold the sides together permanently. The wood is pine and this is quite cheap to buy and yet strong and able to withstand everyday knocks. I like the colour scheme as it reflects the results of my questionnaire. The perspex or plastic but glass like lid is red as this was found to be the favorite colour of children aged 5 to 9 years of age. The lid closes quite smoothly and the butterfly hinges work well. The translucent or clear lid allows the internal maze to be seen and the pattern looks quite interesting.	 	Although I like my maze it could be improved and be even better. A selection of woods could be available so that parents could choose the type they like best. A wood such as mahogany would increase the price but I think parents would be prepared to pay a higher price for a quality product. A selection of handle shapes would allow the user to choose the shape they like best. The game could be supplied with variety of shapes making the game more interesting to look at and play. Customers could select lid from a range of colours including translucent and transparent perspex. The coat of arms could be chosen by the customer to reflect the family name. This would personalize the product and lift the price sales. In future the maze

I like the position of the coat of arms which is the picture on the lid. This has been done by the machine. Overall the game works well. The maze is complex or difficult but with effort it can be beaten.		game could be based on a rectangular, circular or even triangular shape.

Source: Internet- 2014.

Evaluation will greatly help you produce better products though they may be made from recycled items. The quality items you produce will earn you good money when sold anywhere.

END OF SUPPLEMENTARY READING 30

ANSWERS TO

SUBSTRAND 4

PRACTICE EXERCISES

Answers to Practice Exercises 12 – 16

Practice Exercise 12

1. What makes a person want to produce a new item?
   Because there is a need for it the first place. There is demand on this product.

2. List the elements of qualities that are considered when deciding if materials are appropriate for a specific purpose.
   The elements are texture, flexibility, strength and shape.

3. What is technology? Give three (3) examples.
   Technology is the name given to any system in which materials, tools or machines are used to make work easier. Axe, saw, and hammer. Others answer sewing machine, computer, grinder, knife and lawn mower..

4. Fill in the missing words in the paragraph given with the given words below.
   Product, technology, wastage, natural, produce, way, costs, money, producing, manufactured, increase.

   Both *natural* and *manufactured* materials must be chosen carefully when *producing* a *product*. Using the appropriate *technology* will reduce *wastage* of resources and cut down *costs*.

Practice Exercise 13

1. Fill in the table by writing down the areas of need by people where you can be involved by producing the needed products or goods. An example has been done for you.

Area of Needs	Goods or products
Example: Decorations	Carvings, knitted flowers tied on wires and attached to soap.
i. Food	*Buns and bread*
ii. Things for carrying items	*Bilums and bags*
iii. Furniture	*Tables, chairs and bed*
iv. Clothes	*Meri blouse, shirts, skirts and laplap*
v. Animal protein	*Chicken, pig, cow, goat*
vii. Traditional costumes	*Headdress, grass skirt, necklaces*
viii. Medicine	*Noni oil and soap, Coconut oil and soap, aloe vera juice*
ix. Cosmetics	*Coconut oil and cream, Noni oil*
x. laundry items	*Soap from coconut*

(Note: Sample answers.)

2. State the importance of putting ideas on paper?
   The importance of putting ideas onto papers is to make you remember and make changes as you carry on with producing your good.

3. Why is it important to test and evaluate your product?
   It is important to test and evaluate your product because you can improve on the good you are making.

Practise Exercise 14

1. Why is it good to use recycle materials?
   It is good to use recycle materials because this helps manage or control waste materials that pollute or spoil the environment if thrown away.

2. Fill in the table by writing down the products that can be made from these recycled materials. An example has been done for you.

Waste	Product
Example: Tyre	Flower Pot
Old used Rice bags	*Bags*
Empty Cans	*Toy, flower holder, pencil and biro holder*
Old news papers	*Use for clothes pattern, wipes for windows*
Old card board	*Cats house, toys*
Used Coconut Shells	*Soup bowl, flower vase, ornament*

3. List some ways you can help people know about the three methods of controlling waste materials.
   People can be informed through public awareness through newspapers, television and radio at public gathering areas. Also through pamphlets and brochures. Pamphlets and brochures refer to small handbooks or papers.

Practise Exercise 15

1. How does aesthetic help manage waste materials?
   Aesthetic helps manage waste materials by people using their ideas creatively on these waste materials to make beautiful things, to satisfy their needs. They do not have to continue buying more goods which leads to increase in the use of resources leading to build up of waste materials.

2. Explain modify.
   Modify means making minor alterations or changes to something.

3. Why is there a need to modify things?
   There is a need to modify things because it has to be improved to satisfy the needs of the people at the same time cut down on the increase in the use of resources. There is no need of buying the same items since small change will be made to the original item.

4. Fill in the table below by listing the modified item from the original item given.

Item	Modified item
Chicken feathers	*Headdress, earing decorations*
Shopping plastics	*Cut into strips to make garland or lace for the neck*
Off cuts from timbers	*Stool, toys*
Empty jam and peanut butter containers	*Container for sugar, salt, coffee*
Food scraps	*Compost or mulch*

Note (Sample answers)

5. Choose the correct words from the list given in the box below to fill in the missing blanks.

control, materials, recycling, reducing, earths, grounds, reusing, less, resources, enough, more, reduce.

   The three important methods that help to manage waste are *reusing, recycling* and *reducing*. If people are encouraged to *control* their waste then in the long run there will be *enough resources* for everyone to use.

6. Explain the importance of having the necessary tools, techniques and equipment when modifying an item.
   Having the necessary tools and equipment will help you create the good or product you are intending to make easier and quicker.

Practise Exercise 16

1. Explain evaluation
   Evaluation refers to assessing something in order to judge its values, quality, importance, extent or condition.
2. Why is it important to evaluate the items you have made or your projects in general? *It is important to evaluate the product or project in general because this will help you make better goods or products and also make necessary adjustments to the project so it continues on as a business.*
3. Fill in the table by listing and explaining the importance of having the necessary factors of producing products from waste materials.

Factors	Importance
Capital	*Money to help buy the needed materials to quick start the good or product you intend to make.*
Design	*Design helps the product to take the desired shape you want.*
Cost	*Cost helps you make informed decisions on how much to spend and for the appropriate purpose.*

ANSWERS TO

LESSON ACTIVITIES

ANSWERS TO LESSON ACTIVITIES IN SUBSTRAND 1

Lesson 1

Activity 1.1:

In a village situation, how can one conduct a market survey?

(Sample answer)

Survey can be conducted by the individual making awareness of the survey through the village elder. Thus everyone get together at one location and questions will be asked to them and they answers accordingly.

Activity 1.2:

Study the survey results format to answer these questions.

1. Name the type of food that is least wanted.
   Mumu
2. Name the most sorted food.
   Chicken, vegetables and rice.
3. What percentage of the population interviewed wanted cooked food?
   80%
4. What is the difference between conclusion and recommendation in a market survey?
   Conclusion is what was found out on the item surveyed and recommendation is what should be done the next for improvement on the item surveyed.

Lesson 2

Activity 2.1:

How are foods produced in your area? List some food production methods available/used in your local community.

In my area food is produced through subsistence gardening, fishing, hunting, crabbing, exchange method barter "fish for bananas"

Activity 2.2:

1. What do you think about hunting and gathering as practical ways to produce food today?
   It is hard work but food is natural which is free from chemicals or fertilizers.
2. Write two (2) good things about producing food yourself in one or more of the above ways and list them in your books?
   1. No expense involved and 2. Food is abundant and nutritious

Activity 2.3:

1. List the three (3) advantages of processing food.
   It can be kept longer
   It can be used later
   It can be used over a period of time
2. List three (3) examples of other food that can be processed by the same or similar methods.
   Peanuts, chillies, mangoes, corn,

Lesson 3

Activity 3.1:

1. List three (3) positive practices when handling food for sale
   (a) Wash hands and wear hand gloves
   (b) Wrap food properly
   (c)Place food in good containers and on good tables for sales
   (d)The area around your table should be clean

2. Packaging is just as important as proper handling. In fact packaging helps proper handling. Write down three (3) advantages of packaging.
   (a) *Protects food from damaging*
   (b) Protects food from dirt and bacteria
   (c) Keeping food intact when transporting and storing.

Activity 3.2:

List down a variety of hot and cold food you could sell on special events.
Hot food: Rice and Stew, Hot Dog, Aigir
Cold food: Cake, scones

Activity 3.3:

1. How much will you sell one pack for?
   K6
2. What is the total revenue?
   K80
3. What is the total cost?
   K120
4. What is the total profit?
   K60

Lesson 4

Activity 4.1:

List special occasions from the list on page 45 that happen in your community.

- *a school open day or cultural day*√
- *opening of a new church building*√
- *A big church gathering (crusade)* √
- *A marriage ceremony or wedding party*√
- *A village court day*√
- *Compensation Ceremony (highlands)* √
- *Baptismal ceremony* √
- *Birthday celebration*√
- *Political related celebrations*√

Lesson 5

Activity 5.1:
Discuss and list five (5) positive attitudes and behaviour in building a good working relationship.
(a) Honesty
(b) Commitment and dedication
(c) Punctuality
(d) Trust
(e) Respect

Activity 5.2:
Select two (2) strategies to developing interpersonal skills. Give an advantage for practising each skill.
Sample Answer:
(a) Skill: Manage anger and conflict
Advantage: there is peace and safety
(b) Skill: Show care and consideration and assist others
Advantage: People will draw to you and respect you

Activity 5.3:
List the three (3) main ways of effective communication;
- *Speaking clearly*
- *Actively listening*
- *Understanding people's views*

Lesson 6

Activity 6.1:

1. List three (3) community improvement tasks that can be done by the members for a better community living
   - *Build proper toilets or repair broken down toilets*
   - *Clean roads sides for safety of travellers*
   - *Build rest haus at the clinic site for mothers who go to the clinic with their babies and also other patients like the older people*
2. Name two (2) positive and two (2) negative attitudes towards government services
   - *Taking ownership and looking after the services*
   - *Repairing them*
3. Name two (2) other groups you belong to
   - *Church group*
   - *Employment group*
   - *School group*
   - *Sports group*

Activity 6.2:

1. List some good things that will happen as a result of the way the leader responded to Henry's suggestion in the meeting.
   Will have clean buildings; this will reflect the community as having respect for their properties
2. How else can you collect information from the community?
   - *Interview*
   - *Survey*
   - *Observation*

Lesson 7

Activity 7.1:

1. List three (3) community needs in your community that you think should be met immediately through community projects.
   - *Pit toilets*
   - *Fences for pigs*
   - *Clear bushes along the roads*
2. List three (3) community needs in your community that can be delayed or met later.
   - *Build teachers houses*
   - *Build APOs' houses*
   - *Clear the airstrip*

Activity 7.2:

Look at activity 7.1 above. You made a list of community needs that must be taken care of immediately. Now select one from that list and make a list of the resources that will be needed to carry out that project.

Community Needs	**Resources Needed**
Pit toilet	*Timbers, roofs, posts, nails*
Fences for pigs	*Posts and veins from the bush*
Clear bushes	*Grass knives*

Lesson 8 – No activities

Lesson 9

Activity 9.1

1. Define;
   (a) Goods. Goods refer to things that people must have in order to survive.
   (b) Services. *Services refer to jobs and business that provides something especially*
   help for other people but do not produce tangible goods.
   (c) Tangible. *Tangible refers to things that can be touched and seen.*
   (d) Intangible. *Intangible refers to things that cannot be seen but are felt.*

2. State the difference between goods and services.
   Goods are things that we can see and touch when using whilst services are especially help given by people to other people who need these help.

Activity 9.2

1. Define
   (a) Needs: *Needs refer to things that people must have disorder to survive.*
   (b) Wants. *Wants refer to things that people desire to have but cannot die if they do not have it.*
   (c) Unlimited. *Unlimited refers to something that has no ending*

2. Fill in the table by listing the characteristics of needs and wants.

Needs	Wants
Needs are essential and necessary	*-Wants are unlimited and unnecessary* *-Wants are desirable*

Activity 9.3

(a) Name the twelve (12) different types of needs and wants of people excluding accommodation.

1. *Building*	4. *Education*	*7. food and household goods*	*10. safety*
2.*Communication*	5. *Electricity*	*8. health*	*11. sanitation*
3. *Crops and livestock*	6. *Financial management*	*9. religion*	*13. Transport*

Lesson 10

Activity 10: 1

1. Define
   (a) Organisation. *Organisation refers to a group.*
2. Explain business oriented. *Business oriented refers to the aim of making money.*
3. Explain the difference between government and non- government organisation. *Government organisation refers to organisations that run or are directly influenced by the government, Non-government organisation have little or no government intervention though they try to provide the services that government provides like health and education.*

Activity 10.2

1. State the importance of goods and service providers.
   Goods and service providers provide goods and services to people who cannot provide these goods and services
2. Why are services very important to the people of Papua New Guinea?
   Services are very important to the people of Papua New Guinea because these services provide help and make peoples life easier. For instance, people bask their money so this money can earn interest at the same time it is kept safe.

Lesson 11

Activity 11.1

1. Define
   Wise consumer
   A wise consumer is someone who makes appropriate or good decisions on buying goods and services that will greatly satisfy his or her needs and wants.

2. Fill in the table by listing and explaining the rights of the consumers.

Rights	**Explanation**
i. Safety	*Goods and services you pay for should not endanger or cause harm to you in any way.*
ii. Honest information	*You must be given reliable and honest information about goods and services that are advertised for sales.*
iii. Choice	*You should be given a choice of goods and services. This avoids one business controlling the quality or charge of service.*
iv. Be heard	*If you have problems with the quality or charge for goods and services, you have the right to be heard.*
v. Redress	*If there is a problem, it should be solved. For example, a faulty item should be replaced or money returned.*
vi. A healthy environment	*You should have access or gain clean water supply and your household rubbish should be collected on time*.
vii. Consumer education	*You should learn how to use money wisely to get value for the money you spend.*

Lesson 12

Activity 12.1

(a) In your local area or community list 5 things you could make from manufactured materials that will be suitable for peoples specified purpose in your community. An example has been given for you.

PRODUCT	MATERIALS	QUALITIES
Example:Window Curtain	Fabric-cotton	Strong, washable and colourful
i. Scrapper	*Timber, ply wood*	*Strong, non-bendable wood*
ii. Fish scaler	*Aluminium tin*	*Strong but flexible metal*
iii. Penny box	*Ply wood*	*Strong, non-bendable wood*
iv. Sandal	*Old tyre*	*Strong but flexible tyres*
v. Meri blouse	*Fabric- nylon*	*Strong, washable, colourful and flexible*

(Note sample answers)

Activity 12.2

List five different natural materials available in your local environment that you can use to produce items of need for people.

PRODUCT	MATERIALS	QUALITIES
Example:Headdress	Chicken feature	Soft but strong
i. Cane chairs	*Cane*	*Strong and flexible*
ii. Comb	*Coconut*	*Strong and non-bendable*
iii. Necklace	*Sea shells*	*Strong and colourful*
iv. Ear ring	*Turtle shells*	*Strong and non-bendable*
v. Basket	*Coconut Leaves*	*Strong and flexible*

(Note: Sample answers)

Activity 12.3

(a) Define

(i) Textile: *Texture refers to the feel or touch of the material's surface.*

(ii) Flexibility: *Flexibility refers to how something can be bent, twisted or moved without breaking.*

Lesson 13

Activity 13.1

(a) You are to visit your local area or community and list down the things you can make with the materials found around you that are greatly needed by the people.
Students answer.

Activity 13.2

(a) List the three things that that are involved in producing a good?
(i) *Planning* (ii) *Designing* (iii) *Testing and evaluating*

(b) Look at the materials found in and around your local area or community and suggest what you would do for the following situations.

(i) Your uncle has a very sore knee. He cannot walk around easily. What can you make to help him move around?
Make walking stick from the cane for uncle to support himself when working around. (Sample answers.)

(ii) Dogs have eaten two of your chickens. What can you make to protect your chickens?
Use old planks and hammer them together creating a fence for the chicken. (Sample answer.)

(iii) Your books got wet when you were walking home in a storm. What can you make to keep your books in good condition?
Make a book case for the book from plastic materials so the books case can be used during rainy seasons to keep them safe from being wet and torn. (Sample answers.)

(iv) Your little brother keeps is pencils and biros in the bilum. He realised that the pencils and biros keep on falling out. How can you help him?
Make a wooden pencil case for him to put his pencils and biros in. (Sample Answers)

Lesson 14

Activity 14.1

(a) Define

(i) Reusing. *Reusing refers to using something again, often for a different purpose.*

(ii) Recycling. *Recycling refers to the processing or changing of used or waste materials into something different so that it can be used again.*

(iii) Reducing. *Reducing refers to lessening or decreasing the number of items you use.*

(b) State importance of reusing, recycling and reducing.

The importance of reusing, recycling and reducing is that they manage or control waste materials.

Activity 14.2

(a) Define pollution. *Pollution refers to the spoiling of the environment with harmful substance.*

(b) Explain the difference between bio-degradable and non-biodegradable.

The difference between biodegradable and non-biodegradable is, biodegradable are materials that can quickly decay and change into soil whilst non-biodegradable are materials that cannot decay quickly.

Activity 14.3

(a) Explain land fill

Landfills refers to areas where wastes are buries.

(b) What negative impact will land fill have on the environment?

It will take up land space that could be used to make more houses or buildings and also take up land for farming purposes. It will also cause the soil to become infertile.

Lesson 15

Activity 15.1

(a) Define

(i) Functional need. *Functional need refers to a need that is practical or real and can serve useful purpose for people.*

(ii) Aesthetic need. *Aesthetic need refers to a need for creativity for beauty of something.*

Activity 15.2

(a) Visit your local area or community and list down things that have been modified by people to meet their needs. *Students answer.*

Lesson 16

Activity 16.1

(a) Visit your local area or community make an evaluation of waste materials whether big or small that have been reuse, recycled or reduced. Follow the example given on the flower pot made from recycled tyres.
Students answer.

Activity 16.2

(a) Define

(i) Capital
Capital refers to the money that you contribute or put into the business you are going to start.

(ii) Design
Design refers to making a detailed plan of the form or structure of something.

(iii) Cost
Cost refers to the sum or total of money needed to pay for something.

Activity 16.3

(a) Name some products that you can make to sell from waste materials found in your local area or community. Would people buy it from you? What is its price? Could you improve it and sell it for a higher price? *Students answer.*

END OF ANSWERS TO LESSON ACTIVITIES IN STRAND 2
GO TO YOUR ASSESSMENT BOOK 2 AND DO YOUR TOPIC TEST 2, THE STRAND EXAMINATION AND THE PROJECT

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STUDENTS AND MARKER'S COMMENTS

STUDENT'S COMMENTS:

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Sign: ……Date: …. /…../……

MARKER'S COMMENTS:

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Student's Percentage	:	…… ……
Marker's Name	:	……
Marker's Signature	:	…… ……..
Date	:	……

FODE PROVINCIAL CENTRES CONTACTS

PC NO.	FODE PROVINCIAL CENTRE	ADDRESS	PHONE/FAX	CUG PHONES	CONTACT PERSON		CUG PHONE
1	DARU	P. O. Box 68, Daru	6459033	72228146	The Coordinator	Senior Clerk	72229047
2	KEREMA	P. O. Box 86, Kerema	6481303	72228124	The Coordinator	Senior Clerk	72229049
3	CENTRAL	C/- FODE HQ	3419228	72228110	The Coordinator	Senior Clerk	72229050
4	ALOTAU	P. O. Box 822, Alotau	6411343 / 6419195	72228130	The Coordinator	Senior Clerk	72229051
5	POPONDETTA	P. O. Box 71, Popondetta	6297160 / 6297678	72228138	The Coordinator	Senior Clerk	72229052
6	MENDI	P. O. Box 237, Mendi	5491264 / 72895095	72228142	The Coordinator	Senior Clerk	72229053
7	GOROKA	P. O. Box 990, Goroka	5322085 / 5322321	72228116	The Coordinator	Senior Clerk	72229054
8	KUNDIAWA	P. O. Box 95, Kundiawa	5351612	72228144	The Coordinator	Senior Clerk	72229056
9	MT HAGEN	P. O. Box 418, Mt. Hagen	5421194 / 5423332	72228148	The Coordinator	Senior Clerk	72229057
10	VANIMO	P. O. Box 38, Vanimo	4571175 / 4571438	72228140	The Coordinator	Senior Clerk	72229060
11	WEWAK	P. O. Box 583, Wewak	4562231/ 4561114	72228122	The Coordinator	Senior Clerk	72229062
12	MADANG	P. O. Box 2071, Madang	4222418	72228126	The Coordinator	Senior Clerk	72229063
13	LAE	P. O. Box 4969, Lae	4725508 / 4721162	72228132	The Coordinator	Senior Clerk	72229064
14	KIMBE	P. O. Box 328, Kimbe	9835110	72228150	The Coordinator	Senior Clerk	72229065
15	RABAUL	P. O. Box 83, Kokopo	9400314	72228118	The Coordinator	Senior Clerk	72229067
16	KAVIENG	P. O. Box 284, Kavieng	9842183	72228136	The Coordinator	Senior Clerk	72229069
17	BUKA	P. O. Box 154, Buka	9739838	72228108	The Coordinator	Senior Clerk	72229073
18	MANUS	P. O. Box 41, Lorengau	9709251	72228128	The Coordinator	Senior Clerk	72229080
19	NCD	C/- FODE HQ	3230299 Ext 26	72228134	The Coordinator	Senior Clerk	72229081
20	WABAG	P. O. Box 259, Wabag	5471114	72228120	The Coordinator	Senior Clerk	72229082
21	HELA	P. O. Box 63, Tari	73197115	72228141	The Coordinator	Senior Clerk	72229083
22	JIWAKA	c/- FODE Hagen		72228143	The Coordinator	Senior Clerk	72229085

SUBJECT AND GRADE TO STUDY

GRADE LEVELS	SUBJECTS/COURSES
Grades 7 and 8	1. English
	2. Mathematics
	3. Personal Development
	4. Social Science
	5. Science
	6. Making a Living
Grades 9 and 10	1. English
	2. Mathematics
	3. Personal Development
	4. Science
	5. Social Science
	6. Business Studies
	7. Design and Technology- Computing
Grades 11 and 12	1. English – Applied English/Language& Literature
	2. Mathematics - Mathematics A / Mathematics B
	3. Science – Biology/Chemistry/Physics
	4. Social Science – History/Geography/Economics
	5. Personal Development
	6. Business Studies
	7. Information & Communication Technology

REMEMBER:

- For Grades 7 and 8, you are required to do all six (6) courses.
- For Grades 9 and 10, you must study English, Mathematics, Science, Personal Development, Social Science and Commerce. Design and Technology-Computing is optional.
- For Grades 11 and 12, you are required to complete seven (7) out of thirteen (13) courses to be certified.

Your Provincial Coordinator or Supervisor will give you more information regarding each subject.

GRADES 11 & 12 COURSE PROGRAMMES

No	Science	Humanities	Business
1	Applied English	Language & Literature	Language & Literature/Applied English
2	Mathematics A/B	Mathematics A/B	Mathematics A/B
3	Personal Development	Personal Development	Personal Development
4	Biology	Biology/Physics/Chemistry	Biology/Physics/Chemistry
5	Chemistry/ Physics	Geography	Economics/Geography/History
6	Geography/History/Economics	History / Economics	Business Studies
7	ICT	ICT	ICT

Notes: You must seek advice from your Provincial Coordinator regarding the recommended courses in each stream. Options should be discussed carefully before choosing the stream when enrolling into Grade 11. FODE will certify for the successful completion of seven subjects in Grade 12.

CERTIFICATE IN MATRICULATION STUDIES		
No	**Compulsory Courses**	**Optional Courses**
1	English 1	**Science Stream:** Biology, Chemistry, Physics
2	English 2	**Social Science Stream:** Geography, Intro to Economics and Asia and the Modern World
3	Mathematics 1	
4	Mathematics 2	
5	History of Science & Technology	

REMEMBER:

You must successfully complete 8 courses: 5 compulsory and 3 optional.