

Book 1

Year 9



Food and Nutrition

Food And Textile Technology

Year 9 Book One

Food and Nutrition



GOVERNMENT OF SĀMOA
MINISTRY OF EDUCATION, SPORTS AND CULTURE

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Introduction

Talofa.

If you are a Secondary School Student studying Food and Textile Technology at Year 9 level, this book has been written especially for you.

It has been designed to give you information and an understanding of different subjects related to Food and Nutrition.

Although food plays a special role in our Samoan way of life and cultural practices, it is one aspect of our daily habits that we take for granted. Most of us just eat for the sake of eating and satisfying our hunger. We seldom consider the effect of what we eat on our health, or growth and development.

This book aims to take you through a journey of facts and information that you can use to make changes and more informed choices about the food you choose to eat.

You will find out how to choose and prepare food that is not only tasty but healthy for you. You will learn how to make sure that the food you eat is safe from harmful organisms, how to store food correctly, and how to spend your money wisely on food that gives you the most value for the money you pay.

There are three main Sections in the book. Each Section consists of topics related to the main subject covered in that Section. Each topic has activities for you to do and try out. There are activities that you can do individually or in a group. You can ask your teacher or another experienced adult to help you with the group activities given.

All words that may be new words to you have been placed in a box on the left hand side of the relevant page. The meanings of these words are given for you in the **glossary** at the end of the book so you can look them up if you need to.

We hope you will experience new and exciting things as you journey through this book.

Unit 1: KEEPING FOOD SAFE

KEY WORDS

- Hygiene
- Bacteria
- Personal
- Bleach
- Disinfectant
- Contaminate
- Refrigerator
- Thawed
- Chipped
- Tuck shop

Personal Hygiene

Personal hygiene is most important when preparing food. Personal hygiene is the term used for keeping ourselves clean so that when we handle food it is not contaminated and is kept safe to eat.

A Clean Healthy Cook:

- Always wears a clean apron.
- Washes hands thoroughly before handling food and after going to the toilet.
- Does not sneeze over food.
- Covers mouth with a handkerchief when sneezing and washes their hands afterwards.
- Keeps hair clean and tied back from the face.
- Covers cuts and wounds.
- Does not work with food when feeling sick or has diarrhoea.

A cook who does not pay attention to the above points could be dangerous. Bacteria can easily be passed from people onto food causing food poisoning.

Hygienic Handling when Preparing Food:

- Wash hands, knives, boards, etc. after using them to cut raw food e.g., meat, chicken, fish.
- Do not use chipped glass or chinaware.
- Do not lick your fingers when handling food.
- If you sip from a glass or taste food from a spoon, always wash it after use. Do not return a spoon to the pot of food after using it to taste or to eat with.

For a Clean Kitchen make sure that you:

- Wipe up surfaces when food is spilt.
- Use clean equipment and utensils.
- Always wash equipment well after use.
- It is better to air dry equipment, utensils and plates than to use a tea towel.
- Use bleach and disinfectant to make sure that dishcloths and mops are clean.



ACTIVITY 1

Materials/Equipment

- The Check List of a Clean, Healthy Cook.
- Pens and Paper.
- Transport if needed.

Instructions

It is important for the people who handle the food we eat to practise good hygiene. We are in danger of getting sick if the people who prepare our food are not careful with their personal hygiene and food handling practices.

Use the check-list given on the previous page about the *Clean Healthy Cook* to check up on the people who sell food or serve food at your school or favourite restaurant. You can do this as a class activity in small groups. Decide which places you will visit and check out the workers who prepare and serve the food.

When you return have a class discussion on your findings. How clean are the practices of the people who work at that place? Would you continue to buy food from there?

Why don't you all visit your Tuck Shop again and look at how food is served and prepared from a hygienic point of view. If you find any problems your class can write to your Principal and ask if changes can be made to make the food served or sold at the Tuck Shop, more safe for the pupils of the school to eat.

Safe Food Practices

KEY WORDS

- Occurrence
- Barbecuing
- Suspect
- Temperature
- Scenarios
- Micro-organisms
- Symptoms

Food poisoning results from eating or drinking something that has been contaminated by an organism that has caused the food or drink to spoil. Sometimes we can not tell by looking at a food whether it is spoiled or contaminated. For example when a lot of harmful germs get into the water, we can't see them but when we drink the water it can make us very sick. This is why we need to be aware of what makes food spoil so we can prevent it happening.

The symptoms of food poisoning are unpleasant. They are written below. These symptoms can occur between two hours to three days after eating or drinking contaminated food. They can persist for up to a week. In exceptional cases, if untreated, they can lead to death.

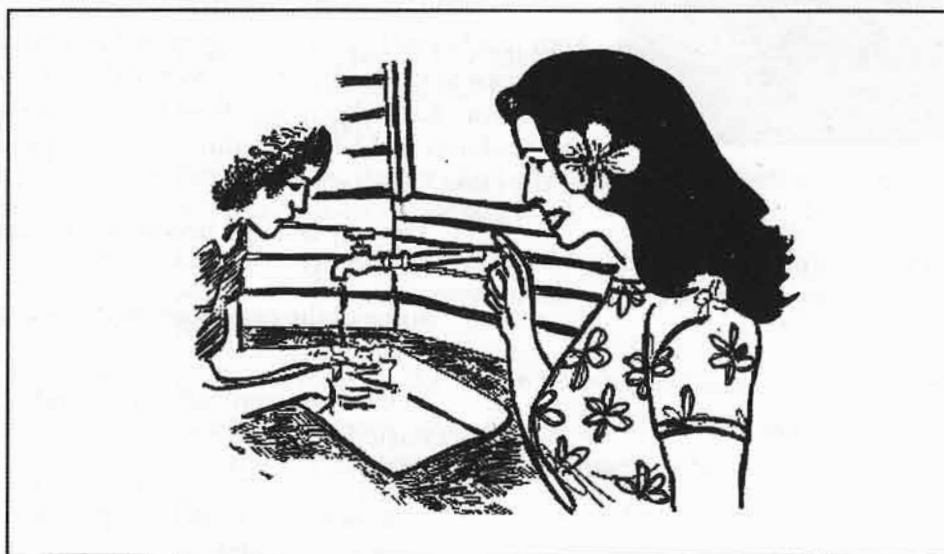
- Abdominal pain (stomach ache).
- Vomiting (being sick).
- Fever (unusually high temperature).
- Diarrhoea ('the runs').
- Nausea (feeling sick).

Did you know smokers can transfer harmful bacteria on to food when they touch their lips to remove a cigarette and don't wash their hands afterwards!

Hand washing is very important in preventing food poisoning. It is a simple action but so important and can often be the one thing that saves a person from becoming very sick or experiencing the nasty stomach pains and other symptoms that accompany food poisoning. Many preventative methods are

simple hygienic actions that we can all make a habit of doing every day. Practise makes perfect. Practise preventing food poisoning from occurring in your life or in your families' lives, by doing these simple things like washing hands, cleaning your dishes properly and keeping yourself clean.

Bacteria	+	Food	+	Warmth	+	Time	+	Eating	=	Food Poisoning
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Hand washing is very important for preventing food poisoning

ACTIVITY 2

Materials/Equipment

- Survey Form.
- Pens.

Instructions

(Individual or Group).

1. Do a survey at lunch-time of how many students wash their hands after going to the toilet.
2. Do a survey of the number of students who wash their hands before eating their lunch.

KEY WORDS

- Natural state
- Deteriorate
- Microscopic
- Perishable
- Thaw
- Plastic cling-film

How can you make sure food is kept safe?

To ensure that all food is kept safe and does not cause food poisoning, follow these points:

- Cook all food thoroughly.
- Check that the chicken is cooked by using a knife to see that the juice from the chicken is clear.
- Time the cooking so that the food is prepared for when you are ready to eat it. Do not cook in advance and leave it sitting around at room temperature.

- Keep raw food e.g., uncooked meat, separate from cooked food.
- Place left over perishable food covered in the refrigerator.
- Food to be kept for more than two days should be kept in the freezer.

ACTIVITY 3

Materials/Equipment

- Newsprint.
- Marker Pens.

Instructions

This activity can be done in groups.

Your teacher will put you into groups. Each group will get one of the following scenarios to study. Your task is to decide in your group what caused the food poisoning. Each group will then take turns using their scenario to explain the problem and how they think the food poisoning was caused, to the rest of the class.

1. The boy became unwell after eating a warm meat pie from the local shop.
2. Some of the partygoers became sick after eating barbecued meat at the party.
3. The power went off for several hours and food in the freezer started to thaw.
4. Being in a rush to prepare the evening meal the mother failed to thaw the chicken completely before cooking. The next day everyone was sick.
5. There were lots of leftovers from the party the night before and insufficient room to store everything in the refrigerator. Guests who stayed the night ate the leftovers for breakfast and some of them became very sick by lunch time.
6. The ice cream was put in the refrigerator by mistake. Several days later when it was discovered the teenage girl made a milk shake with the melted ice-cream and became very sick a few hours later.



The boy became unwell after eating a warm meat pie from the local shop.

Storing Food Safely

A refrigerator and freezer are very useful for keeping food safe if you use them correctly. Remember cold temperature will not kill micro-organisms. As the temperature drops their growth becomes slower until it stops below zero.

A refrigerator should be 4°C or lower and a deep freeze should be -18°C or below.

Using the Refrigerator:

- Put food away as soon as you get home.
- Everything except raw meat, fruit and vegetables must be covered. This stops the food from drying out and absorbing other flavours.
- Put raw meat, fish or chicken on the lowest shelf so their juices will not drip on to cooked food.
- Use plastic containers, plastic bags, plastic cling film, foil or jars with screw lids, to cover or store food when keeping it in the refrigerator.
- Cool hot food on the bench before placing in the refrigerator.
- Don't try to store large pots of warm food in the refrigerator. Divide the food into smaller containers before refrigerating.
- Don't leave the refrigerator door open for too long.
- Don't over-pack or over-fill your refrigerator.

Did you know you should never use soap or detergent to wipe out the fridge? The strong smell can taint the food!

Using the Freezer:

- Only freeze small quantities of food at a time.
- Freeze only good quality food when it is at its freshest; e.g., meat, fish.
- Use plastic containers, bags, cling film or foil, but not glass.
- Check that the freezer is -18°C or colder.
- Label and date frozen food.
- Use frozen food within the recommended storage time.

ACTIVITY 4

Materials/Equipment

- Rules for using the Refrigerator and Freezer.
- Newsprint, Marker Pens or Pens and Paper.

Instructions

Working in a group read through the rules for using the refrigerator and the freezer.

You will notice that only two rules under using a refrigerator have been written with an explanation. For a rule to be followed it is important for people to know the reason for using it. In your groups try to work out a reason for each of the other rules. When you have come up with as many

answers as possible your teacher will bring you together for a class discussion. Once you have shared your ideas and found a reason for each rule you can write each rule and the reason for it in your book.

Re-freezing thawed out food is a very dangerous practice.

Many people think it is alright to re-freeze food, especially meats and poultry, after it has been thawed out. This is very a very dangerous practice. Why do you think it is dangerous?

Freezing food does not kill bacteria and other harmful micro-organisms, it only slows them down.

Therefore when the food thaws out, the temperature in the meat gets warmer and the bacteria starts to grow again. The longer the food is kept outside the freezer thawing, the greater the opportunity for bacteria to grow in that food.

When the thawed food is re-frozen you may be freezing 10 to 100 times or more bacteria in that food than when it was first frozen.

Remember:

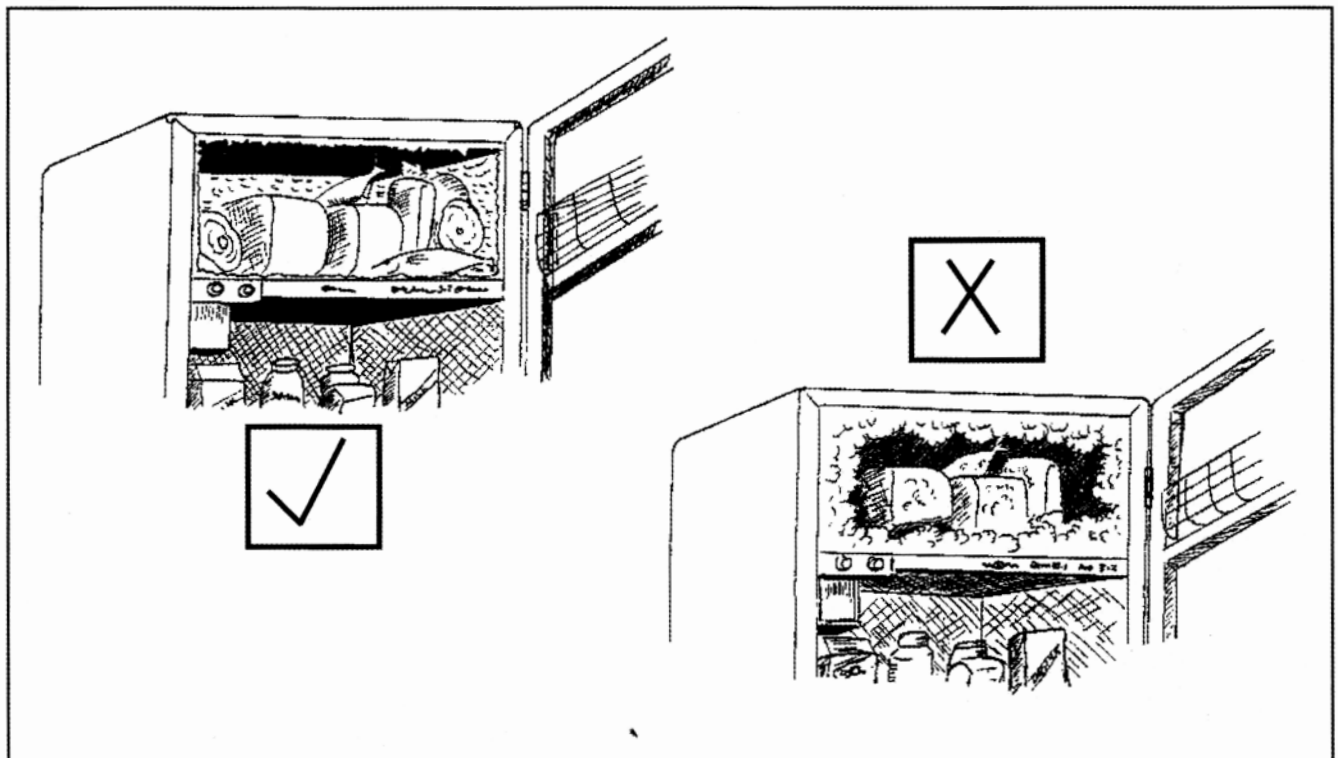
- Always cook thawed out food before you re-freeze it again.
- Always reheat properly any cooked food that has been frozen!

So how does this make it a dangerous practice?

When the food (if it is raw food) is taken out again to be used for a meal and it is not cooked properly, the chances of food poisoning occurring are much greater. This means you are more likely to get food poisoning from food that is thawed and re-frozen than from raw food that is cooked once it has been thawed out.

When people thaw out cooked food that has been frozen and then re-freeze this food the same thing happens - bacteria starts to grow again in this food. A person can get very sick when they eat thawed out re-frozen food without cooking it again!

Keep the refrigerator and freezer clean



ACTIVITY 5

Materials/Equipment

- Transport for Field Trip to Supermarket.
- Observation Forms.
- Pens.

Instructions

1. In your class have a discussion about the way people use refrigerators and freezers in Samoa. Is the re-freezing of thawed out food a big problem in our country?
2. Where is this practice most likely to occur and why is it something we need to be careful about?
3. Next time you go to a big supermarket in Apia, check to see what they do with the the thawed out meat they have in the display coolers when they close down the shop at the end of the day.

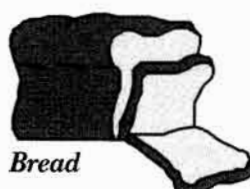
Shelf Foods

KEY WORDS

- Taint
- Absorbing
- Explanation
- Recommended
- Treated
- Offal

Not all foods need to be kept in the fridge. Some foods are less perishable than others. They are less likely to go off when they are stored at room temperature and are called shelf foods. These include:

1. *Dry food* like rice, tapioca, flour, sugar, breakfast cereals, packet biscuits. These foods need to be kept in air-tight plastic or glass containers. They should be stored in a cool, dry place.



Bread



Chocolate Chip biscuits



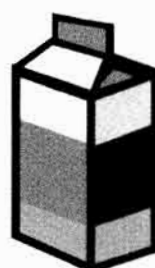
Corn flakes

Did you know that dry foods that are not stored correctly will begin to absorb moisture from the air? That is what causes them to go off.

2. *Canned and Bottled Foods.* These foods should also be kept in a cool, dry place. Once the jar or can is opened the food should be treated like fresh food.



Canned Meat



Milk



Soft drink

ACTIVITY 6

Materials/Equipment

- Tin of Eleni.
- Packet of Chips.

Instructions

1. If you had tinned fish (eleni) for lunch but only used half of the contents of the tin, how would you store it? Where will you store it?
2. Would you keep the eleni in the tin and store it or place it in another container? Why?
3. Test this out! Open a packet of chips & leave it out overnight - see what happens.

STORAGE TIMES IN THE REFRIGERATOR

Time	Food Item
1 - 2 days	Mince, fish, chicken, sausages, offal, green leafy vegetables, left-over meals.
2 - 3 days	Meat, milk, soft fruit like pawpaw.
7 days	Smoked fish, hard fruit like apples.
7 - 14 days	Bacon, cheese, butter, eggs.

STORAGE TIMES IN THE FREEZER

Time	Food Item
Up to 2 months	Sausages, cooked meat, shellfish, fish, icecream.
Up to 4 months	Mince, bacon, offal.
Up to 1 year	Chicken, fruits, e.g., dried fruits, vegetables, (e.g., frozen vegetables), meat.

ACTIVITY 7

Materials/Equipment

- Work Book or Paper.
- Pens.

Instructions

1. Imagine you have just done a "big shopping" at the supermarket. Where is the best place to store these food items when you get home?
2. Design a table in your book to show the most suitable place to store each of the foods listed below. State how long it can be kept for. Try and group your foods using the following headings: Canned or Bottled foods, Dry food, and Perishable foods.

Eggs

Packet of biscuits

Soy Sauce

Bananas

Frozen Chicken

Ice Cream

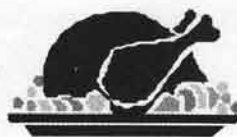
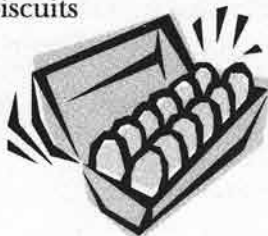
Lamb Chops

Cabbage

Potato chips

Tomato Sauce

Sausages



Carrots

Tin of Corned Beef

Butter

Cheese

Jam

Cornflakes

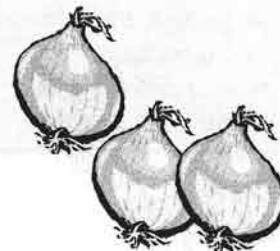
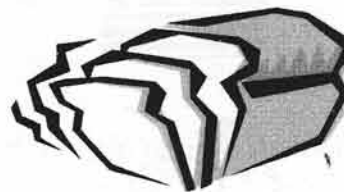
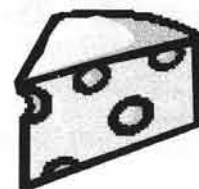
Rice

Noodles

Bread

Instant Coffee

Onions

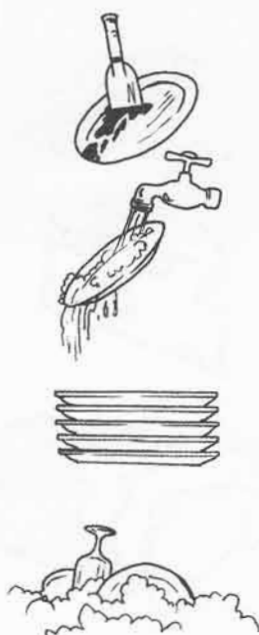
**KEY WORDS**

- Detergent
- Hygienic

Washing-up Hygienically

To ensure food is safe to eat it must be made and served using clean, hygienic equipment. It is important that washing-up is carried out correctly so bacteria are removed and not left on equipment to contaminate the next meal!

Using the following steps when washing-up will ensure that equipment is clean and safe to use.



Did you know that bacteria is found everywhere; in the air, on people, on animals and insects, and on work surfaces and equipment.

Steps in washing dishes:

1. Scrape all waste food off plates.
2. Collect hot water if possible and detergent to wash dishes in.
3. Use a clean dish mop or brush to wash items one at a time. Wash the least dirty things first, for instance:
 - Glassware;
 - cutlery;
 - chinaware;
 - bowls, etc;
 - tinware, lids etc;
 - saucepans.
4. If possible rinse all items in clean hot water after washing.
5. Place dishes to drain in a dish drainer or on a clean dry tea-towel on a flat surface or sun table.
6. Wipe out the sink or washing-up bowl with hot soapy water. Run the hot water down the drain to clear. Wipe the bowl.
7. Rinse dish-mops and dish-cloths well in clean hot water after each use. Once a week, soak them in a bleach solution. **Use one teaspoon of bleach to one cup of water. Rinse thoroughly.**

ACTIVITY 8

Materials/Equipment

- Work Book and Pens.
- Newsprint and Markers.

Instructions

1. Compare the steps in washing dishes mentioned above and the steps you are using in your own homes when washing dishes. Is this the way you wash dishes?
2. What are the main differences in the way you wash dishes at home and the way that is described here?
3. What realistic changes can you make to improve the way you wash dishes at home?
4. Discuss in your class the advantages of using these steps in washing dishes.
5. How many people in Samoa have access to hot water for washing dishes?

6. Discuss those situations when you should boil up water to wash dishes at home.

Cleaning Tinware

Keeping tinware clean can be difficult because food can stick to tinware e.g., cake tins, baking trays, loaf tins, patty tins, etc. Follow these steps to help you keep your tinware in good condition:

1. Clean with steel wool and an abrasive cleaner, using a minimum of water.
2. Check all corners to remove all food scraps.
3. Wipe out with a dishcloth.
4. Rinse well in clean hot water.
5. *Dry with a dishcloth, not a tea towel, to help remove stubborn greasy spots.*

ACTIVITY 9

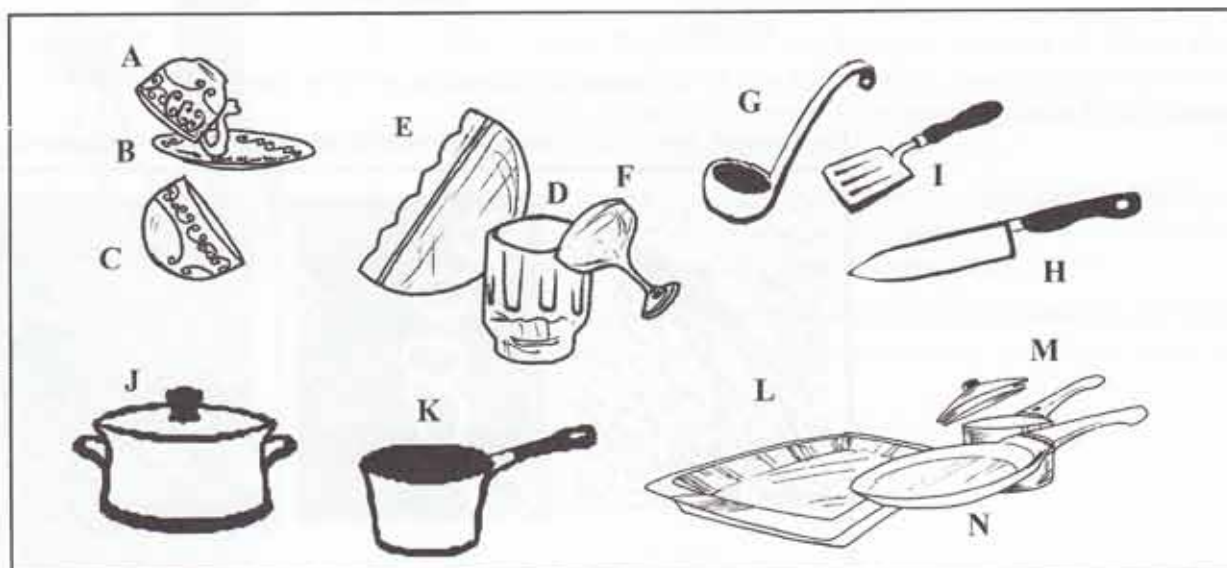
Materials/Equipment

- Work Book and Pens.

Instructions

In your books:

1. Arrange the letters of the equipment illustrated below into the correct order of washing-up.
2. Why is it important to soak dish mops or brushes in bleach once a week?
3. Why is glassware washed first?
4. Why is tinware put in a warm place to dry before storing?



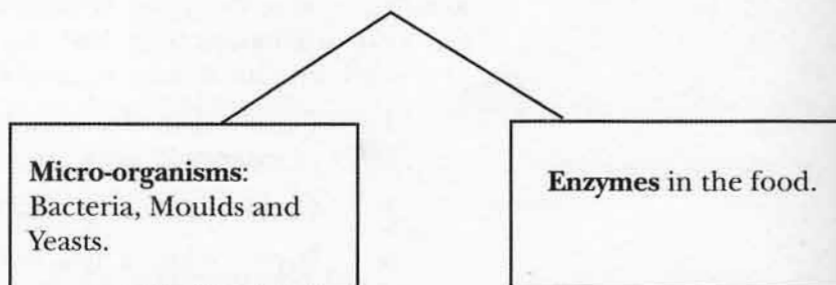
Food Spoilage

KEY WORDS

- Fizzy
- Ripening Agent
- Conditions
- Appealing
- Environmental Factors
- ¥ Minute
- Rancid
- Slimy
- Enzymes
- Stabilise

It is not just bacteria that causes food spoilage. Food lasts longest in its natural state, that is, while it is still growing. Once food is picked or an animal killed for its meat, it starts to deteriorate.

This deterioration or food spoilage is caused by:



Enzymes:

The natural ripening process is caused by enzymes which are found in the food itself. They can turn the food brown (e.g. banana) and make it go soft and decay. When a food becomes overripe due to the enzymes it contains, it starts to lose some of its nutrients, especially Vitamin C.

Yeasts:

Are microscopic, single cell plants. They grow by feeding on the sugar in food such as bread, jams, cheese, and fruit like oranges and pawpaw.

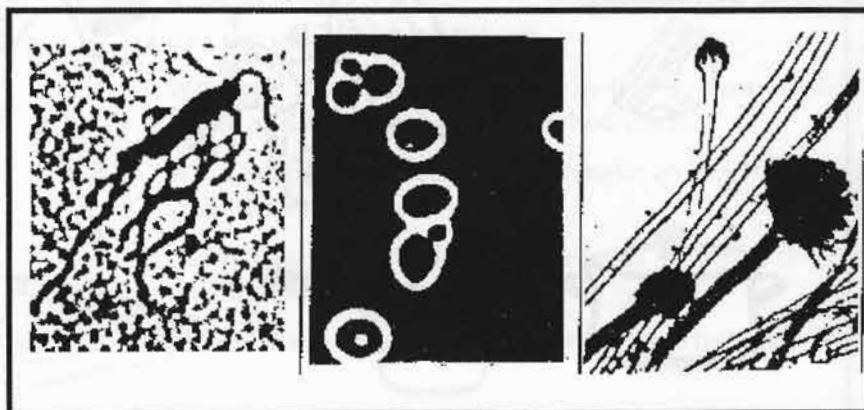
Bacteria:

Bugs or germs cannot be seen as they are so small. They are everywhere: in and on us, in the air, water, and the soil. All raw food has bacteria in it or on it. Bacteria can cause food spoilage. They produce unpleasant smells and flavours, making the food unfit to eat.

Moulds:

Are minute plants that grow on foods.

Pictures of bacteria, yeasts and moulds as seen under a microscope



ACTIVITY 10

Materials/Equipment

- Dictionary or Thesaurus.
- Work Book and Pens.

Instructions

In this section there are several words that could be new to you. In groups, work out a definition for the following words: Fizzy, Rancid, Minute, Slimy etc.

Your teacher may add other words from the "Key Words" box at the top of the page. Each group works out a meaning for the word that is given to them.

Make your own 'Food Spoilage' summary. In your book copy the following exercise. Choose the correct food change agent from the list below to fill in each of the spaces in the following paragraph.

Words: enzymes, moulds, yeast, bacteria

- Unripe fruit is changed by _____ to ripe fruit, and then by _____ to over-ripe fruit.
- Jam stored in a warm place gets a furry surface due to the action of _____.
- Peeled potatoes go brown on the outside because of the action of _____.
- Due to the sugar in fruit juice, _____ can grow in it making it go 'fizzy' and giving it a strange flavour.
- If chicken is left on the bench _____ makes it unsafe to eat.

(Check for the correct answers at the end of the book).

"They suspect that the increase in barbecuing could be the cause of the high occurrence of food poisoning".

ACTIVITY 11



Instructions

- The Health Department has become concerned about the increasing number of food poisoning cases being reported. They suspect that the increase in barbecuing could be the cause of the higher occurrence of food poisoning.
- Prepare a leaflet or poster that could be given out by Doctors, at Health Clinics and Hospitals to explain to the Public how to avoid food poisoning when barbecuing food.
- Make your information easy for the public to understand, and include diagrams to make it eye-catching so people want to read it.

Materials/Equipment

- Poster Paper and Markers.
- A4 Paper and Coloured Pens.
- Pictures.
- Glue and Sticky Tape.

ACTIVITY 12

Materials/Equipment

- Four small pieces of bread (3cm square).
- Four small dishes (lids of jars will do).

Instructions

(Class activity recorded individually).

1. Experiment 1: What conditions do food spoilers need? Set up the four dishes as follows:
 - (a) Wet bread, put in a warm place (add extra water if it dries out).
 - (b) Wet bread, put in a refrigerator (add extra water if it dries out).
 - (c) Dry bread, put in a warm place.
 - (d) Dry bread, put in a cold place.

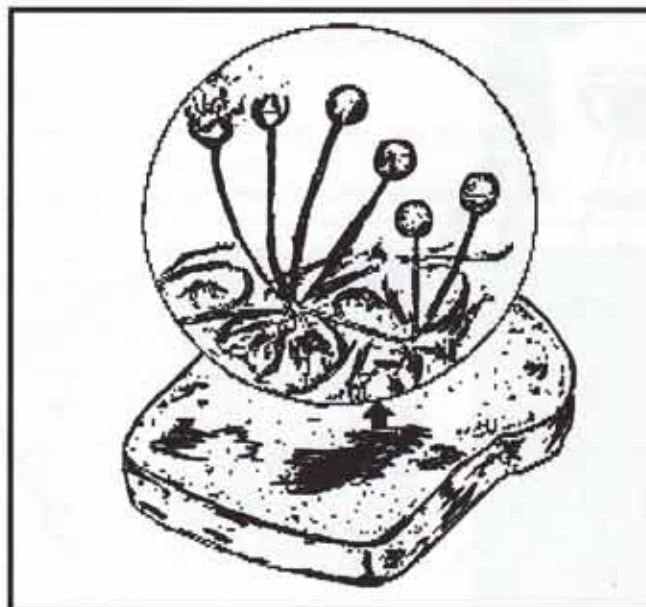
Leave the four dishes in these places for one week. Check the dishes daily and observe which piece of bread starts to spoil first? What organism do you think has spoiled the bread? Is this the result you expected?

REMEMBER:

- Put up signs to warn students not to eat these samples. Remember they could cause food poisoning!

2. Experiment 2: What are the food spoilers?
 - (a) Put a small piece of banana, pumpkin/carrot or sweet potato and butter on a plate.
 - (b) Put a small amount of milk in a small container and some fruit juice in another container. Leave in a warm place for a few days.
 - (c) Check and record any changes that may occur each day.
 - (d) Which food changed first?
 - (e) What organism do you think caused the spoilage? Refer to page 18.

Mould on bread



How do Moulds and Yeasts Grow?

Bacteria, Moulds, Yeasts and Enzymes need the following conditions in order to grow:

- Warmth.
- Moisture.
- Food.

To prevent food from being spoilt by any micro-organisms or enzymes it is necessary to remove one or more of the conditions they need for growth.

This means:

- Altering the moisture content of the food e.g., drying the food.
- Changing the temperature by placing the food in the fridge, freezing it or by cooking the food at a high temperature.
- Adding a substance to the food that makes it less appealing to micro-organisms and enzymes. For example, lemon juice, vinegar, salt or sugar.

Did you know that placing cut banana in lemon juice or lime stops it going brown?

The following environmental factors can cause food to go bad.

Warmth

Food left unrefrigerated goes "off". Fruit juices ferment, milk goes sour and meat goes slimy.

Moisture

Biscuits left out on a plate eventually go soft. Insects like Weevils grow in cereals.

Light

The colour and smell of food can be affected by light.

Oxygen

In the air, causes browning of fruit. For example, fruits like bananas and apples go brown after they are cut and left out on the table. Oxygen, light and warmth can also cause foods like butter to lose their freshness.

The following changes can occur when butter goes off. It becomes oily, darker in colour and its flavour changes. The butter becomes rancid and is no longer fit to eat.

Poor handling

When food like fruit is dropped or knocked, it develops bruises. Bruising can cause the fruit to spoil faster than if it were picked and handled with care.



Environmental factors can cause food to go bad

Traditional Ways of Food Preservation

KEY WORDS

- Preservation
- Snacks
- Traditional
- Fermenting
- Desperate
- Nutritious
- Resin
- Process
- Germs
- Yeasts
- Gourds
- Deserved

Traditional Food

“

It is time we took heed

For our health is in desperate need

Revive our own traditional feed

Like our elders' favourite

Smoked fish.

Let us look back

To our fore-parents' midday snacks

Like masi Samoa, sami lolo and limu

Easy to prepare, easy to preserve

Fully nutritious and so well deserved.

Quit all the modern junk

They only make you plump

What you really need

Is your own traditional feed.

Our forefathers lived up to a hundred years

Because they ate with no fear

Faausi, taufolo, luau and sea

Everything for a balanced diet was there

And so from many diseases they were spared.

We need to be smart and avoid

The fat, the sugar, and the salt

In the junk and fast foods we enjoy today

Go back to what we really need

Our own traditional feed. ”

by Me Etuale



ACTIVITY 13

Materials/Equipment

- Poem on Page 22.
- Work Book and Pens.

Instructions

Read the poem carefully and answer the following questions.

1. Make a list in your book of all the traditional foods that are listed in the poem.
2. What type of foods do you think the writer is referring to when she refers to the "junk".
3. What are the disadvantages of junk food.
4. Is there a place for them in our present day diet?
5. What are the advantages of a traditional diet that the poem refers to?

Preservation

This is a method or process carried out on a particular food to prevent the food from going bad and enabling it to be kept for a long period. Centuries ago, Samoan people learned to preserve certain foods, especially seasonal foods, by using methods like smoking, drying and fermenting to make sure they could have that food after the season was over.

They also used methods like baking staple food with the skin on and burying food, as short-term preservation methods.

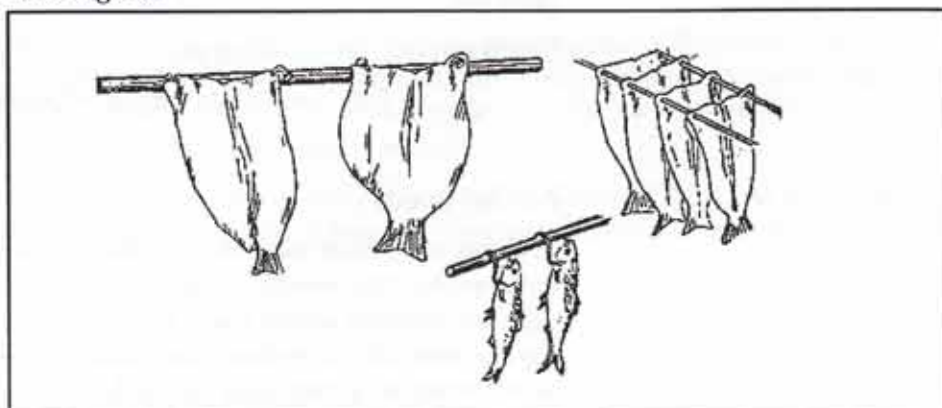
The Samoan Islands are very rich in fruit and vegetables. Fruits and vegetables if not harvested in their natural cycle of life, grow, mature, then decay and return to the soil. If we want to keep these foods for longer periods of time, we must preserve them by preventing decay.

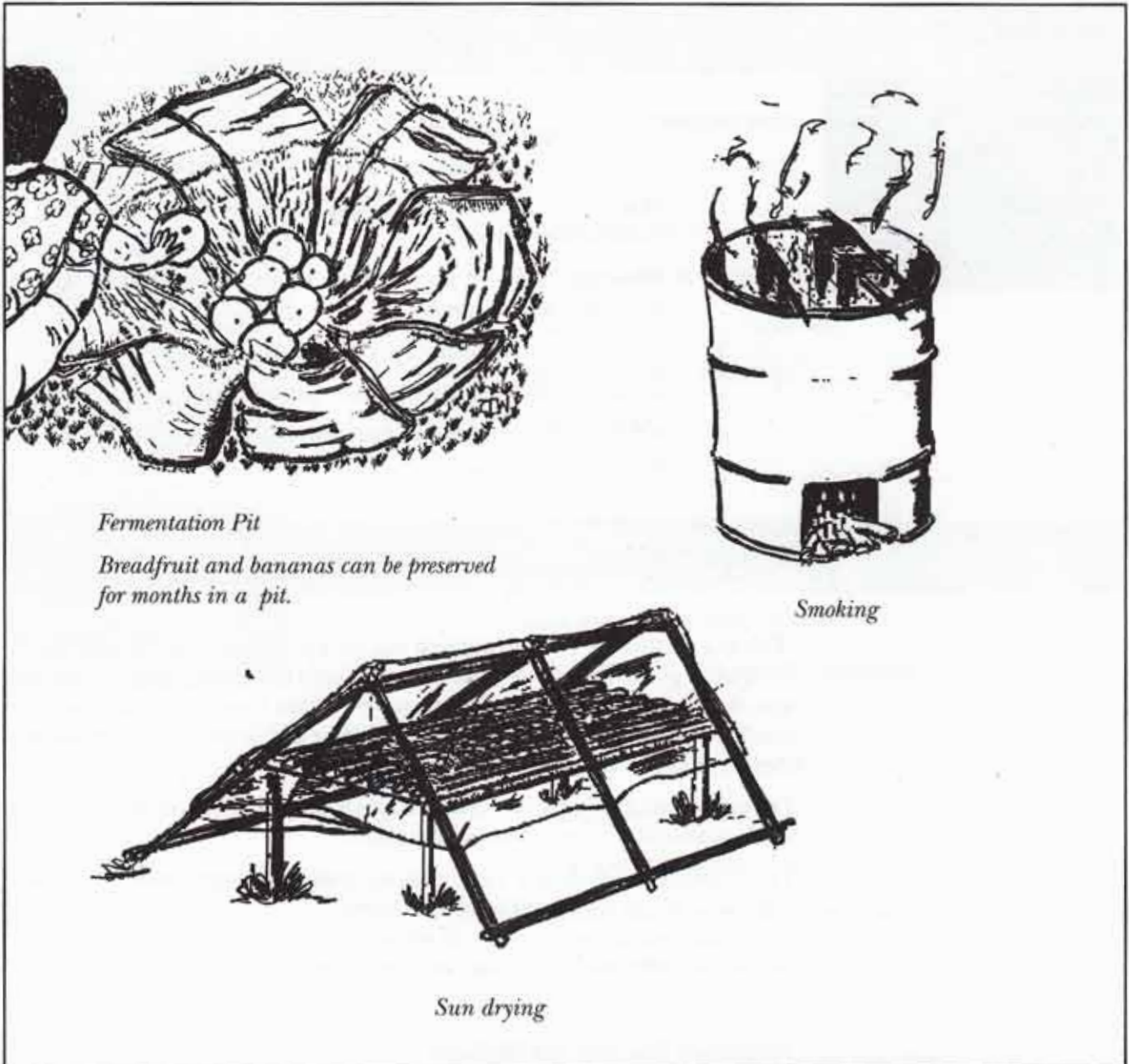
Traditional Preservation Methods

These are some of the traditional preservation methods. They are not commonly used today although some people still practice them.

- smoking
- drying
- burying
- fermenting
- baking

Smoking Fish





Fermentation Pit

Breadfruit and bananas can be preserved for months in a pit.

Smoking

Sun drying

Smoked Foods

When food is smoked, some of the water inside the food is lost. Some of the smoke and resin from the wood goes into the food, giving the food a special taste. The loss of water and the smoke and resin help to preserve the food.

Foods suitable for smoking are:

- fish • shellfish • meat • breadfruit

Burying Foods

This was a method used to keep food, mostly root crops, fresh for one to three weeks. This was done when a lot of root crops had been harvested for a special occasion which was not going to happen immediately. This method was also used after a cyclone. Taro, taamu or yams, after they were harvested, were buried in a thin layer of earth to keep them fresh and to stop them from drying out in the sun before they could be used.

Fermentation

In the past, many Samoans used to dig large pits to put foods in when they were in season or plentiful, and were not being eaten quickly enough. Breadfruit and bananas were the main crops preserved in this way. This method is called pit fermentation. These foods were kept in a covered pit for months, even years. The Samoan name for food preserved in this way was "*masi*" - *masi ulu* or *masi fai*.

Baking

Baking is a good method to use for feasts or when a lot of food needs to be cooked at one time. Some foods will last longer if they are baked. When food is baked, the germs inside are killed. Also, the hard skin which forms on the outside of the food helps to keep germs out of the food. It gives foods a special taste. These baked foods can last up to 3 days without going off if they are well cooked and are dry. Also they need to be stored in a well ventilated area where there is a free flow of air around the baked food. In Samoa they usually put their left over baked breadfruit, taro or banana in a coconut leaf basket and hang it up in the fale where the air flows freely around it. When root crops are baked in the earth oven without their skins removed, they can last for about seven days.

ACTIVITY 14

Materials/Equipment

- Work Book and Pens.

In your class answer these questions. Discuss some of the changes that have occurred in your own families or community where you live.

1. List three modern methods of cooking in your culture.
2. List three traditional methods of cooking in your culture.
3. Name one type of food that is cooked by each of the modern and traditional methods you listed.
4. How are the foods prepared for each method of cooking?

ACTIVITY 15

Materials/Equipment

- Survey forms.
- Pens.

Baking food in an umu (earth oven) uses up a lot of firewood. Therefore it has become a method of cooking that is only used on special occasions in some areas of Samoa. How about your family? How often do you make a umu? Every Sunday? Once a month?

Do a survey of all the members of your class and find out how many of them have a umu *only* on Sunday. How many don't make an umu any more?

Traditional Methods of Keeping Food Safe

In the past Samoans cooked and stored foods in ways that are very different from what we use today. They used leaves from plants and trees as food covers, coconut shells and gourds as cups and in general cooked only what was needed for a meal or the day. There were not many left-overs except for foods like taro, ulu and other staple foods which they knew would last a few days when baked in the *umu*. The main cooking methods used were baking food in the *umu* or grilling over hot charcoals. People knew that if they baked food in a parcel of leaves and did not open the leaves after it was taken out of the *umu*, that food in the parcel would last for a whole day or longer before it started to spoil.

In the past people were very aware of the need to keep food clean in order to keep them safe and stop them from spoiling or "going off". They may not have known about the food spoilage agents that we are learning about now in science, but they knew from experience what worked and what didn't.

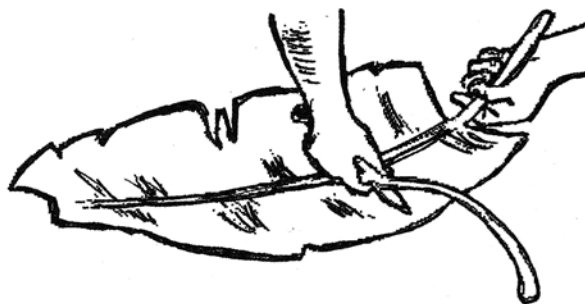
ACTIVITY 16

Materials/Equipment

- Collection of Local Leaves.
- Work Book and Pens.

Using leaves for wrapping and covering food as well as for serving food is a common practice in the traditional food practices of Samoans. Banana and breadfruit leaves are used a lot and in different ways. Can you think of any other leaves that are used? How do these leaves help to keep the food clean and safe for eating? Write out your answers in your book, in a table format, as in the example given below.

Name of the leaf	How it is used?	How does it help keep food safe?
1. Green breadfruit leaf.	Outside covering of food parcels. Covering of food plate "mailo" and laulau.	Coarse, hardy leaf that protects the inner leaves from dirt and contamination. Clean leaf, can be thrown away after use.
2. Green banana leaf.		
3. Ti leaves.		
4. Papata leaves.		
5. Teuila leaves.		



Using leaves for wrapping and covering food as well as for serving food is a common practice in the traditional food practices of Samoans.

Sami Lolo or Fermented Coconut sauce

(compiled by Brenda Sio from interviews with elderly members of our Community in the early 1980's.)

Coconut sauce is one of the numerous fermented food stuffs prepared and used traditionally by Pacific Island people. Other traditional fermented foods include fermented breadfruit, bananas, cassava, fish and coconut toddy.

These foods are not seen or eaten as commonly today as they were in the past. This could be because they take time to prepare but also there is such a variety of processed foods to choose from today that people cannot be bothered. They also have a strong smell which is not too popular. It is very similar in smell and taste to other fermented foods that can be bought in stores like cheese.

Beer is also a fermented food but is a product of an alcohol fermentation brought on by enzymes and yeasts. Fermented coconut is a product of an acid fermentation dominated by bacteria. The high acid levels produced by bacteria prevents the growth of other micro-organisms and in effect stabilises the coconut. There is no alcohol formed in this fermentation process.

ACTIVITY 17

Outlined below is the traditional and a modern recipe for making Sami Lolo. Why don't you ask your teacher if you can make this as a class project?

Materials/Equipment

- Green coconut (almost matured).
- Clean salt water (sea water).
- Stopper: dried banana leaf, coconut husk, shaved wood.

Traditional Recipe

What you do:

1. Collect the young coconut and husk it.
2. Make a hole (pierce the natural opening) in the top of the coconut.
3. Pour out (or drink) the coconut juice.
4. Refill the empty coconut with clean salt water.
(Do not fill to the top, leave a space).
5. Plug the hole at the top with a tight stopper.
6. Store on a shelf or put into a basket and hang up in a safe place.
7. Shake the coconut occasionally.
8. Test for the right consistency after 1-2 weeks.
9. Leave for 2-3 weeks for the best result.
10. Use as desired.

Materials/Equipment

- Green coconut (almost matured).
- Salted water (1 tsp. salt to 1 cup water).
- Clean jar or bottle.
- Tight-fitting lid.
- Knife.

Modern Recipe

What you do:

1. Collect the green coconut, husk it.
2. Crack the coconut, pour out the juice.
3. Take out the flesh from the shell.
4. Chop up the flesh into small pieces.
5. Put the chopped up flesh into a clean jar.
6. Pour salted water into the jar with the coconut flesh.
7. Do not fill to the top; leave a space.
8. Place the lid onto the jar - tightly.
9. Shake the jar occasionally.
10. Leave for one week.

Remember to practice good hygiene when making these recipes.

POINTS TO REMEMBER:

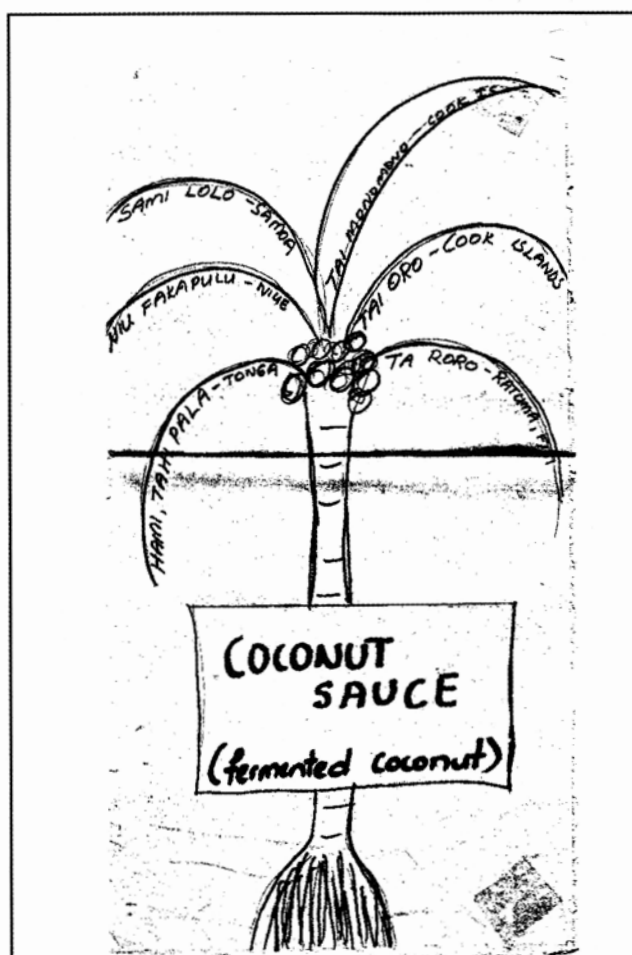
- Collect everything before starting.
- Use a coconut that is not too young or too matured.
- Wash your hands and utensils before starting.
- Cork the coconut or jar tightly.
- Shake the coconut or jar often.
- Test for readiness after one week.

Testing for readiness:

After one week pour out a little of the coconut sauce. If the sauce looks milky and is starting to thicken then it is best left until it is thick and curdled. Test for readiness after shaking the coconut.

How to use coconut sauce.

1. As a dressing: Use coconut sauce in the milky, liquid state for green salad dressing.
Use the thick coconut sauce for dressing in potato or bread fruit salads.
2. Use as a sauce with foods like fish, beef, pork, shellfish.
3. Eat coconut sauce with taro, breadfruit, yam, cassava or banana.
4. Use in the place of coconut cream for making taro leaf vegetable (palusami).
5. Use as a sandwich spread.



COCONUT SAUCE HAS A STRONG FLAVOUR AND ODOUR. IT TASTES A BIT LIKE VINEGAR AT FIRST. THE SMELL AND TASTE MIGHT PUT YOU OFF BUT REMEMBER IT IS A VERY NUTRITIOUS FOOD AND THE MORE YOU EAT IT THE MORE YOU WILL LIKE IT.

Unit 2: EATING FOR HEALTH

KEY WORDS

- Roles
- Substance
- Health
- Repair
- Vital
- Satisfy
- Limbs

Where does food come from?

Food is the name for all the different things we eat and drink to keep us alive. Food makes us grow, gives us energy and keeps us healthy if we have the right amounts of the right foods. The plants and animals we eat are grown on farms, in orchards and in market gardens. We also eat food from the sea.

In Samoa we have large quantities and varieties of meat to choose from: fish, chicken, pigs and beef cattle. Some animals give us a lot of different foods, for example, cattle give us meat and milk. Milk is processed so that it is available in many different forms, and is used to extract cream and make butter, cheese and yoghurt.

The plants we eat are many and varied. The main staple foods in Samoa are taro, giant taro, breadfruit yams and green bananas. Samoa's warm climate and fertile soil enables most edible plants to be grown anywhere in the country.

Some foods are processed after they are taken from the growing areas. They are taken to factories and processed to give us a greater variety of food that we can keep in cans and packets for long periods of time.

Food is one of our basic needs of life. We cannot live without food.

We need food :

- To satisfy hunger.
- To make the body grow and repair worn out parts.
- To provide the vital substances needed for health.
- To give energy for body warmth and activity.



ACTIVITY 1

Materials/Equipment

- Work Book and Pens.
- Newsprint and Markers.

Work in Groups.

Working in a group of 3 or 4 members, make a list of 10 foods from each category below. Note down where we get these foods from (part of the country or place).

- Locally grown fruits.
- Locally grown vegetables.
- Locally produced meat.
- Locally processed foods.

Record your findings on a large piece of paper and take turns to report to the rest of your class.

Many factors can affect the availability of food

The time of year can affect the availability of fruits and vegetables. In Samoa many of our fruits are seasonal. That means they only bear fruit at a certain time of the year. For example, mangoes fruit from September to January.

Fish can also be affected by the weather or the temperature of the sea.

ACTIVITY 2

Materials/Equipment

- Work Book and Pens.

1. Discuss how the time of year (season) affects the availability of local food.
2. Discuss other factors that affect the availability of local food.

The Three Food Groups

Energy Food Group

Our bodies need energy to enable them to work properly. Every time we move, we use energy. We need energy for work and play. Even when we are asleep our bodies are using energy. Our hearts keep beating, we keep breathing and our lungs continue to take in air and filter out carbon dioxide. We must therefore eat food that provides us with energy every day. Foods that provide energy contain starch and sugar or fats and oils.

ACTIVITY 3

Materials/Equipment

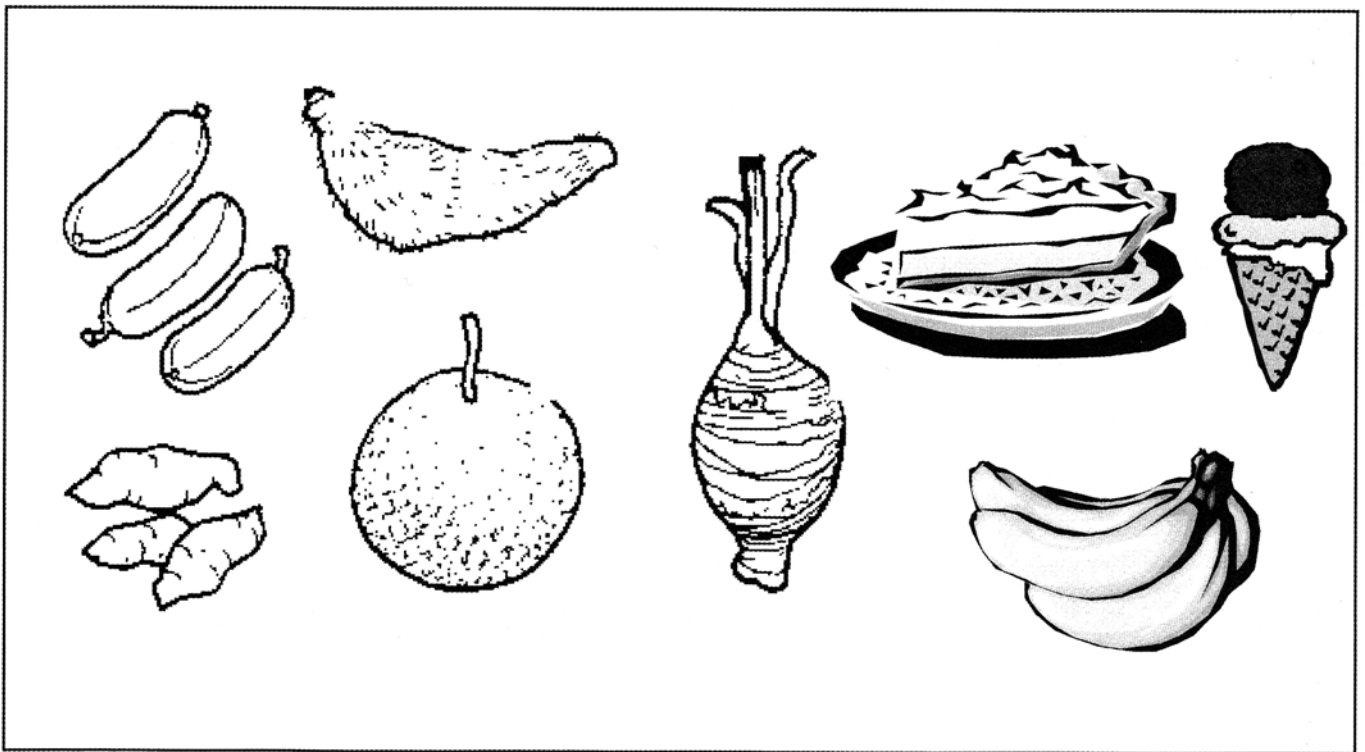
- Work Book and Pens.

Food that gives us energy

In your work book place the following words into three groups under the following headings.

- **Starchy food.**
- **Sweet food.**
- **Fatty or oily food.**

oil	taro	sugar
dripping	breadfruit	sugar cane
fat	cassava	jam
coconut oil	yam	sweet fruits
margarine	cooking bananas	sweet biscuits
mayonnaise	all fried food	lollies
rice	butter	pies
bread	cream	



Energy Foods

Do you know why a banana, which is a fruit, is found in both the Energy and the Protective Food Group?

Body-building Food Group

Our bodies are made from smaller units called cells. These cells are joined together into tissues. We have different types of tissue in different parts of our bodies such as heart tissue, muscle tissue and skin tissue. Just as houses wear out and need repair, our body tissues wear out and need repair too. In order to make, maintain and repair tissues we need the nutrient called protein to have strong bodies and grow well. Foods that contain protein are called body-building foods and we need to eat some of these foods every day.

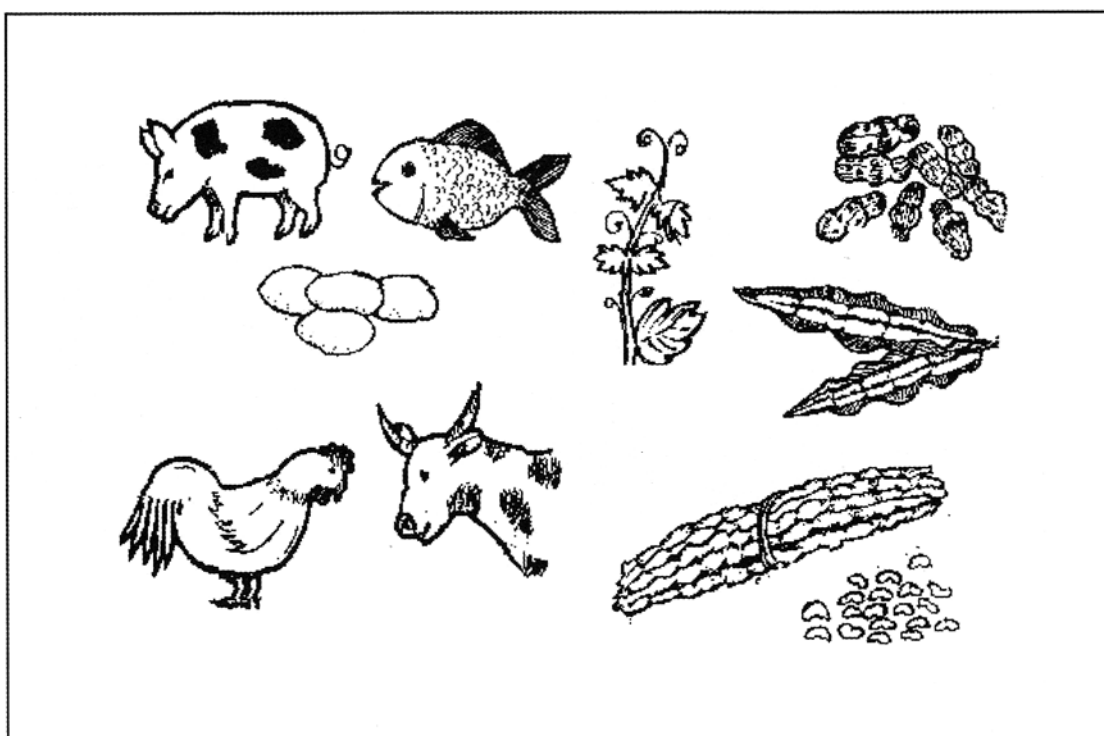
There are two main sources of body-building food.

1. **From animals;**

- fresh and tinned meat,
- fresh and tinned fish,
- shellfish, octopus and other seafoods,
- pork,
- birds; chickens, pigeons, ducks, eggs,
- crabs, prawns, eels,
- milk, cheese,
- grubs (afato).

2. **From plants;**

- different types of beans and peas - including dried peas and beans,
- peanuts and other nuts,
- dark green leafy vegetables like lau pele.



Protein Sources

Protective or Health Food Group

All foods that are called fruits or vegetables belong to the Protective or Health food group. These foods provide us with nutrients, vitamins and minerals. The main function of these nutrients in our body is to protect us from diseases, especially infectious diseases. We only need these nutrients in very small amounts but we must have them present for the proper functioning of our body. Therefore we need to eat some fruit and vegetables everyday.

The amounts of nutrients found in each fruit or vegetable are different. Some types of food have a lot and some contain only a few nutrients. Studies which analyse the amounts of nutrients in different fruits and vegetables show that the colour of green leafy vegetables can give us an idea of how rich they are in vitamins and minerals. In general the darker the green colour of a leafy vegetable, the more nutrients it has and the better it is for you.

For example, when you compare lettuce with *lau pele* you can see that *lau pele* has a darker green colour. Therefore *lau pele* should contain more nutrients than lettuce - right? Do you believe that? Turn to pages 68 and 70 and look at the graphs of green leaves that are there. Another name for *lau pele* is edible hibiscus. Which has more nutrients? *Lau pele* or lettuce?

The amount of nutrients also varies in different types of fruits. For example, fruits which are bright red or orange in colour contain a lot of Vitamin A which is needed for good eye-sight and healthy skin.

Most Samoans are not very keen on eating fruits and vegetables. So when they do eat fruits or vegetables it is important that they choose the ones that have a high nutritional value - what do you think? Do you agree?

Which leaf is darker in colour - lau pele or lettuce?



Lettuce



Lau pele

ACTIVITY 4

Materials/Equipment

- Survey Forms and Pens.

Your teacher may help you organise a survey to find out which are the most popular fruits and vegetables eaten after you do the activity outlined below.

Take a look through the list of fruits and vegetables below. Circle all the red or orange coloured fruits and underline the dark green coloured vegetables. Are the fruits and vegetables that you identified your favourite ones?

Vegetables

ferns (*e.g., moemoe laugapapa*)
 carrots
 pumpkin
 corn
 cucumber
 tomatoes
 head cabbage
 sweet potato
 green peppers
 Chinese cabbage
 pumpkin tips
 spring onions
 watercress
 taro (young leaves)
 eggplant
 pele (edible hibiscus)
 tamaligi aina (drumstick leaves)
 kangkong (swamp cabbage)
 sweet potato leaves
 beans
 peas
 chilli leaves (lau polo feu)
 Indian pennywort leaves (lau togotogo)

Fruits

pawpaw
 guava
 mango
 pineapple
 oranges
 mandarins
 lemon
 avocado
 vi
 water melon
 ripe banana
 passion fruit
 star fruit
 sour sop
 coconut (green)

How much fruit and vegetables should I eat?

The Nutrition Centre of the Health Department is encouraging Samoans to eat five or more pieces or servings of fruits and vegetables a day so that we can get all the vitamins and minerals our bodies need for good health.

To help improve the Nutritional Status of Samoans the Ministry of Agriculture (MAFFM) implemented their Fruit Tree Project to introduce and make available to Samoans many new varieties of tropical fruits. These new fruits are now available at the market and the fruit trees are sold from the Horticulture Centre at Nafanua. Some of these fruits look and taste different to the local fruits that we are used to. However we encourage you to try them out and ask questions about how to grow and eat them.

ACTIVITY 5

Materials/Equipment

- Transport for Field Trip to Agriculture MAFFM Horticulture Centres at Nafanua or Atele.
- Organise a Guest Speaker.
- Survey Forms and Pens.

You can ask your teacher to arrange a field trip to the Ministry of Agriculture's (MAFFM) Horticulture Centres at Nafanua or Atele or ask an Agricultural Extension Officer to come and talk to your class about these new fruits.

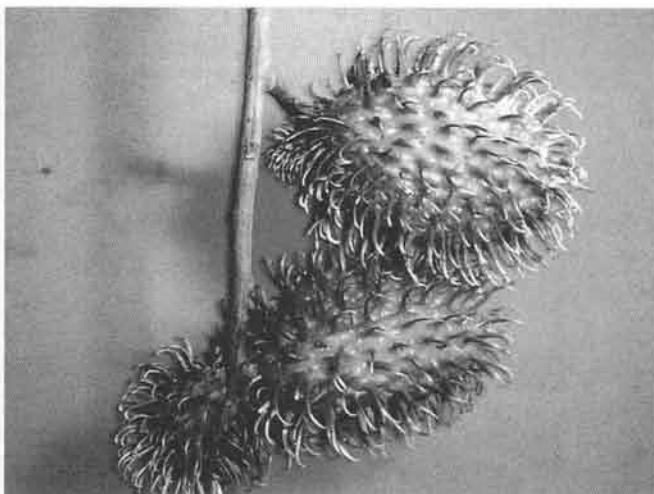
Outlined below are the pictures and names of some of the new fruit varieties grown and sold at Nafanua and Atele. Look carefully at these pictures and check which ones you have seen or eaten before.

Do a survey of how many students in your class have eaten these fruits.

Have you seen or eaten any of these new fruit varieties now growing in Samoa?



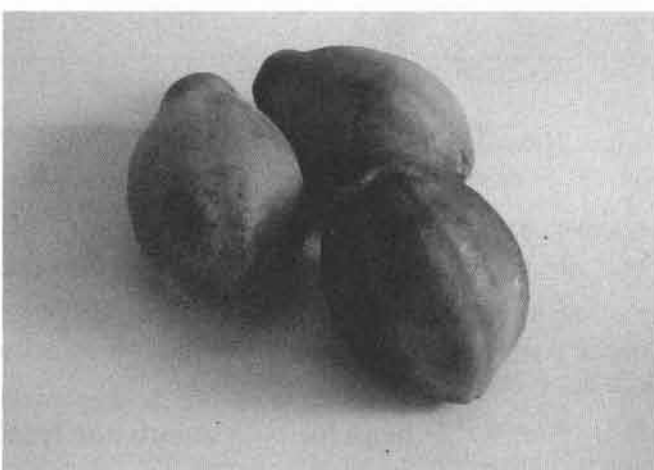
Rollinia (Samoan name - Sasalapa palagi poo le sasalapa samasama).



*Rambutan (Samoan -
Lamutana).*



*Pomelo (Samoan -
Pomelo poo le moli
meleke).*










*Hawaiian Solo
Papaya (Samoan
- Esi Hauai).*



Soursop (Samoan - sasalapa).

Each of these three food groups play a role in the function of our bodies.

Energy Food Group	 <ul style="list-style-type: none"> • These foods provide the energy needed to keep the internal organs working e.g., our heart, our digestive system. • These foods provide our bodies with warmth. • These food provide the energy we need to move our limbs for work and play.
Body-building Food Group	 <ul style="list-style-type: none"> • Helps form many of the important body fluids e.g., our saliva and the digestive juices, our blood. • Replaces tissues that are broken down by diseases. • Builds new tissues and cells for body growth. • Replaces and repairs cells that become worn out during life.
Protective Food Group	<ul style="list-style-type: none"> • Prevents and protects our bodies from different diseases. • Prevents deficiency diseases which are due to a lack of certain nutrients. • Ensures we look well e.g., bright eyes, smooth skin, shiny hair, strong white teeth. • Helps our body fight off infection. • Helps to keep our bodies working properly e.g., Vitamin C helps the body absorb iron from food. <div style="display: flex; justify-content: space-around; align-items: center;">      </div>

Food Nutrients

What are nutrients?

All food is made up of a mixture of chemical substances called nutrients. There are many different kinds of nutrients. The most important ones are used to provide our bodies with the materials we need for growth, maintenance and repair of worn-out body parts, and for energy.

There are six essential nutrients that our bodies must have in order to function properly. These are carbohydrates, proteins, minerals, vitamins, fats and water. Our bodies need all these nutrients everyday (in varying amounts) in order to function properly.

KEY WORDS

- Essential
- Function
- Maintenance
- Team



All the nutrients work in the body as a team, in a similar way to players playing together in a rugby team.

ACTIVITY 6

Materials/Equipment

- Work Book and Pens.

Compare how a rugby team plays and works together, to the nutrients that we get from food and how they function in the body.

1. What are the similarities in the way a rugby team functions and the way nutrients function in the body? Make a list.
2. Is having order and someone in charge important to the way the rugby team functions? How about the nutrients and their function in our bodies? Who is in charge in a Rugby team? Who is in charge of our bodies?
3. Give reasons why we say that these nutrients work together as a team.
4. What do you think will happen if one of these nutrients is missing? Does it affect the rugby team when one of their key players is missing for a game?

The Six Food Nutrients: What do they do?

KEY WORDS

- Constipation
- Thyroid gland
- Bowels

The Six Food Nutrients	What they do
Proteins	<ul style="list-style-type: none"> • Build new cells e.g., muscles and hair. • Repair body tissues.
Fats and Oils	<ul style="list-style-type: none"> • Provide heat and energy. • Satisfy hunger.
Carbohydrates	<ul style="list-style-type: none"> • Provide heat and energy (sugars and starches). • Prevent constipation. • Keep the bowels functioning daily.
Vitamins	<ul style="list-style-type: none"> • Prevent diseases which are caused by the lack of vitamins. • Protect the body from infections.
Minerals	<ul style="list-style-type: none"> • Iron is needed for healthy blood that can carry oxygen around the body. • Calcium is needed for bones and teeth. • Iodine is needed for proper functioning of thyroid gland.
Water	<ul style="list-style-type: none"> • Regulates the body temperature. • Gets rid of waste. • Carries nutrients in the blood.

ACTIVITY 7**Materials/Equipment**

- Work Book and Pens.

In your exercise books do the following activities.

1. Complete the table following with the food sources of nutrients.

Name of Nutrient	Name of food it is found in	Food group to which it belongs	Function(s) in the body
Protein	Beef, eggs, fish, chicken peas, beans.	Body-building.	Growth and body tissue repair.
Carbohydrates			
Vitamins			
Minerals			
Fats and oils			
Water			

2. Answer True or False to the following.
 - (a) The body needs nutrients in different amounts.
 - (b) The main function of vitamins and minerals is to make people grow.
 - (c) Protein is especially important for babies and infants.
 - (d) Water and fibre help the body get rid of its waste products easily.
3. Mix and Match. Match the correct definition in Column B with the Nutrient in Column A.

Column A	Column B
1. Protein 2. Carbohydrates 3. Fats 4. Vitamins 5. Minerals 6. Water	(a) Gives us warmth and helps us to stop feeling hungry. (b) Helps to regulate body temperature and gets rid of wastes. (c) Keeps the body healthy and protects the body from infectious diseases. (d) Provides us with heat and energy for work and play. (e) Builds new cells and repairs tissues. (f) For healthy blood, and formation of strong bones.

Selecting Food for Maximum Nutrition

KEY WORDS

- Harvest
- Slime
- Poultry
- Firm
- Crisp
- Weevils
- Dents
- Bulges
- Chipped
- Sealed
- Bruises
- Rot

Foods taste best and are most nutritious when they are carefully selected.

Selection guide for foods.

This guide tells you what you should look for when gathering, harvesting or buying different foods.

Product	What to look for:
Fresh Fish	<ul style="list-style-type: none"> • Firm flesh. • Bright, clear rounded eyes. • Fresh smell. • Red gills. • No slime. • Shiny skin and scales.

Product	What to look for:
Fresh Shellfish	<ul style="list-style-type: none"> • Fresh smell. • Shells that are tightly closed.
Meat	<ul style="list-style-type: none"> • Good colour (red for beef, pink for pork). • Moist flesh. • Good smell. • Firm fat. • No dirt.
Poultry	<ul style="list-style-type: none"> • Good colour (light pink, no bruises). • Good smell.
Green Vegetables	<ul style="list-style-type: none"> • Green colour. • Firm and crisp. • Freshly picked vegetables.
Fruits	<ul style="list-style-type: none"> • Firmness. • Good colour. • Unbroken skin. • No bruises.
Root Crops	<ul style="list-style-type: none"> • Freshly harvested food (except for yams). • No bruises. • No damage from rot or worms.
Flour	<ul style="list-style-type: none"> • Good smell. • Fine, dry grains. • Dry powder. • No weevils. • Wholemeal flour (this has more food value than plain flour).
Rice	<ul style="list-style-type: none"> • Good smell. • Clean and dry. • No weevils. • Brown rice (this has more food value than white rice).
Bread	<ul style="list-style-type: none"> • Clean loaves. • Freshly baked. • No mould. • No damage from rats or cockroaches.

Did you know that foods that are not fresh have less Nutritional Value?

Always choose food that is fresh.

Other processed food	<ul style="list-style-type: none"> • Tins that look new (no rust, dents or bulges); not old ones. • Jars that have clean tops. • Bottles that are not chipped. • Packages that are whole and not torn. • Packages with no weevils in them.
Frozen foods	<ul style="list-style-type: none"> • Firmly frozen. • Contained in a sealed, unbroken package. • Free of ice on the package or food.

ACTIVITY 8

Materials/Equipment

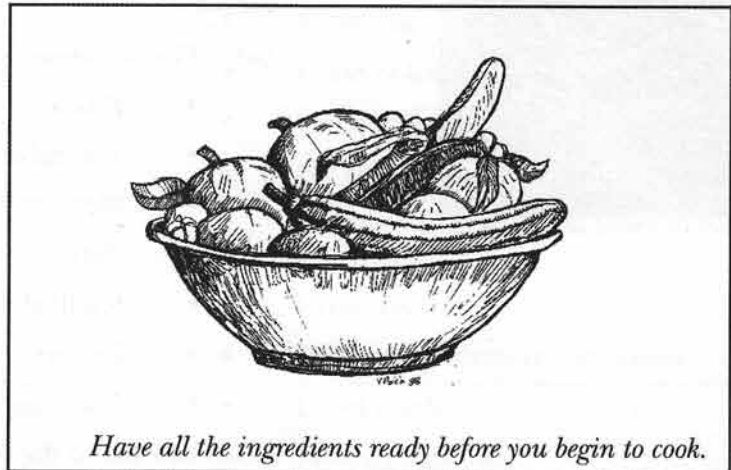
- Transport for Field Trip to Food Market or Shops/Roadside Stall.
- Paper and Pens...

- Go to several food gardens, shops and markets and inspect the foods.
 - How can you tell if the following foods are fresh?

• Fruits	• Rice
• Vegetables	• Flour
• Meat	• Bread
• Fish	• Canned foods
• Shellfish	• Bottled foods
• Poultry	• Packet of chips
• Root crops	• Container of milk
 - Did any of the foods that you inspected seem unsafe? Explain to the teacher why you thought this.
- Ask your teacher to invite a health inspector to discuss with your class the local health standards of foods sold in the stores and markets.
- What should be done if:
 - You find out that there are weevils in the flour you just bought from the shop?
 - A lady selling pancakes at the Fugalei market picks up the pancakes with her bare hands and wraps them in newspaper for you?

Basic Rules When Preparing or Cooking Food

1. Dress neatly.
Hair should be neatly cut, or pinned off the face, or tied up.
Wear non-slip shoes.
2. Wash hands thoroughly and clean fingernails.
3. Do not prepare food if you have scabies or other sores on your hands.
Always cover your nose or mouth if you sneeze or cough.
4. Be clean: use clean equipment, food and water and work on clean bench tops or tables.
5. Plan your work well and do not hurry unnecessarily. Work efficiently. Use as little equipment as necessary. Have all the ingredients and utensils ready before you begin to cook.



6. Be aware of possibly dangerous situations to prevent accidents. For example; mop up any spilt liquid, pick up broken glass, do not touch electrical equipment with wet hands, and turn saucepan handles towards the stove.
7. Handle sharp knives and axes with care. Cut food on a chopping board, if possible.
8. Take care when cooking with fat or oil. Do not let it spill. If a fire starts, smother the flames with a lid, blanket or soil. Turn off the heat source, if possible.
9. Before leaving the kitchen check that it is clean, that the equipment has been put away and that all electrical or gas knobs are switched off.

Preparing Food to Conserve Nutrients

KEY WORDS

- Smother
- Utensil
- Spices
- Bare
- Texture
- Technique
- Greased
- Aware
- Accurate
- Dangerous
- Soak
- Scabies
- Utensils
- Efficiently
- Switch
- Proportion
- Gas knobs
- Knobs

Things to remember when preparing foods

When washing food make sure that:

- You wash the food when it is whole, not after it has been cut up; this removes dangerous worm-eggs and dirt that can cause illness.

When peeling food make sure that:

- You peel food after it has been washed;
- You remove only the skin that is not eaten;
- You peel thinly (most food value is just under the skin so peel thinly);
- You do not soak peeled food as you get a loss of water-soluble nutrients.

When cutting food make sure that:

- You cut food in the best way for maintaining its food value, its appearance and its quality;
- Different foods are cut in different ways for different reasons. For example: when cutting up beef strips you need to cut against the grain of the muscle fibres so you don't end up with tough strips of beef;
- You do not cut vegetables too small for cooking as this can reduce the food value due to loss of water soluble vitamins.

Before you cook make sure that you:

- Read the recipe carefully and make a work plan.
- Prepare yourself - wash your hands, wear a clean apron and tie back your hair;
- Take out the necessary equipment;
- Pre-heat the oven;
- Measure out ingredients; and,
- Always remember the *Basic Rules for preparing or cooking food* given earlier.

Preparation Tips

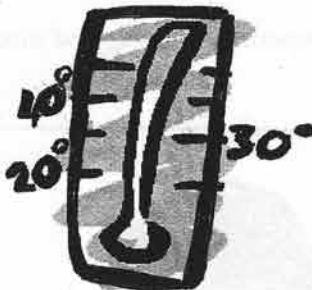
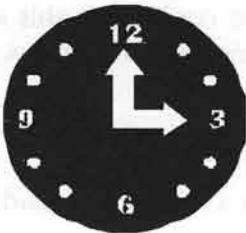


Peel food after it has been washed and remove only the skin that is not eaten.



When cutting beef strips cut against the grain so you don't end up with tough strips of beef.

Carrying Out Practical Activities



Accurate measuring is very important in recipes.

Measuring Skills

In food preparation you need to measure accurately so that you can make successful recipes into successful dishes. Measuring food is a 'technique'; a single action carried out with food.

Accurate measuring is very important in recipes such as cakes and biscuits, where you need the correct proportions so that you can gain the correct texture in the finished products.

Variations of spices and flavouring in recipes will produce different flavours and make food interesting. You need to know just how much of each spice or flavouring to use in order to get the flavour you want.

The amount of thickening you decide to use in a sauce will produce thicker or thinner products. Making a sauce is a 'process' because it uses at least four techniques e.g., measuring, blending, stirring and thickening.

The amount of sugar used will create a sweeter or less sweet product to produce the desired taste.

It is also very important that the techniques and processes applied are correctly carried out so that recipes produce successful food products that are hygienic and good to eat.

Use this Recipe to practise your Measuring Skills.

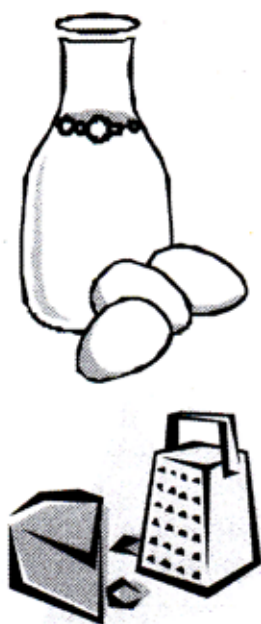
Koko Samoa Brownies

Ingredients	Servings	
	10	20
Margarine (500g)	$\frac{1}{2}$	1
Koko Samoa Grated (cup)	$\frac{3}{4}$	$1\frac{1}{4}$
Sugar (cup)	1	2
Eggs (number)	3	6
Flour (cups)	$1\frac{1}{2}$	3
Salt (tsp)	$\frac{1}{4}$	$\frac{1}{2}$
Baking powder (tsp)	1	2
Vanilla (tsp)	1	2

This recipe is taken from the Nutrition Centre. It has been trialed in the kitchen by the Nutrition staff. Recipe tested: 31/7/98

Method:

1. Heat the oven to 180 °C.
2. Grease and flour a baking dish.
3. Melt butter in pot and add grated koko Samoa.



4. Stir. Remove from heat.
5. In another bowl, mix eggs and sugar. Mix well.
6. Add flour, salt, and baking powder to egg mixture.
7. Lastly, add vanilla, and melted butter and koko mixture. Stir well.

Pour into greased tin and bake at 180 °C for 30-40 minutes. If large mixture, bake in 2 tins.

Preparation and cooking time: 1 hour
Serving size: 1 slice of cake
Serving weight: 60g
Serves: Serves 10 or 20 people.

ACTIVITY 9

Materials/Equipment

- Work Book and Pens.

1. Name at least three techniques used in this recipe.
2. Why do you need to grease the baking tin for this recipe ?
3. Do you need to store the koko Samoa brownie slices in an airtight tin?
4. Have you ever used koko Samoa in baking cakes before? How does it differ from cocoa powder? Which do you prefer?

Terms used in food preparation and cooking

In food preparation and cooking there are special terms for the techniques used to carry out the different processes in cooking food. They have their own special meanings which tell you how to prepare food, combine ingredients, cook and finish dishes which have been prepared.

Below are some techniques and processes used in food preparation.

Technique	Meaning
Chop	• To cut roughly into small pieces.
Cube	• To cut into squares.
Grate	• To rub food against a grater, or to slice into small pieces.
Peel	• To remove a thin layer of skin from fruits and vegetables.
Slice	• To cut into thin layers.
Combine	• To mix together the listed ingredients, usually by stirring.

Technique	Meaning
Cream	• To combine shortening (fat) and sugar till light and creamy.
Knead	• To shape a flour mixture by hand, to combine ingredients well and to make smooth.
Mix	• To combine together the listed ingredients, usually by stirring.
Sift	• To shake dry ingredients through a strainer or sifter.
Stir	• To mix together with a circular motion.
Rub in	• To combine shortening with flour using the tips of the fingers.
Melt	• To change a solid into a liquid by using heat.

ACTIVITY 10

Materials/Equipment

- Work Book and Pens.

In your exercise book fill in the techniques involved in each of the processes listed.

Processes	Techniques
Bread dough	Measuring, mixing, kneading, raising, shaping
Roux sauce	Measuring, mixing, boiling, stirring, thickening
Pastry Making	-
Blended sauce	-
Stir Frying	-
Scone Dough	-
Salad Making	-

Recipes

A recipe is one way in which we communicate how we want a certain dish to be prepared or cooked. A recipe is a set of directions for mixing and preparing food.

In every subject that we study, there are special ways of using words, or words might have a special meaning for that subject. **Recipe** is a word that is very specific for food preparation and cooking.

1. **Name** - the name of the dish.
2. **Ingredients** - types and amounts of food needed.
3. **Method** - the instructions set out in order of preparation.

Check out the following recipe. Does it contain all the three basic parts of a recipe?

Do you know
which process this
recipe uses?

..... YES !
The Salad Making
Process.

List the techniques
used for this process.

Fruit Salad

Ingredients

- Pineapple
- Pawpaw
- Bananas
- Lemon juice
- Sugar

Method:

1. Peel pineapple, pawpaw and bananas. Cut into small pieces and place in a bowl.
2. Add lemon juice and sugar to taste.
3. Mix together and keep in a refrigerator until ready to eat.

Note:

Fruit salad may be served plain or with coconut cream, custard or ice-cream. It is also very attractive when served in coconut shells or hollowed out pineapple skins.

Fruit Salad can be made with any combination of fruits.

Recipe Abbreviations

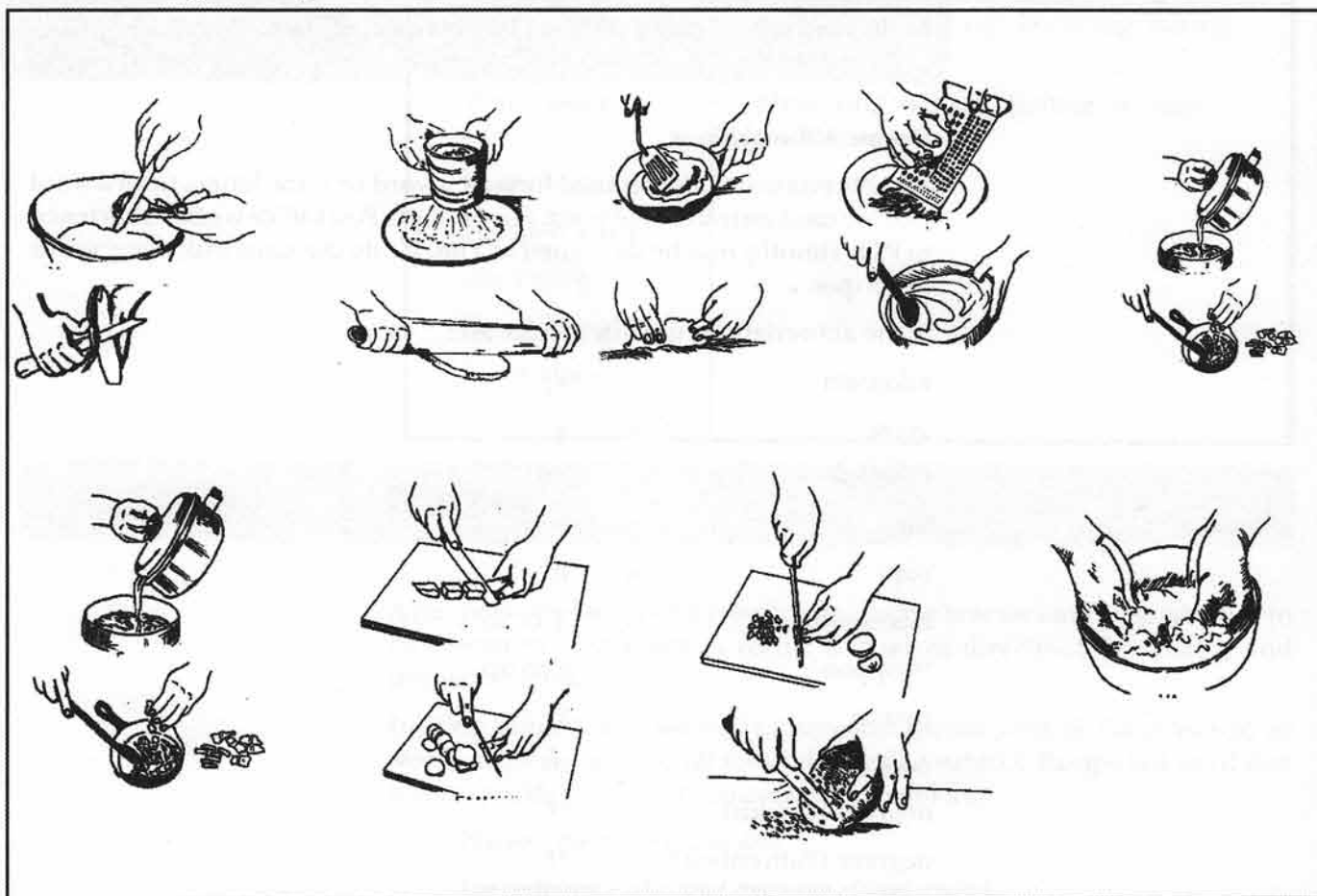
An abbreviation is a shortened form of a word or some letters from a word that are used instead of the word. For example Post Office is often shortened to P.O. Timothy may be shortened to Tim. We do the same with many words in recipes.

Some abbreviations used in recipes are:

kilogram	=	kg
gram	=	g
millilitre	=	ml
litre	=	l
cup	=	c
tablespoon	=	T or tb
teaspoon	=	t or tsp
pound	=	lb
ounce	=	oz
degrees (Celsius)	=	°C
degrees (Fahrenheit)	=	°F

Metric kitchen measures:

1 tablespoon	=	15ml
1 dessertspoon	=	10 ml
1 teaspoon	=	5 ml
1/2 teaspoon	=	2.5 ml
2 teaspoons	=	10 ml
3 teaspoons	=	1 tablespoon
1 litre jug	=	1000 ml
1/2 litre jug	=	500 ml
1/4 litre jug	=	250 ml
1 cup	=	250 ml
1/2 cup	=	125 ml
1/4 cup	=	62.5 ml
16 tablespoons	=	1 cup (approximately)
4 cups	=	1 litre.

Some Cooking Techniques

ACTIVITY 11

Materials/Equipment

- Work Book and Pens.

From the pictures on the previous page choose which picture illustrates the following cooking techniques.

- Stirring food in a sauce pan;
- Scraping taro or breadfruit;
- Measuring a cup of milk;
- Measuring a cup of flour;
- Peeling potatoes;
- Beating egg whites;
- Slicing onions;
- Sifting dry ingredients;
- Straining water.

The creaming process of cake making



Creaming

The sugar and fat are beaten together until the mixture is white and fluffy. This is called creaming. For basic cakes, half as much fat as flour is used.

Eggs

Are usually added next. Beat well after adding each egg. Then add other liquids, generally alternately with the sifted flour, salt and raising agent. Flour is folded in, *not* beaten in, to keep the mixture light.

ACTIVITY 12

Materials/Equipment

- Provide Ingredients.

Try these recipes.

Basic Cake Recipes

Ingredients

- 60 g butter or margarine
- 60 g sugar
- 1 egg
- 1 teaspoon vanilla

Method

1. Cream butter and sugar.
2. Add egg and beat well.

3. Add vanilla.
4. Add sifted flour and salt alternately with milk. Begin and end with flour.
5. For small cakes, place spoonfuls of the mixture into patty papers on an oven tray.
6. Bake in moderate oven for 15 minutes.
7. Remove from oven. Take off tray and place on a wire tray to cool.
8. When cool, cake is ready for eating.

Pumpkin Scones

Ingredients

- 1 Tablespoon butter
- 1 Tablespoon sugar
- 1/4 cup mashed pumpkin
- 1/4 cup milk
- 1 1/2 cups self-raising flour
- 1/2 teaspoon salt
- 1 egg

Method

1. Cream butter and sugar.
2. Beat in pumpkin, beaten egg and milk.
3. Stir in sifted flour and salt.
4. Turn out onto a floured board. Knead lightly. Press out evenly to about 2.5cm thickness.
5. Cut out with floured scone cutter.
6. Place dough on a floured scone tray.
7. Bake in a hot oven for 15-20 minutes.
8. Cool in a clean tea-towel.
9. Break open with the fingers and butter the scones.

ACTIVITY 13

Materials/Equipment

- Work Book and Pens.

Answer these questions in your exercise book.

1. Explain the terms:
 - Cream;
 - Add alternately;
 - Blend.
2. Give two reasons for sifting the flour before adding it to the creamed mixture.
3. What methods should be used when stirring in the flour and why?

KEY WORDS

- Resembles
- Bread crumbs
- Well
- Blade
- Brush
- Topping
- Wedges

Making Scone dough or pastry

The butter is rubbed into the flour mixture using the tips of the fingers until the mixture resembles fine bread crumbs. You should not get flour on to the palm of your hands. Moist ingredients such as eggs and milk are used to bind the flour mixture together.

Try these Recipes.

ACTIVITY 14-1

Materials/Equipment

- Flour, Butter, Milk, Baking Powder, Salt.
- mixing bowl.
- Oven Tray.
- Oven.



Basic Scone Dough

Basic Plain Scone Recipe

Ingredients

- | | |
|---------------------------|---------------------|
| 2 cups self-raising flour | 1 cup milk. |
| 1/2 teaspoon salt | 1 Tablespoon butter |

Method

1. Sift flour and salt into a bowl.
2. Rub butter into flour with the tips of the fingers.
3. Make a well in the centre of the mixture. Pour in milk and stir with the back of a knife to form a soft dough.
4. Turn out on to a greased and floured scone tray.
5. Press out with floured fingers till dough is 2 - 3cm thick and is a rectangular shape.
6. Mark into squares with a lightly floured knife.
7. Brush tops of scones with milk.
8. Bake in a very hot oven (225 °C) for 15 minutes or until golden brown.

ACTIVITY 14-2**Materials/Equipment**

- Scone Dough Ingredients.
- Fresh Tomatoes or Preparation.
- Topping Materials
- Mixing Bowl.
- Oven Tray.
- Oven.

**Samoaan Pizza****Pizza****Ingredients**

Basic scone dough

Pizza base: sliced tomatoes and/or tomato puree, sauce, or paste.

Select your own:

- Diced ham, sausage, bacon.
- Cooked mince.
- Diced pineapple.
- Diced onion.
- Diced capsicum.
- Sliced mushrooms.
- Prawns.
- Cheese for topping, approximately 125g grated cheese.

Method

1. Knead scone dough lightly. Roll out or press out to fit a greased and floured pizza tray (any baking tray).
2. Spread with tomato puree, paste or sliced tomatoes.
3. Add selected topping in layers to make it look attractive.
4. Sprinkle with grated cheese.
5. Bake in hot oven for 25 minutes.
6. Serve hot. Cut into wedges.

ACTIVITY 15**Materials/Equipment**

- Work Book and Pens.

1. What can you do to change this pizza recipe into a Samoaan pizza recipe?
2. How can you make pizza in the village if you do not have cheese and the other ingredients that are given here?
3. Divide your class up into four groups and have a competition for the best Samoaan pizza.
4. Have the teacher or your friends judge the pizza on the following criteria:
 - Nutritious (contains vegetables).
 - Economical (cheap & easy to make).
 - Tasty.

Preparing Dough

1. Why should fingertips be used to rub butter through the flour?
2. Why should a knife be used to mix the liquid into the dry ingredients?
3. Give a nutritional reason for using wholemeal flour instead of white or refined flour?
4. Which shelf in the oven is best for baking scones?
5. How many techniques are used for making basic scone dough? List them.
6. How many techniques are used to make the same dough into pizza?

ACTIVITY 16

KEY WORDS

- Bicarbonate of soda (baking soda)
- Syrup
- Treacle
- Loaves
- Ginger bread
- Muffins
- Frothy
- Airtight

Melt and mix Process

This is a quick and simple process of combining ingredients to make various cakes, biscuits and scones. The fat is melted first. It should be melted with the sugar, syrup, honey or treacle, then combined with other ingredients such as egg and bicarbonate of soda, before being stirred into the dry ingredients. The baking soda is added to keep the mixture light especially if it also contains syrup or treacle. Ginger breads, boiled fruit cakes, date loaves and varieties of biscuits and muffins often use this process.

Try this Recipe.

Anzac Biscuits.

Ingredients

- 1 cup self-raising flour
- 1 cup rolled oats
- 1 cup sugar
- 1 cup coconut
- 4 Tablespoons or 100 gram butter
- 1 Tablespoon golden syrup
- 3 Tablespoons hot water
- 1 teaspoon bicarbonate of soda.

Method:

1. Combine flour, rolled oats, sugar and coconut in bowl.
2. Melt golden syrup and butter in hot water till it boils.
3. Take off stove and add bicarbonate of soda. Stir till frothy.

4. Pour into dry ingredients and mix well.
5. Place teaspoonfuls on greased and floured tin, allowing space to spread.
6. Bake in a slow oven till golden.
7. Remove from tray and cool on wire tray.
8. Store in air-tight tin to keep crisp.

ACTIVITY 17

Materials/Equipment

- Work Book and Pens.

1. What name is used to describe the purpose of bicarbonate of soda in recipes?
2. What is the difference between baking soda and baking powder?
3. Explain the following techniques - chop, combine, press out.
4. Give the correct temperatures for the following oven settings:
 - Hot oven?
 - Moderate Oven?

Cooking Food

KEY WORDS

- Digest
- Moist
- Flavour
- Temperature
- Preservative
- Distinct
- Bread crumbs
- Fillets
- Absorbent
- Ingredients
- Accurately
- Creamy
- Grease

Why cook foods?

- To soften food such as meat or shellfish so it is easier to eat.
- To soften starchy foods like taro, yams, cassava, rice, yams etc., so the body can digest them.
- To make some foods safe by killing micro-organisms so that we do not get sick when we eat them. Some foods like pork can make us sick if we don't cook them properly.
- To improve the flavour of food.
- To keep the food for later use.

How we cook foods

There are many methods of cooking:

- Moist cooking methods are ones that use liquid e.g., milk or water.
- Dry cooking methods use no liquids.

Baking

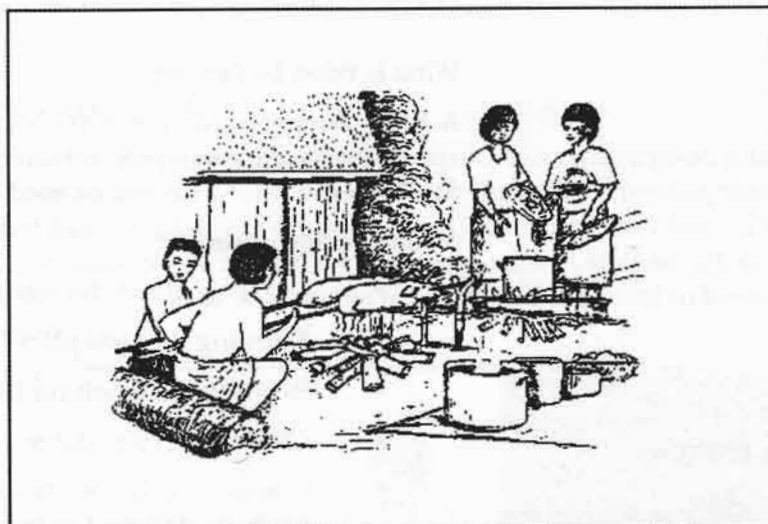
- Is cooking food in the oven without fat or oil.
- Some food value is lost because the foods are cooked by their own steam at a high temperature.

- Baked food can be stored for a longer time.

Roasting

- Is a dry method of cooking food in fat or oil in an oven.
- Improves the flavour but adds fat to the recipe.
- Only a limited number of food items can be roasted.

Did you know:
Whenever food
is cooked some
nutrients are lost?
Do you know which
nutrients are destroyed
by heat?



Food like pork must be cooked properly.

Unit 3: FOOD BUDGETING

What is Food Budgeting?

A Food Budget is the name for a plan used to work out the best way to spend the money you have available and to purchase the most nutritious food you can afford for you or your family.

A food budget involves:

- Knowing about the nutrients that food contains.
- Knowing the best places to obtain food from.
- Reading the labels on food packages and tins.
- Checking expiry dates on processed food.
- Comparing the amounts and prices of similar food products made by different companies.
- Comparing imported (store bought) food to locally available or home grown foods.

KEY WORDS

- Budget
- Available
- Purchase
- Afford
- Nutritional
- Value
- Convenience food
- Exaggerated
- Tedious
- Bombarded
- Conception



Healthy food is not necessarily expensive food

Did you know that:

1. Planning meals ahead of time;
2. Using food when it is freshest and most nutritious; and,
3. Making economic food choices;

are the three most important factors in meal planning?

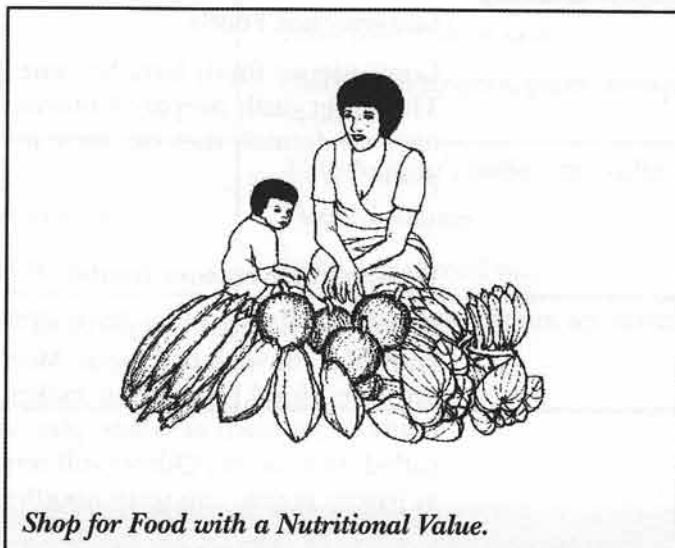


Imported foods have a lot of status.

There are always people who buy meat to show that they can afford expensive food, or those who buy lots of food to prove they are affluent or of good standing in a village. However the quantity of something does not necessarily mean quality, that is, how good it actually is. There are also people who make the mistake of thinking that if you spend more on something then that thing is better than something that costs less.

What do you shop for?

From a health perspective it is best to shop for food with a good nutritional value. There is always a temptation to buy the ever-increasing varieties of imported foods available in our shops. It is important therefore, if we want to include these foods in our meals to add variety, that we know how to budget the money we have available for food. We also need to know how to shop wisely.



Shop for Food with a Nutritional Value.

People buy food for different reasons and not always because they need it. We often get tempted to buy food because it looks attractive in the way it is displayed or advertised on T.V.

The increased availability of imported food and our dependence on money to enable us to buy this food, has made it much more important for us to know how to shop and to budget the money we spend on food.

Good nutritional value and the food that we buy.

The type of meal that a family eats usually depends on several factors. These include:

- Money available to spend on food.
- Number of people in the household.
- Where you live - urban or rural area.
- Whether you have a vegetable(food) garden or grow other crops.

- Availability of food gifts from relatives.
- Whether markets or shops are close by.
- Whether you have a refrigerator.
- Whether mother stays home or both parents work.

A food budget involves comparing store bought to locally available food.

Do you know:

that a diet does not mean you are trying to lose weight. Everyone has a diet. It is the food you eat.

Colourful meals

There is still more to think about when planning meals. The meals must not only taste good but must look attractive and look good to eat.

It doesn't matter how healthy, cheap, filling and so on a meal is, if the people don't like the look of it or the taste of it they won't enjoy eating it. They may not eat it at all! People enjoy foods that have a variety of **colours, flavours and textures**.

Convenience Foods

Convenience foods have become a part of the lifestyles of most Samoans. They offer easily prepared alternatives to traditional fresh foods, and when used moderately they can form part of a well balanced and interesting diet plan.

What are convenience foods?

Foods which have been partly or wholly prepared by the manufacturer are known as convenience foods. Most convenience foods found in Samoa are imported food. This often makes them very expensive to buy. Some are ready to eat, such as salads, pies, sandwiches and biscuits, and may also be called 'fast foods'. Others still require preparation by the consumer, such as frozen pizzas, cup soup noodles and canned soups.

ACTIVITY 1

Materials/Equipment

- Research Forms.
- Work Books and Pens.

1. List the convenience foods that would be handy to have if you were lost in the bush.
2. Name some foods which may not be readily available fresh, but which can be bought all year round in convenience form.
3. Research one convenience food from its production through to its consumption. Present your findings in a comic strip form to tell the story.

Examples of convenience foods sold in Samoa.

Type	Requirement	Examples
Canned	No cooking. Heating only. Some cooking. Used as part of a meal.	Tuna, ham, fruit. Baby food, soup, pudding. Pies, vegetables. Special sauces, pie fillings.
Bottled	No cooking. Heating only. Used as part of a meal.	Tomato sauce, jam, pickles. Baby food. Special sauces.
Frozen	No thawing. Thawing only. Heating only. Some cooking.	Ice-cream. Cake. Fruit pies, fish in sauce. Pastry, fish fingers, pizza, complete meals.
Dehydrated	Just add water. Add water and let cook. Extra ingredients.	'Cup-A-Soup', coffee, porridge. Custard, sauces. Cake mix, bread mix.
Ready to eat	No further preparation.	Biscuits, cakes, sweets, ice-cream, pies, salads.

Why are convenience foods so popular?

While most people enjoy making interesting meals, it can sometimes become tedious preparing meals day after day. Convenience foods have become popular in families where both parents work outside the home and with people who lead busy lives. After a long day at work a meal made with convenience foods saves a lot of time and energy. For example, a frozen dinner can easily be thawed, heated and served, leaving little washing up to do afterwards!

These foods also make it easier for Samoans to entertain, either in the home or elsewhere. Just about anybody can produce a tasty and nutritious meal using the freezer and the microwave oven, or lay out a picnic feast using mainly convenience foods.

Convenience foods are heavily advertised, and thus people are encouraged to buy them and make them a part of their lifestyles. With recent rapid advances in technology, a much wider range of convenience foods has become available. Similarly, technology in the home has changed.

ACTIVITY 2

Materials/Equipment

- Television Set.
- Transport for Visit to Local Supermarket.
- Work Book and Pens.

1. Watch one hour of television for two consecutive days during the same time-slot each day, and record the advertisements aired during that time.
 - (a) What percentage of the ads were for food?
 - (b) What types of foods were promoted most?
 - (c) What special techniques were used to capture the consumers' attention and persuade them to buy the product?
 - (d) Overall, were the ads informative, misleading or exaggerated?
2. Visit your local supermarket shop and make a list of the foods displayed at eye level. What percentage of them are convenience foods?
3. To what extent are we being bombarded with food advertising in Samoa?
4. Is this becoming a problem?
5. Did you buy any foods this week as a result of the ads you saw on TV?
6. What are the most popular convenience foods in Samoa?
7. Conduct a survey to find out which convenience foods are popular among people in your age group, and find out why these foods are popular.

ACTIVITY 3

Materials/Equipment

- Work Book and Pens.
- Transport to Visit McDonalds.
- Practical: Provide Potatoes, Cooking Oil, Cooking Knife, Pot, Stove.

1. Compare the prices of the following potato products:
 - (a) Fresh unwashed potatoes.
 - (b) Canned potatoes.
 - (c) Frozen chips.
 - (d) Potato crisps.
 - (e) Instant mashed potato.
2. Calculate the price per kilogram for each and express your results as a bar graph. Discuss your results with the class.
3.
 - (a) Buy some french fries from McDonalds or another Restaurant in Apia. Find out how much a serving weighs.
 - (b) Cut up or slice some fresh potatoes and fry the slices in oil until you have the same amount as the purchased fries.
 - (c) Which fries worked out cheaper, the home-made or store bought ones?

Advantages & disadvantages of convenience foods

Advantages:

Convenience foods can be useful. In fact, there are many reasons for using them.

- They are quick and easy to prepare, saving time and energy.
- They are easy to store, either in the cupboard or the freezer.
- They may offer unusual dishes which normally require special skills to prepare.
- They are useful for unexpected guests or other emergencies.
- Foods can be enjoyed all year round because they keep longer.
- They are easy to transport, for both the manufacturer and the consumer.
- They provide safe meals of a known quality. (Manufacturers must meet specified hygiene and safety standards in order to be able to market their products.)
- There is usually little waste because convenience foods have a longer shelf life than fresh foods. (Therefore, food costs may be lowered).
- Poor cooks can rely on having a tasty and satisfactory meal. (There is not much they can do wrong!)
- The nutritional value may be as good as or better than fresh alternatives, as sometimes nutrients are added.
- They increase the variety of foods available in the marketplace.

After reading this list, you may think, it is no wonder that people consume an enormous amount of convenience food; however, we should also look at the disadvantages associated with them.

Disadvantages:

- They are often more expensive than fresh foods. (You pay for the preparation and packaging).
- The packaging used is often not recyclable and contributes to litter on our roadside, beaches, in natural reserve areas and other areas around our homes.
- The nutritional value of foods may be reduced through refining and processing.
- Some of these foods (especially the most popular ones) tend to be high in fat, salt and sugar, with very little fibre. (Over-consumption of them could lead to nutritional disorders).
- There may be less personal satisfaction for the person preparing the meal.

ACTIVITY 4

Materials/Equipment

- Transport to a Food Processing Plant.
- Video Cassette.
- Work Book and Pens.

1. Most families now have freezers, microwave ovens and other labour saving devices which make preparing foods easier and quicker.
Ask your teacher to have a class discussion about the different labour saving devices that are now available in your households. Make a list of all the devices that come up during the discussion.
2. Imagine you have just found out that you will be having guests for lunch in an hour's time. Plan two dishes you can have for lunch using mainly convenience foods.
3. Undertake a field excursion to a food processing plant that produces a popular convenience food.
4. Alternatively, watch a video showing how a convenience food is produced. Prepare a case study about your visit or the video.

Exploring economical ways of obtaining food

What shall I eat? Is this a question you ask often? What helps you decide what you are going to eat at any time?

- I know the food is healthy so I eat it.
- It is the only food I can find at home to eat.
- It is the cheapest food I can afford to buy.
- Cool people eat fries and drink coke so that's my choice too.
- I eat whatever I am given or can find to eat.
- I am so hungry I can eat a horse!

Which of these statements would you say are the ones most true for your situation? Which is the most usual deciding factor for you?

In Samoa many of us eat what is available. There are often limited choices that we can make depending on the type of life style we live or where we live in Samoa. Choices are different depending on whether we live in Apia or rural areas. Factors that could influence what we eat include:

- Money available to purchase food.
- The likes and dislikes of the person doing the cooking.
- The type of cooking facilities in the home.
- Whether both parents work (so they buy food from a Restaurant).
- Having electricity or not.
- Having a plantation or depending on the market.
- Father is a fisherman.

As you read through these factors which would you say is the most important in your family? **Money, right?**

Studies show that Pacific Islanders spend over half of what they earn on food. Is this true for your family?

Short Exercise

Make a list of all the items your family spent money on today under the following categories:

Items

Cost

What percentage was spent on food? _____%

KEY WORDS

- Exploring
- Economical
- Obtaining
- Edible
- Convenience
- Nutritional value

We have learned that we need to eat foods from the three different groups of food to be healthy!

But how can I get all the food I need for good health if I don't have enough money or my parents don't give me enough!

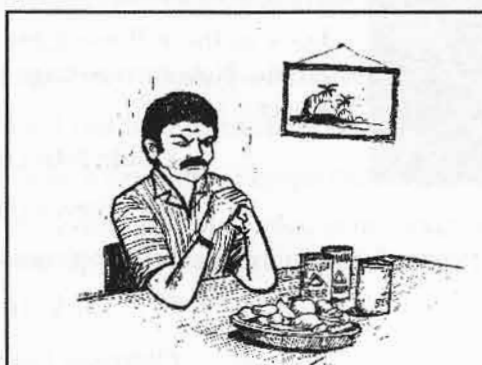


Taking time to think about the types of food that are available, the different choices you have and the best value for money is the best way to be sure that the food you eat is affordable yet healthy and delicious. This is all part of food budgeting.

Let's look at the different ways we can get food economically or at a price we can afford without making too many sacrifices!

It is all a matter of being practical and knowing what is available in your own community.

We need to know more about the food we eat so we can make informed choices.



We need to eat food from the *Protective or Health Food Group*; Fruits and Vegetables. How can we get the best value for money?

1. **Buy fruits that are in season!**
2. **Use and buy local fruits and vegetables.**
3. **Grow your own vegetables.**
4. **Make use of natural food resources. For example: Eat fruits that grow naturally in Samoa like guavas, sasalapa, esi, fai misiluki, nonu and vi. Can you think of any more?**

Question: In October which fruit would be cheaper to buy at the Market? Mangoes or oranges?

Answer: Mangoes of course, they are everywhere and cheap, so why not buy them.

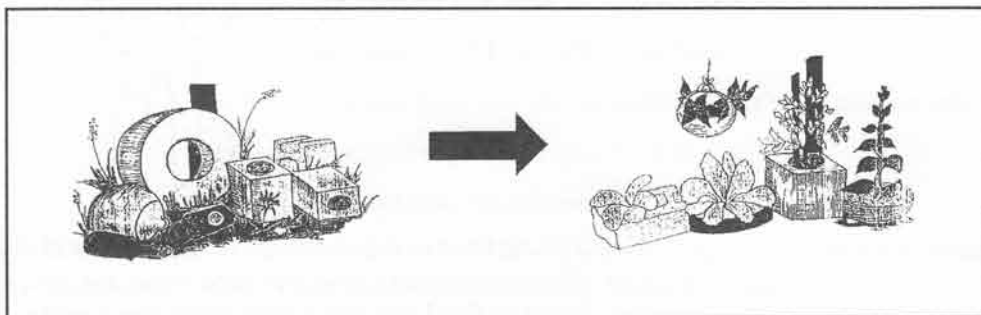
Question: How much does an apple cost compared to an esi?

Question: Which gives you more food for the amount you paid? an esi or an apple?

Question: Which costs more - a round or head cabbage grown in New Zealand or one grown in Samoa?

You can grow vegetables in containers like old tyres, tins, in anything that will hold soil. So a lack of land is not always a valid excuse for not having a vegetable garden.

Container gardens



ACTIVITY 5

Materials/Equipment

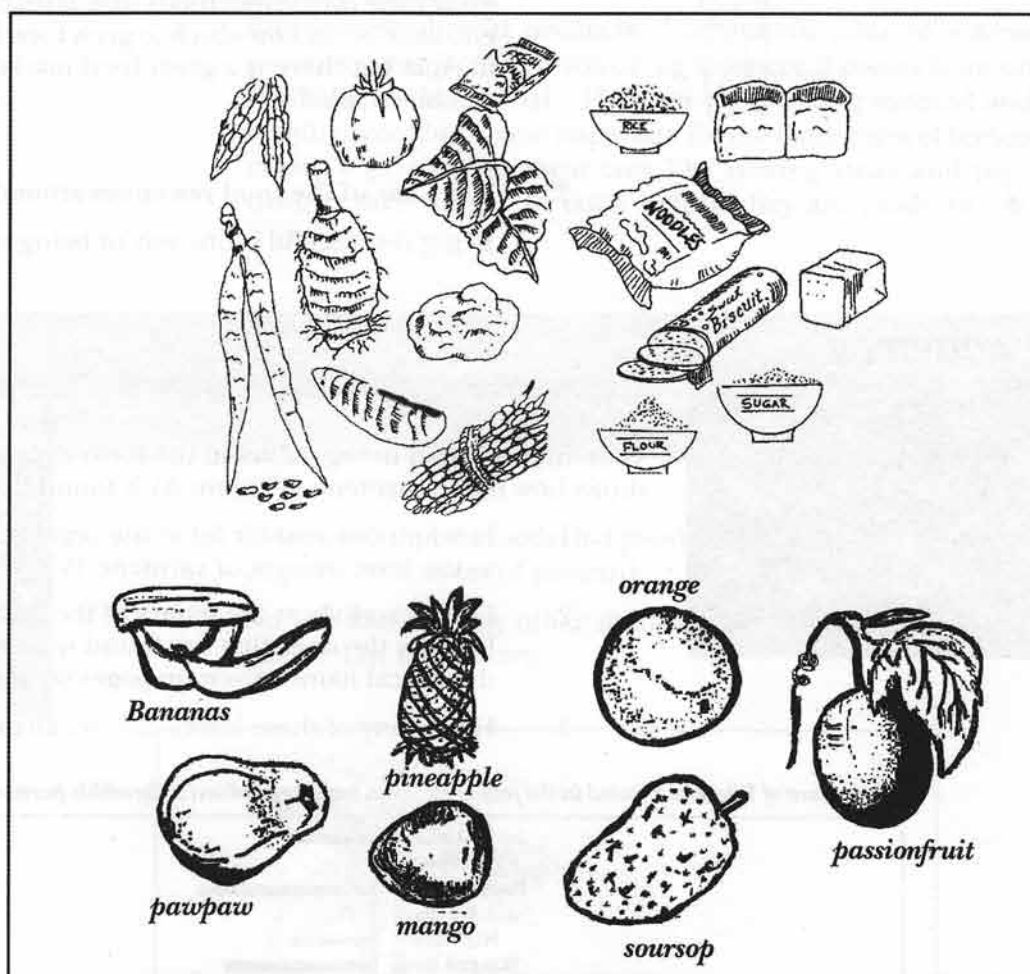
- Collection of Edible Leaves.
- Work Book and Pens.

How many edible green leaves do you know that are found here in Samoa?

Look at the following list of leaves and circle the ones that you know are edible. Now turn to page 68 to check the Vitamin A value of some of these leaves.

1. Edible hibiscus or hibiscus manihot (lau pele).
2. Taro leaves (lau luau).
3. Indian pennywort (lau togotogo).
4. Drumstick tree leaves (lau tamaligi aina).
5. Pumpkin tips (tumulumu maukeni).

6. Sweet potato leaves (lau umala).
7. Chilli pepper leaves (lau polo feu).
8. Creeping cabbage or kangkong (kapisi sosolo).
9. Creeping Spinach leaves - basella (lau pasela).
10. Chayote or Choko leaves (tumutumu soko).
11. Winged bean leaves (lau pi lele).
12. Fern leaves (e.g., moemoe o le laugapapa).
13. Papaya shoots (moemoe o lau esi).



ACTIVITY 6

Materials/Equipment

- Research Forms and Pens.

1. Research all the edible green leaves that grow near your house.
 - (a) Find out how to cook them!
 - (b) Make a list of food crops growing near your home.
 - (c) How does knowing what is naturally available to you to use, help you save money on buying food?

My uncle's breadfruit tree is loaded; I'll go and ask him for some.



We need food from the **Energy Food Group**. How can we obtain energy food without having to spend a lot of money?

1. **Eat Samoan local food when in season.**

Question: When it is breadfruit (ulu) season is it more economical to eat ulu or eat taro? Which will you choose, a basket of 10 ulu for \$5.00 or 5 small taros for \$20.00?

It really depends on the amount of money you have available to spend and the number of people you have to feed doesn't it?

2. **Grow Your Own.**

In Samoa it is fortunate that most people have access to land to grow their own staple foods like, taro, taamu, ulu, fai coconuts etc. Lack of land on which to grow food is sometimes a problem in Apia but there is a great food market at Fugalei where you can buy staple food.

3. **Make use of the food resources around you.**

Being resourceful is one way of being economical.

ACTIVITY 7

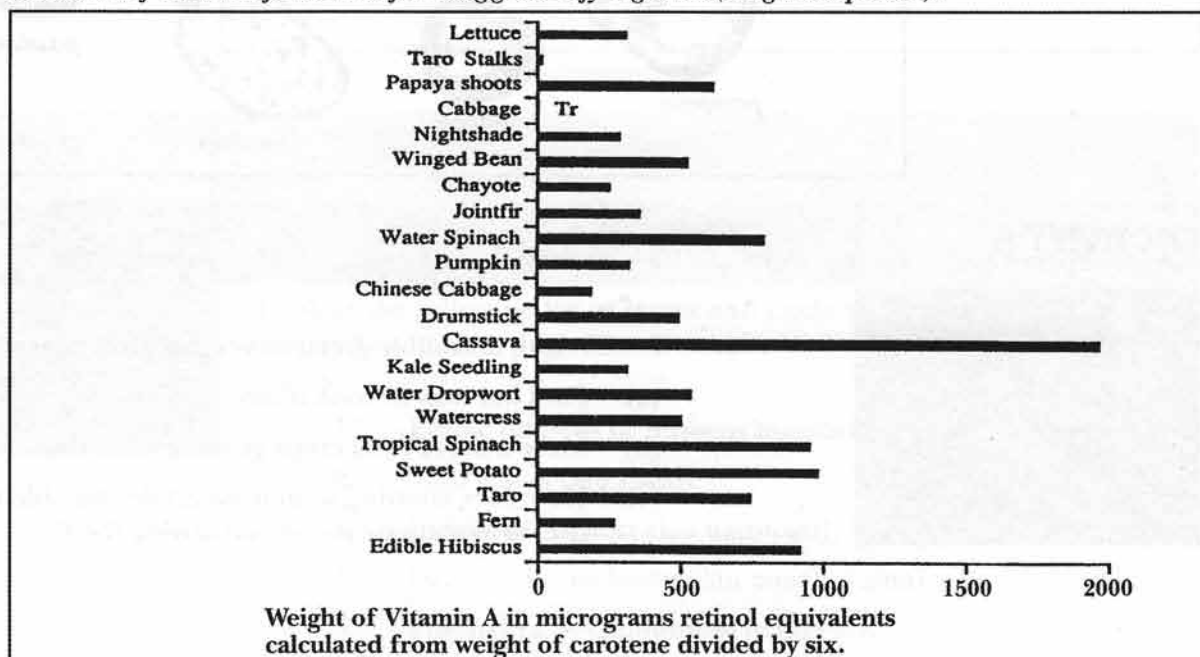
Materials/Equipment

- Work Books and Pens.

Vitamin A is found in vegetables in the form of carotene. The chart below shows how much carotene (Vitamin A) is found in each vegetable.

1. In your book make a list of the vegetables containing the most to the least amount of carotene (Vitamin A).
2. Look carefully at the names of the green leaves on the graph. Identify the ones that are found near your home by checking their local names given on pages 66 and 67.
3. How many of these leaves did you already know were edible?

The amount of Vitamin A found in the following green leafy vegetables (100g edible portion).



(Source: This chart is taken from the SPC Publication "The Leaves We Eat")

I need body building food. How can I obtain food from the Body Building Food Group that doesn't cost too much?



We need body building food. How can we obtain food from the *Body-building Food Group* that doesn't cost too much?

1. **Grow or gather your own food.**
 - Catch your own fish.
 - Go fishing for shellfish like tuitui and tugane.
 - Keep your own chickens, goats, pigs or cows for eggs, milk and meat.
2. **Eat non-meat sources of protein.**
3. **Buy food sources of protein that are not expensive.**
4. **Buy processed meat products.** The protein value of a meat product doesn't change according to where it comes from on the body of the animal. However the cooking method and length of cooking time is important for the tenderness of certain meats, e.g., tougher meat cuts like stewing steak and pig's trotters take longer to cook before they are ready to eat.

ACTIVITY 8

Materials/Equipment

- Work Books and Pens.

1. Make a list of plant foods that provide us with protein (refer to page 33 for sources of protein).
2. Do you know of any other shellfish or sea resources that are edible? List them down.



Some plants are a good source of protein

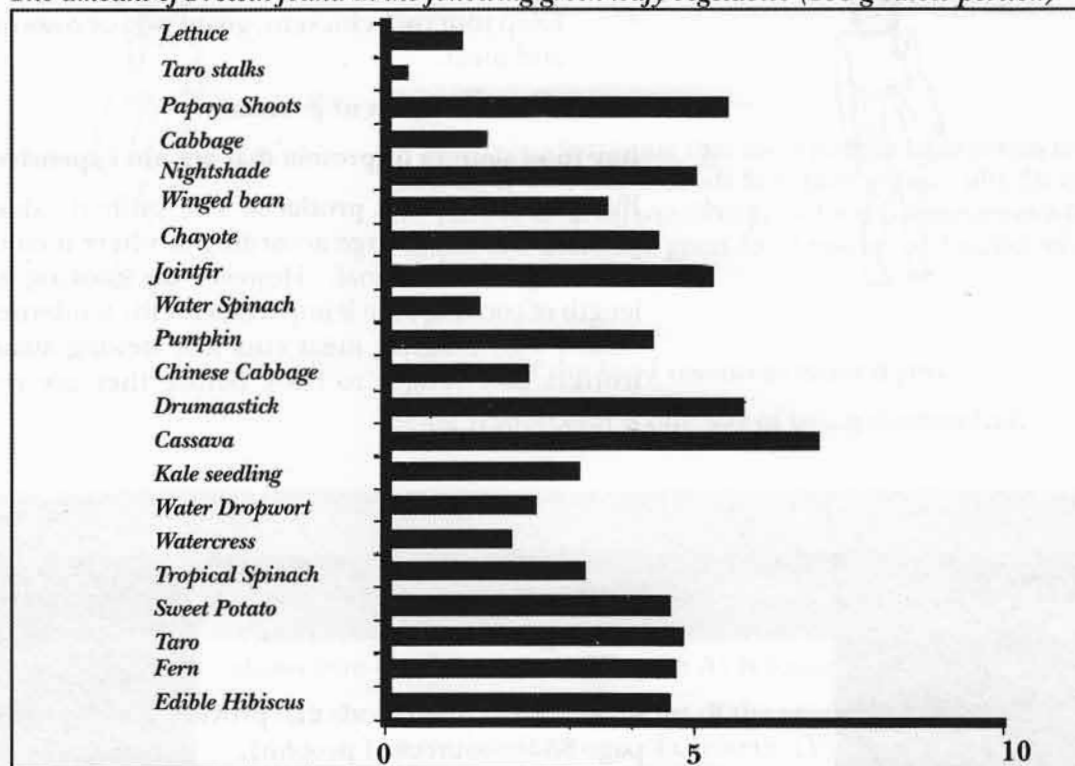
Foods that are made from animals or come from animal products also contain protein and can be used instead of meat.

E.g., • milk • eggs • cheese • yoghurt

Did you know that green leaves also contain protein?

Look at the Graph below and see how much protein is in green leaves.

The amount of Protein found in the following green leafy vegetables (100 g edible portion)



(Source: This chart is taken from the SPC Publication "The Leaves We Eat")

ACTIVITY 9

Materials/Equipment

- Work Book and Pens.

In your book, list ways you can use green leaves in meals or snacks to provide the body with important nutrients?

If you add green leafy vegetables to a dish made with mutton flaps, do you think that will make a difference to the nutritional value of that meal?

Rewrite the following list of meats in the order of the most expensive to the cheapest when you buy them in your local shops.

Types of Meat

- | | |
|-------------------|----------------------------------|
| 1. fillet steak | 6. pork chops |
| 2. stewing steak | 7. mutton chops |
| 3. chicken pieces | 8. pig's trotters (tapuvae puua) |
| 4. sausages | |
| 5. whole chicken | |

Most Expensive

1. _____ 2. _____ 3. _____ 4. _____

5. _____ 6. _____ 7. _____ 8. _____

Cheapest

ACTIVITY 10

Materials/Equipment

- Transport for visit to Supermarket.
- Work Book and Pens.

1. Compare the cost of the same amount of meat or fish with a similar type of processed food.
 - 1/2kg stew beef compared to 500g of pisupo.
 - 1/2kg fresh fish compared to 500g of eleni.
 - (a) Which cost more - the fresh or processed food?
2. Visit your local food shop or supermarket.
 - (a) Count how many types of canned, bottled or packaged meat is on the shelf.
 - (b) How many types of fresh meat products are in the refrigerators or freezers. Are there many types?
 - (c) Do you think the processed meats are better substitutes for the fresh meats that are available? Why?

Remember:

The protein value of the meat is the same no matter which part of the animal it is from!

Processed Foods

Processed foods are foods that have undergone some process to help them last longer than their natural life span. This enables us to have these foods available to us when they are not in season or do not grow in our country. These processes can be simple like drying; removing water from a food so it will last longer. They can also be more complicated, like cooking the food and putting it into a container that will keep out micro-organisms, so the food will not deteriorate but stay fresh, as in the case of canning.

Many processed foods also have substances added to them to help make them last longer and look attractive. However, some of these substances could be bad for your health, if they are taken in large amounts e.g. salt, sugar and fat.

Imported Processed Foods

Imported processed foods are those which are produced in other countries, but which can be purchased in our local shops; such as noodles, canned spaghetti, tinned fish and many others.

Here are some advantages and disadvantages of imported processed foods:

1. Advantages

- Quick and easy to make and serve.
- Can be kept for a long time.

2. Disadvantages

- Loss of some important nutrients.
- High salt, fat and sugar content.
- Can contribute to some non-communicable diseases like hypertension.
- Too expensive.

Local Processed Foods

These are foods that are processed and manufactured locally. Local manufacturers use similar processes to those used for imported processed foods. We should be aware that just because it is made in Samoa that does not make it better. The same is true for processed foods from overseas. The fact that something is made in New Zealand does not mean it will be better for you either.

ACTIVITY 11

Materials/Equipment

- Work Book and Pens.

1. Classify the following foods under the two headings - local processed food and imported processed food.

Food:

- | | |
|----------------------|----------------|
| • cake | • milk |
| • bread | • ice cream |
| • cereals | • tinned beans |
| • margarine | • tomato soup |
| • tinned corned beef | • tinned fish |
| • peanut butter | • soy sauce |
| • roasted peanuts | • banana chips |
| • potato chips | • flour |

- (a) Which of these foods fit into both groups?
- (b) Is there a difference in the local products compared to the overseas ones?

ACTIVITY 12

Materials/Equipment

- Survey Forms and Pens.

1. Discuss in small groups how often you cook local or imported processed foods at home.
2. Do a survey of the type of food most eaten by students in your class for lunch. How much of the food eaten by the students is processed food?

Are local and imported processed foods good for us?

There is no doubt that processed food has many advantages and adding variety to the daily diet is something many people appreciate about having processed foods available.

The most important thing to do is to choose wisely.

Most people in Samoa have become used to having processed foods as a part of their daily lives. You can choose to eat processed foods and remain healthy by mixing processed foods with fresh foods such as fish, fruits, green leaves and other vegetables. You can also choose more healthy processed foods like brown instead of white bread, plain roasted peanuts instead of salted peanuts, canned tuna in brine rather than tuna in oil. Can you think of any other examples?

When we depend on or eat too much processed foods is when problems can arise. For example, when people eat too many foods with a lot of salt in them, like tinned meat or salted beef, chips etc., they risk of suffering from hypertension or high blood pressure.

This is why it is very important for us to learn about nutrition. As more people in the world and within our country make new foods to cater to our demands, we must also learn about these new foods so that we know exactly what types of food we are eating and whether or not they are good for us. The more we know about the scientific side of certain foods, the better able we are to give our body the right kinds and right amounts of food, and to maintain good health.



It is important for us to know about food and nutrition so we can make healthy food choices.

Why are some snacks good and some bad?

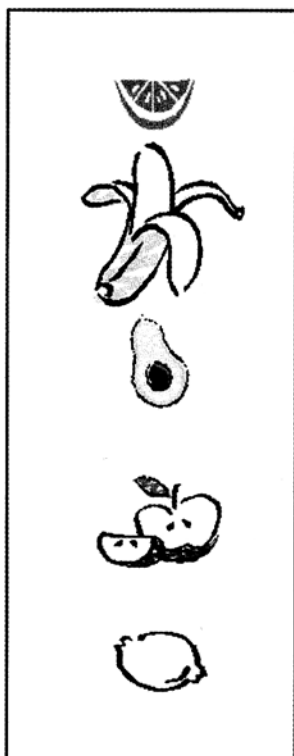
Snack-foods or snacks

In Samoa the processed foods that children and teenagers appear to be eating the most are snack foods. Snacks are foods that a person eats in-between meals. They, in themselves, are not considered a proper meal but something to keep away the hunger pains until the next meal. However, there is a danger in eating too many snacks that they can fill you up so that when it is meal time you will not eat the good and balanced meals that have been prepared for the family to eat.

Snack foods are an important part of a child's diet. Children can't take in too much food at one time because their stomachs are small so they need to eat more often to get all the nutrients that they need. School children are also very active with learning and playing and doing chores, and use up a lot of energy. They are still growing too, and are always hungry, so it is important that they eat snacks in between meals.

What are good snacks to eat?

Fruits are good snacks to eat. They are excellent sources of nutrients like Vitamins, especially Vitamin C and Vitamin A. They also contain carbohydrates, dietary fibre and water. Fruits are part of the Health and Protective Food Group.



Fruit is excellent snack food

Look at the list below for examples of good snack foods.

Savouries

- | | |
|-------------------|-------------------------------|
| • spring rolls | • popcorn |
| • peas | • coconut slices |
| • filled roti | • sushi |
| • taro & palusami | • pieces of cooked root crops |
| • sandwiches | • hamburgers |
| • boiled eggs | • filled rolls |
| • peanuts | • scones |
| • green bananas | |

Drinks

- | | |
|--------------------|----------------------|
| • milk | • niu |
| • lemon drinks | • fresh fruit drinks |
| • sugar cane juice | |

Fruit

- | | |
|----------------|-------------|
| • guava | • pineapple |
| • mango | • pawpaw |
| • ripe banana | • soursop |
| • passionfruit | • vi |

Following is a list of snacks that are not good for you.

- ice-cream
- sweet biscuits
- potato chips
- fried keke puua
- cheese snacks or other flavoured snacks and any packaged snacks with lots of additional sugar, salt or colourings and flavours (like twisties, bongoes, curls, windows etc).
- saiming or other packaged noodles
- chinese lollies (lolo saina, pau mago)
- cream buns
- soft drinks
- ice blocks
- chocolates/lollies
- chewing gum
- doughnuts
- sweetened cordial.
- deep-fried pancakes
- bottled fizzy drinks
- canned fizzy drinks

ACTIVITY 13

Materials/Equipment

- Work Book and Pens

1. Find the names of the good snack food choices in the word find below.
2. Make your own word find and swap with a friend.

m	i	l	k	h	n	a	g	b	d	f	e
a	r	q	p	o	i	l	u	k	i	l	g
n	t		n	t	u	m	a	f	p	h	j
g	n	p	w	d	x	y	v	p	e	d	s
o	s	o	z	o	a	x	a	c	p	t	i
	b	p	d	g	t	e	s	q	u	l	k
q	a	c	u	d	n	w	a	n	o	l	o
u	n	o	b	l	l	e	a	r	z	s	f
c	a	r	p	d	u	e	g	h	c		p
i	n	n	j	t	p	n	S	o	i	a	g
S	a	s	b	a	i	o	n	d	w	k	m
u	f	x	o	r	w	e	c	p	y	e	f
s	a	g	p	f	q	u	a	z	f	a	i
h	j	S	a	n	d	w	l	c	h	e	s
i	k	r	l	e	i	d	p	c	o	b	n

Snacks

There are many children who think their parents are being mean or bad when they do not allow them to eat twisties or drink coke every day or take chocolates to school to eat. Then there are also children whose parents allow them to have whatever they want to eat and they end up suffering from dental caries, being very over-weight, having really bad skin and having lots of sores. Which type of parent would you prefer your parent to be?

Most of the snack foods in the list of “not good” or poor snacks are foods with lots of salt, sugar or fat added to them. Also added to them are colouring, flavourings and other chemical compounds which are not good for our health if we have too much. When we read the label on the packet, the food might be made of flour but tastes and looks great because of all the different things that have been added to them. That is why these type of snack foods are also called “junk foods” because people think they contain a lot of good things from their taste but really they may have nothing in them but flour, salt and flavourings or other chemicals. That is why they are also called “empty calorie foods” because they can fill you up but you don’t get very many nutrients from them.

ACTIVITY 14

Materials/Equipment

- Work Book and Pens.

1. Next time you have one of the snack foods from the list of poor snack foods read what is written on the packet and find out if you are eating what you thought you were buying when you purchased your snack.
2. Complete the chart below by filling in some alternative snack food that will be more healthy for you to eat than the food that is on the list.

Snack Food	Reason why it is not good for you	Alternative
Potato chips	Too much salt. Too much fat.	Unsalted chips. Make your own.
Chocolate bar	Too much sugar.	
Saimin noodles	Just flour, too much salt and additives in the flavour pack. Too much fat.	
Coke	Only sugar and acid.	

To eat or not to eat noodles?

Noodles from packets or cup noodles have become very popular in Samoa. Most school children eat noodles for lunch, for snacks and some even eat dry noodles (saiming) straight from the packet as they are walking to school in the mornings. Packet noodles are not a complete meal in themselves. If you eat nothing but noodles every day you may feel full but you won't get many of the nutrients that you need to remain strong and healthy. How can you improve your meal of saiming noodles? Add vegetables and some meat or fish to it!



ACTIVITY 15

Materials/Equipment

- Work Book and Pens.

1. Discuss in groups the type of snack foods that you can make for yourselves at home.
2. Are they similar to the processed ones you buy in the shops?
3. Will you get more nutrients from the ones made at home? Will they be healthier for you? Why?
4. Which snacks will cost more? The ones made at home or the ones from the shop?

Abbreviations	Letters which are short for the words e.g., tsp means teaspoon.
Ability	Power or capacity to do or act.
Absorbent	Able to take in something.
Absorbing	Take in or soak up.
Accident	An unexpected event.
Accurate	Completely correct.
Affect	Influence, cause to have something.
Afford	Able to buy.
Agent	Someone or something that acts on behalf of another.
Airtight	Free from air/where air is excluded.
Alert	Quick to react, be awake.
Alternately	Occurring one after the other.
Appealing	Able to attract the feelings.
Available	That is found or present.
Aware	Know about something, realise it is there.
Bacteria	Tiny organisms which can cause diseases.
Barbecuing	Method of cooking food in dry heat.
Bicarbonate of soda	A kind of raising agent used in baking; also known as baking soda.
Blade	The flat cutting part of a knife.
Bleach	A chemical used to clean things thoroughly.
Bombarded	Attacked.
Bowels	Intestines.
Bread Crumbs	Powdered dry bread.
Bright	Shiny, brilliant.
Bruises	Marks shown on skin when hit.
Brush	An act of cleaning with a brush.
Budget	A plan of how to spend money wisely.
Bulge	A lump on a flat surface.
Bundle	A group of things loosely held together.
Cater	To provide food and service.
Cells	The simplest structure in living things.
Chipped	When a small piece is broken off the top or edge of a cup, plate or other dinner ware.
Combination	The putting together of things or ingredients.
Complex	Complicated, difficult, hard.

Condition	A particular state of something.
Constipated	Unable to pass solid waste from the bowels.
Construct	To build, form or devise by fitting parts.
Contaminate	To make impure.
Convenience	A food that needs less time, skill and energy to prepare than normal.
Cream	To be covered with a yellowish substance from milk.
Creamy	A smooth, liquid consistency.
Crispy	Crunchy.
Dents	To damage something by hitting and making a hollow on its surface.
Depend	To rely on someone or something for support.
Deserve	To merit something in return for actions.
Desperate	Little or no hope.
Desperate	Wanting something urgently.
Dessert spoon	dsp.
Detergent	A cleaning product which is not made from fat.
Deteriorate	To become rotten, to break down.
Diet	Food; what a person or animal usually eats and drinks.
Digest	To cut and break down something into smaller particles
Disinfectant	A chemical substance that kills germs.
Distinct	To be recognisable from others, important.
Economical	Being able use anything (resources) wisely.
Edible	Something which can be eaten.
Effect	The result of an action.
Efficiently	Thoroughly, able to do something without wasting time or energy.
Encourage	To give courage, hope. To give support.
Environmental factors	Conditions of the surroundings.
Enzymes	Any protein capable of catalysing a chemical
Equipment	Utensils and appliances.
Essential	Vitally important, absolutely necessary.
Evaluation	To test and comment on how something was done or carried out.
Exaggerate	To increase or enlarge abnormally.
Explanation	Giving detailed information about something.
Exploring	Discovering new things.
Ferment	Action of yeasts on food which produces acid and

	changes the food quality; helps to preserve some foods.
Fermenting	Leaving something to stand for a length of time to allow certain chemical changes to take place.
Fillet	Strips of tender boneless meat (beef, pork, poultry) or piece of fish with the bones removed.
Firm	Hard, not soft.
Fizzy	Sparkling sound.
Flavour	The taste of food.
Fluffy	Light without substance.
Food value	The quality of food, importance of a meal.
Function	Work, role.
Gas knobs	Controls.
Gently	Softly, lightly.
Germ	Tiny organisms that cause diseases.
Gingerbread	Bread made from ginger, syrup, flour, sugar etc.
Goal	General aim.
Grease	To apply oil or butter to the surface of something.
Grate	Break or slice into small pieces using a grater.
Harvest	To cut and gather a crop when its matured or ripe.
Health	Good, normal condition of the body, mind and soul.
Hygiene	The science of keeping healthy.
Hygienic	Sanitary, clean.
Ingredients	The list of food articles used in making a dish/food.
Junk foods	Rubbish food like chocolate, lollies, e.t.c.
Limbs	Arms and legs.
Loaves	Papa falaoa, a portion of bread.
Local	In, near or belonging to an area.
Nutritious	Contains most nutrients
Maintain	To keep in continuance or in a certain condition
Maintenance	Keeping something in good condition.
Malnourished	Poorly fed.
Micro-organisms	Small or tiny organisms.
Microscopic	Very small, tiny.
Minute	Very tiny.
Miserable	Unhappy, uncomfortable.
Moderate	To restrain; of average or medium quality.
Moist	Wet.

Muffins	Scones, a flat, thick, yeast cake.
Natural state	Normal condition.
Negative	No, not.
Nourish	To feed.
Nutrient	Chemical substance present in food.
Nutritional value	The importance of nutrition
Obtaining	Getting something or producing an object.
Occurrence	Happening.
Offal	The internal organs of animals used for food including brains, kidney, liver etc.
Perishable	Subject to decay or destruction.
Personal	Individual.
Poultry	Chicken and other birds raised for egg or meat.
Positive	Yes, agree.
Preservative	A substance that stops things from decaying.
Process	A series of actions in doing something.
Processes	A series of actions or techniques used to achieve something.
Production	The making of something e.g., Food.
Proportion	Part of.
Purchase	Buy.
Quantity	An amount, portion, number not definitely specified.
Raisin	Dried grape.
Rancid	Having a stale smell or taste.
Recommended	Suggested strongly.
Refrigerator	An electrical cool container in which you store food to keep it fresh.
Regulate	To control the way it does.
Repair	Fix or make better.
Ripen	To become sweet and change in colour.
Roles	The different parts people play at home or at work
Rot	To become bad.
Satisfy	To fulfil the requirement needed.
Scabies	Skin disease caused by a mite that burrows under the skin.
Sealed	Cover something securely.
Soak	To keep in a liquid for a certain length of time.
Spatula	A flat cooking equipment used for turning food during frying.

Spices	Powders or seeds from certain plants added to food to give it flavour.
Substance	Anything which is a solid, liquid, powder or paste.
Switch	A small control for electric device; to change to a different task.
Technique	A particular action or method of doing something.
Tedious	Long and tiresome, or being bored with doing something.
Texture	The way something feels when you touch it.
Traditional	Of a culture or way of life.
Topping	To decorate or garnish the top of pastries, desserts or cakes.
Utensils	Equipment used in cooking a meal.
Vital	Important.
Weevils	A type of beetle that eats grains and seeds of plants.
Yeast	A type of fungi that enables the fermentation of sugar.

Answers to Food Spoilage Summary on Page 19.

1. Enzymes, moulds & yeasts
2. Yeasts
3. Enzymes
4. Yeasts
5. Bacteria

