PRIMARY FOUR
HOLIDAY PACKAGE
SCIENCE

Name: ..... Stream .....

Food Path

Food path means the series of different stages of food production starting from clearing land up to the time of eating.

Types of food path

1) Village food path
2) Town food path
3) Earning food path

Village food path

This is the food path where farmers grow crops for home consumption

Stages of village food path

1- Land preparation (clearing the land)
2- Planting/sowing
3- Caring for crops
4- Harvesting
5- Storing crops
6- Cooking and eating

Town food path

This is the food path where farmers grow or produce food for sale.

Stages in town food path

1- Clearing the land
2- Planting
3- Caring for crops
4- Harvesting
5- Preserving
6- Transport
7- Buying and cooking food
8- Eating

Earning food path

This is the food path where people who work and get salary use it to buy food in markets.

Stages of earning food path

1- Getting salary/wages
2- Budgeting
3- Buying food
4- Cooking
5- Eating

Blocks of food path

Blocks of food path are problems faced in food production and may lead to little yield when harvested.

Examples of blocks of food path

1- Crop pests and diseases
2- Poor farming methods
3- Bad roads
4- Natural hazards e.g drought, heavy rains

Weather

Weather is the condition of the atmosphere at given time. Atmosphere is air in space.

Weather is the daily condition of the atmosphere recorded for a short period of time.

Climate: Is the average weather condition of the place recorded for a long period of time.

Types of weather/conditions of weather

- Rainy, – windy – sunny – cloudy

Elements of weather/factors of weather

- Rainfall - Cloud cover - Sunshine - Humidity
- Temperature - Air pressure - Wind

Rainfall

Rain is water falling in separate drops from clouds.

Rainfall is the amount of rain water that falls in a certain area at a certain time.

Rain gauge is an instrument that is used to measure the amount of rainfall.

The units for measuring rainfall are milliliters (ml) or millimetres (mm)

Types of rainfall

1) Relief rainfall (Orographic rainfall)
2) Convectional rainfall
3) Cyclonic rainfall (frontal rainfall)

Relief rainfall

This is a type of rainfall received around mountains and hilly places.

Moist air rises and cools over the mountain forming rain

The side of the mountain that receives rain is called *windward* side.

The other side remains dry and it is called the *leeward* side.

Cyclonic rainfall

This type of rainfall is received as a result of worm air meeting cold air in a certain place.

Warm air is light while cold air is heavy. Therefore, when they meet, warm air rises over the heavier cool air, cools and form clouds.

Assignment 1

1. What is air in space?

   _____

2. Which element of weather dries wet clothes?

   _____

3. In which type of weather do people put on heavy clothes?

   _____

4. What is the main natural source of water?

   _____

5. Why is a rain gauge placed in an open space?

   _____

Convectional rainfall

This is the type of rainfall received on land and places near water bodies.

Note: Convectional rainfall is formed as a result of processes that take place in the water cycle.

Water Cycle

This is the process of continuous movement of water in different states on above and below the surface of the earth.

Note: Water cycle is a process by which rain is formed.

The water cycle involves the following processes.

(a) **Evaporation**: Is a process by which water changes to vapour.
(b) **Condensation**: Is the process by which vapour changes to water.
(c) **Transpiration**: Is the process by which plants lose water to the atmosphere in form of water vapour through stomata.

Experiment to show water cycle

Things to use

- Source of heat e.g stove
- Cold water
- Kettle
- Cold container

Steps to follow

1) Boil water in a Kettle
2) Cover the top part until water evaporates
3) Hold a cold bottle at the spout.
4) Heat passes out the spout to reach the cold bottle and condenses back to liquid (water).

Assignment 2

1. The source of heat (stove) acts as the _____
2. Cold bottle acts as the _____
3. Kettle full of was acts as the _____
4. The drops of water represents the _____
5. Why should a rain gauge be raised at least 30cm above the ground?

_____

Uses of rainfall (advantages)

1) Rainfall provides water for domestic and industrial use.
2) It helps farmers' crops to grow well and have good yields.
3) It cools down the temperature in the atmosphere.
4) It softens the soil for easy cultivation and germination.
5) It increases the volume of water in water bodies for easy generation of hydro electricity power.

Dangers (disadvantages) of too much or heavy rainfall

1) Too much rainfall causes floods
2) Too much rainfall causes delay in transport
3) A lot of rainfall causes very cold temperatures
4) It brings difficulty in construction of roads, houses etc.
5) Too much rainfall can destroy crops and buildings.
6) Heavy rainfall can kill people.

Sunshine

Sunshine is energy from the sun.
It contains heat light energy.
Sunshine is measured by an instrument called sunshine recorder.
It measures the strength of sunshine received in a particular place.

Advantages of sunshine

1. It helps in rain formation
2. It dries harvested crops
3. It helps plants to make their own food
4. Sunshine helps our bodies to form strong bones
5. It dries wet clothes
6. It provides light that enables us to see.
7. Heat from the sun kills germs
8. It helps our skin to make vitamin D

Disadvantages of too much sunshine

1. It causes very hot weather
2. Too much sunshine makes the soil hard for cultivation
3. It dries water sources
4. It kills animals and plants

Assignment 3

1. State at least two uses of sunlight to people.
   (i) _____
   (ii) _____
2. Mention three uses of rain in the environment.
   (i) _____
   (ii) _____
   (iii) _____
3. How is weather different from climate?

_____

_____

_____

_____

<u>Clouds</u>

Clouds are visible condensed water vapour floating in atmosphere high above the ground.

<u>Types of clouds</u>

- Cirrus clouds - Stratus clouds
- Cumulus clouds - Nimbus clouds

1) **Cirrus clouds**

These clouds look like feathers in the sky.

They are the highest clouds in the sky.

They are a sign of fair weather.

2) **Cumulus clouds**

These are white clouds which resemble cotton piles with a flat bottom.

They indicate that warm air is moving upward in the atmosphere.

They can develop into thunder thus they may indicate rain.

3) **Stratus clouds**

They look like a huge grey blanket that hangs low in the sky.

Theses clouds are nearer the earth than the cumulus.

Fog is stratus clouds formed near the ground.

4) **Nimbus clouds**

These clouds are dark grey in colour

These are clouds that bring rain

They are nearest to the earth.

Uses if clouds in the environment

1- Clouds like Nimbus bring rain

2- Clouds protect people, plants and other animals from direct sunshine

Dangers of clouds

1- Very large and dark clouds may cause crashing of aeroplanes in the atmosphere.

2- Clouds cause thunder storms which can destroy lives and property in the environment.

1. How are numbus clouds important to farmers?

_____

2. Which clouds are nearest to the earth?

_____

3. Name the clouds that are the highest in the sky.

_____

4. How are clouds dangerous to pilots in the atmosphere?

_____

5. How are clouds important to plants and animals?

_____

Temperature

Temperature is the degree of hotness or coldness of a body or a place.

The instrument used to measure temperature is called a thermometer.

Temperature is measured in degrees

A thermometer is read in two scales;

i) Degrees Celsius/centigrade ($^{\circ}$C)

ii) Degrees Fahrenheit ($^{\circ}$F)

Inside the thermometer are liquids which expand to give accurate readings.

Types of thermometers

a) Clinical thermometer
b) Minimum and maximum thermometer
c) Scientific thermometer
d) Wall thermometer
e) Weather thermometer

Clinical thermometer

It is used in hospitals by health workers to measure the human body temperature.

The temperature of a human body must remain constant at 37°C or 98.4°F except when the person is sick.
The clinical thermometer is placed in the following places of the body.

1- In the mouth under the tongue to prevent biting and breaking of the bulb.
2- In the arm pit
3- In the anus
4- In the vagina

N.B: These parts maintain the temperature.

Liquids used in thermometers are; Mercury and Alcohol

Mercury: This is commonly used compared to alcohol.

<u>Advantages of mercury</u>

a) It does not wet or stick to the wall of the thermometer.
b) It is easily seen through the glass tube.
c) It expands easily
d) It does not freeze or evaporate.

Assignment 5

1. What is the normal position of mercury in the clinical thermometer?

   _____

2. What is the function of the kink on the clinical thermometer?

   _____

3. List down other two names of the kink.

   i) _____ ii) _____

4. Why do health workers shake the thermometer before taking the temperature? _____

   _____

Minimum and maximum thermometer

It is also called the six's thermometer as it was discovered by James Six.

The minimum and maximum thermometer is used to measure the lowest and highest temperature of the place/day.

It uses both liquids; mercury and alcohol.

The Six's thermometer is commonly used by the weather scientists (meteorologists)

Note

- Meteorologists are scientists (expert people) in knowing about weather.
- Meteorology is the study of weather

Humidity

Humidity is the amount of water vapour in the atmosphere

When there is a lot of water vapour in the air, the weather is said to be humid.

Humidity is measured by an instrument called hydrometer or wet and dry bulb.

Atmospheric pressure

This is the force exerted by air in the atmosphere.

It is caused by the movement of wind or air from one place to another.

Atmospheric pressure is measured by an instrument called a barometer.

Assignment 6

The table below shows the weather chart in Kampala city recorded for a week by the Six's thermometer.

Days of the week	Mon.	Tue.	Wed	Thu.	Fri.	Sat.	Sun.
Maximum Temperature	28°C	40°C	36°C	32°C	30°C	___	40°C
Minimum Temperature	24°C	12°C	22°C	12°C	10°C	___	30°C

1. What was the maximum temperature on Tuesday and Wednesday?

   _____

2. On which day(s) was the maximum temperature recorded?

   _____

3. On which day was temperature not recorded?

   _____

4. What was the minimum temperature on Monday and Sunday?

   _____

Wind instruments

Wind is moving air or Air in motion.

The instrument used to measure direction of wind is called a wind vane/ wind cock.

The arrow of the wind vane points in the direction from which wind is blowing.

Other wind instruments

Wind sock: - Shows the direction and strength of wind.
- It points in the direction in which wind is blowing.

Anemometer: This measures the speed of wind.

Advantages of wind

1. Wind helps to bring cold air in warm places.
2. It helps in pollination of plants
3. Wind helps farmers when winnowing
4. It helps in the formation of rainfall
5. It dries wet things for example paint, clothes etc.
6. Wind helps to produce electricity by running wind mills.
7. It is used to sail boats.

Disadvantages of wind

1. Wind spreads airborne diseases e.g tuberculosis
2. Strong wind causes soil erosion
3. Strong wind destroys houses, trees, plants and other property.
4. Wind causes storms on land, lakes, seas and become a transport problem.
5. It destroys growing crops

Stevenson screen

This is a wooden box in which some weather instruments are kept.

It is painted white to reflect heat.

The wood is a bad conductor of heat.

This makes the instruments free from heat.

Weather station

It is a place where weather instruments are placed

It should not be near houses or under trees.

It should be in a free space to get correct amount of rainfall in a rain gauge.

A Stevenson screen is used to keep delicate weather instruments e.g thermometer, measuring cylinder, barometer, hygrometer, record book.

Advantages of keeping daily record of weather

1- It helps to know the daily weather changes
2- A farmer can know when the first planting will take place.
3- It allows proper planning e.g harvesting, storage of crops.
4- It helps to know how to conserve the environment.

Assignment 7

1. **Draw the following weather instruments**
   Wind vane
   wind sock
   Anemometer
   Stevenson screen
2. Why is a Stevenson screen made up of wood?

   _____

3. Why is the Stevenson screen painted white?

   _____

Food and Nutrition

Food: Is anything eaten or drunk because of its nutritional values.

Nutrition: Is the process by which food is taken in and used by the body.

Nutrients: Are substances that are needed for maintenance and growth of the body.

Feeding: Is the taking in of food in the body.

Uses of food in the body

1- Food provides energy to the body
2- Food keeps the body healthy
3- Food builds the body
4- Food provides warmth to the body
5- Food repairs worn out body tissues or cells.

Why do we eat food?

Food is eaten because of the **5H**s

1- To satisfy hunger
2- To be healthy
3- Because it is a habit
4- Because of happiness
5- Because of hospitality

Sources of food

- Plants - Animals

Places where people get food

1. Gardens
2. Markets
3. Shops
4. Lakes, rivers, swamps, seas
5. Forests

Classes of food

a) Carbohydrates
b) Proteins
c) Vitamins
d) Mineral salts
e) Roughages
f) Fats and oils
g) Water

Classes of food and their values

Class (Value)	Function
Carbohydrates	Gives energy and heat to the body
Proteins	Builds and repair won out body cells
Vitamins	Makes the body healthy
Fats and oils	Gives energy and heat to the body
Mineral salts	Make the body healthy

Assignment 8

1. Why is breast milk good for babies

   _____

2. Give any one food value obtained from breast milk.

   _____

3. Identify two sources of food in the environment.

   i) _____ ii) _____

4. Give two classes of food with the same function.

   i) _____ ii) _____

Proteins

Proteins are body building foods.

Functions of Proteins in the body

1. They build the body
2. They repair worn out body tissues or cells.

Sources of proteins

Proteins are classified into two;

i) Plant proteins

ii) Animal proteins

Food stuffs that give us proteins

Animal Proteins	**Plant Proteins**
Fish	Beans
Meat e.g beef, pork	Soya beans
Eggs	Ground nuts
Chicken	Peas
Grasshoppers	Sim-sim
Cheese	Sunflower seeds
Yoghurt	Cashew nuts
Milk	
White ants	

Lack of proteins in the diet/body causes deficiency disease called kwashiorkor

Note: All legumes are rich in proteins.

Carbohydrates: These are energy giving foods.

Examples of foods that are rich in carbohydrates

cassava, maize, rice, wheat, millet, sorghum, honey, potatoes yams, sugarcane, bread, bananas.

Lack of carbohydrates in the diet/body causes a deficiency disease called marasmus or starvation.

Note: All starchy and sugary food stuffs are rich in carbohydrates.

Mineral salts: These are food stuffs which keep the body healthy.

Examples of mineral salts

a) Iron b) Iodine c) Calcium

Iron

Importance of iron in the body

1. Iron is necessary for form the red pigment or substance in the blood called haemoglobin.
2. Haemolobin transports oxygen from the lungs to the rest of the body.
3. Lack of iron in the body/diet causes anaemia
4. Anaemia is also caused by lack of red blood cells or haemoglobin.

Sources of iron

- Beans - meat - liver - peas - kidney
- Green vegetables - Ground nuts - Eggs

Mineral salts

Iodine: Lack of iodine in the diet causes goitre. Goitre is a swelling in the neck region.

Calcium

1. It is necessary for the formation of strong bones, teeth, and fingernails.
2. It regulates heart, nerve and muscle activities.
3. Lack of calcium causes weak bones and teeth, rickets.

Sources of Calcium

- Dry fish - pounded egg shells - milk - egg yolk
- beans - soft bones - grains - cheese - cauliflower

The food value gained from mineral salts is health (body protection)

Sodium Chloride

- It helps to maintain normal functioning of muscles
- Helps to transmit nerve signals in the body.
- Lack of sodium chloride causes swollen feet.

Sources of sodium chloride

- Smoked sea fish - meat
- Sea foods - common salt

Fluorine

It is used for formation of strong teeth.

It prevents tooth decay

Lack of fluorine in the diet causes weak teeth.

Sources of Fluorine

- Tooth paste with fluoride
- Mineral water

Phosphorus

It helps in strong bone formation
Lack of phosphorus in the diet causes weak bones.

Sources of Phosphorus

- Dairy foods - Cereals - cheese - fish
- milk - meat - eggs - green leafy vegetables

Potassium

Helps to maintain balance of fluids in the body

Sources of potassium
Meat, milk, grain cereals

Assignment 9

1. What is the importance of mineral salts in the body?

   _____

2. Name any one source of iron.

   _____

3. What is the cause of weak bones and teeth?

   _____

Classes of food

Vitamins

Vitamins are healthy giving foods. They keep the body healthy and protected from diseases.

Types of Vitamins

Vitamin A	Vitamin D
Vitamin B_1	Vitamin E
Vitamin B_2	Vitamin K
Vitamin C	

Vitamin A

It is good for eye sight

It increases resistance of the body to diseases

Sources of Vitamin A

- Carrots
- Egg yolk
- Margarine
- Spinach
- Cheese
- Liver
- Butter
- Mangoes
- Palm oil
- Milk

Signs and symptoms

- Poor night vision

Lack of Vitamin A in the diet causes night blindness

Vitamin B_1

For mental health

For proper growth

Sources of Vitamin B_1

- Cereals - Ground nuts - Meat - Yeast
- Beans - Green leafy vegetables

Signs and symptoms

- Paralysis
- Forgetfulness
- Loss of appetite
- Body weakness

Lack of Vitamin B_1 in the diet causes Beriberi.

Vitamin B_2

For mental growth

For proper growth

Sources of Vitamin B_2

- Beans - Lean meat - Liver - Yeast - Kidney - Ground nuts

Signs and symptoms

- Body weakness
- Poor growth

Lack of Vitamin B_2 in the diet causes pellagra

Vitamin C

For strong skin membrane

Fast healing of wounds

Sources of Vitamin C

Fresh fruits, Green vegetables, Red pepper, prepared concentrated drinks

Signs and symptoms

- Poor skin
- Poor healing of wounds
- Bleeding gums
- Easily falls sick

Lack of Vitamin C in the diet causes scurvy.

Vitamin D

- Absorption of calcium
- For strong bones and teeth

Sources of Vitamin D

- Eggs
- Liver
- Fish
- Milk
- Morning sunlight (it is formed in the skin by sun light)

Signs and symptoms

- Weak bones
- Bow legs
- Deformed skull
- Stunted growth

Lack of Vitamin D in the diet causes Rickets

Fats and Oils

Fats are also energy giving foods. They provide more energy and heat than carbohydrates

Fats are stored under the skin.

Sources of fats and oils

- Milk
- Butter
- Cheese
- Egg yolk
- Meat
- Margarine
- Ground nuts

Dangers of having little fats in the body

i) Lack of energy

ii) Thinness

iii) Rough and dry skin

iv) Feeling cold all the time

Too much fats in the body leads to obesity

Note: Fats are solid while oils are liquid at room temperature (25°C)

Roughages

Roughages are mainly indigested fibres from the cell walls of plants.

Sources of roughages

Fruits Green leafy vegetables Cassava Rice Bread

Sweet potatoes Peas Beans Root vegetables like onions

Functions of roughages

- They prevent constipation
- They reduce the risk of bowel cancer
- They allow easy digestion of food
- They add bulk to the diet
- They allow easy movement of food in the alimentary canal.

Water

Water makes up about ¾ of the body weight.

Sources of water in the body

- Tea - Soup - Porridge - Coffee - Fruit drinks
- Milk - Concentrated bottled drinks

Uses of water in the body

1) Water makes digestion and absorption of food easy
2) It forms the blood plasma (Liquid Part of blood)
3) It reduces body temperature through sweating
4) It helps to remove waste products from the body
5) Water is present in the synovial fluids so it reduces friction.

Assignment 10 (too shallow assessment compared to the area covered)

1. What are roughages

   _____

2. What is the importance of roughages in the body?

   _____

3. Match the following

List A	**List B**
Vitamin B	scurvy
Vitamin C	Goitre
Iodine	Beriberi
Calcium	Rickets

List A		**List B**
Vitamin B	-	_____
Vitamin C	-	_____
Iodine	-	_____
Calcium	-	_____

Deficiency diseases are caused by lack of certain food values in the body.

Deficiency means **lack of**.

Diseases

1) **Kwashiorkor**

It is caused by lack of enough proteins in the body.

Signs and symptoms

1. Swollen moon face (circular)
2. Little brown hair
3. Swollen hands, feet and stomach.
4. A child does not want to eat.
5. Stunted growth
6. Anaemia and diarrhea

Prevention and control of Kwashiorkor

Feed the child with food rich in proteins.

2) **Marasmus**

It is caused by lack of enough carbohydrates in the body.
It is also caused by starvation.

Signs and symptoms

1. The eyes are very bright.
2. The face looks like that of an old man.
3. Loss of body weight
4. The child is under weight
5. Always hungry
6. General body weakness
7. Pot belly
8. Diarrhea at times

Prevention of marasmus

It can be prevented by giving the child foods rich in carbohydrates.

3) **Anaemia**

It is caused by lack of enough iron in the diet.

Signs and symptoms of Anaemia

1. Fatigue
2. Rapid heart beat
3. Dizziness
4. Pale skin
5. Leg cramps

Prevention of Anaemia

It is prevented by eating foods rich in iron.

4) **Scurvy**

It is caused by lack of enough Vitamin C in the diet.

Signs and symptoms

1. Bleeding gums
2. Poor healing of wounds
3. Anaemia
4. Painful swelling of wounds
5. Body weakness

Prevention of scurvy

Feed the person on foods rich in Vitamin C.

Assignment 11

1. What are carbohydrates?

   _____

2. Name two sources of carbohydrates.

   _____

3. What causes

   i) Marasmus - _____

   ii) Kwashiorkor - _____

Vulnerable groups of people

Examples of vulnerable groups of people are the category of people who can easily be attacked by diseases due to poor feeding or not feeding on a balanced diet.

A balanced diet is a meal containing all food values.

Examples of vulnerable people

- Pregnant mothers
- Un-born babies
- Breast feeding mothers
- Weaning babies
- Elderly people
- Sick people

Breast feeding: This is the act of feeding a baby on breast milk.

Advantages of breast milk to a baby

1. Breast milk is easy to digest
2. It contains all food values needed by the baby
3. Breast milk contains antibodies from the mother, which protect the baby against diseases.
4. It is at the right body temperature.
5. It is clean and ready

Disadvantages of breast feeding to the mother

1- It is quick and saves time
2- It is cheap compared to buying baby milk.
3- It creates a love bond between the mother and the baby.
4- It delays the next pregnancy
5- It reduces chances of sickness in the baby
6- It improves the health of the mother as she has to eat a balanced diet.

Malnutrition

It is a condition when the body does not receive all the needed food nutrients in their right amounts. It is simply poor feeding.

Signs of malnutrition

1. Tiredness
2. Loss of body weight
3. Dullness

Symptoms of malnutrition in adults

- Low concentration in work
- Loss of interest in work
- Poor spirit in doing things

Note: Malnutrition in children usually occurs during weaning.

Weaning: Is the gradual introduction of semi-solid foods to a baby other than breast milk alone.

Assignment 12

1. Why is breast milk the best for young babies?

   _____

2. Which mineral salt is lacked in breast feeding to a baby?

   _____

3. State any two importance of breast feeding to a baby.
   i) _____
   ii) _____

4. Give another name for deficiency diseases.

   _____

Food Hygiene and Contamination

Food Hygiene

Food hygiene is the keeping of food free from germs.

There are different ways of proper handling of food.

1- Cooking food to kill germs
2- Washing fruits and vegetables helps to remove germs
3- Preparing food in a clean place
4- Serving food in clean containers
5- Washing hands before preparing and serving food.
6- Keeping cooked food covered, it keeps away disease vectors
7- Covering the mouth while coughing and sneezing. This prevents germs from getting to the food.

Importance of proper handling of food

It prevents food contamination

It preserves food for future use

It controls the spread of some diseases

It prevents food from vectors.

Ways by which food gets contaminated

- Serving food with dirty hands
- Serving food in dirty utensils
- Contact with organisms that carry germs
- Preparing food in dirty environment
- Leaving food uncovered

Dangers of poor handling of food

- It spreads germs
- It causes the food to get spoilt
- It may cause food poisoning

Good eating habits

1- Wash hands before eating food.

2- Sit upright when eating food.

3- Swallowing food after chewing it properly.

4- Chewing food when the mouth is closed.

5- Putting small lumps of food in the mouth at a time.

6- Avoid talking when eating.

7- Eating slowly.

Bad eating habits and their effects

Bad eating habits	**Effects**
Eating with un-washed hands	Spreads diseases
Talking with food in the mouth	Food can choke
Chewing food with an open mouth	Food particles can fly out to other people's food or clothes.
Improper sitting while eating	Indiscipline
Swallowing food which is not chewed properly	Indigestion of food in the stomach.

Assignment 12

1. Why is it important to cover cooked food?

   _____

2. Give two importance of proper handling of food
   i) _____
   ii) _____

3. What is food preservation?

   _____

4. How do farmers preserve their harvested seeds?

   _____

Food Security

Food security is when a family or community has enough food for eating throughout the year.

Food security can be achieved through the following ways;

1- Growing enough food crops

2- Proper food storage

3- Reducing on the amount food sold

4- Preservation of food

5- Practicing proper farming methods

6- Improving soil fertility

<u>Importance of food security</u>

1- The family has enough food to eat throughout the year.

2- It prevents deficiency diseases in the family.

3- It reduces the cost of living

4- It reduces theft of food in the community.

Method of preparing simple food dishes

Food	Method used
Matooke	- Boiling in water - Steaming in banana leaves - Roasting un-peeled matooke
Sweet potatoes	- Steaming in banana leaves - Roasting over fire/in ash - Boiling in water - Deep frying
Irish potatoes	- Boiling in water - Frying - Deep frying
Millet bread	- Mingling millet flour with little boiled water
Maize bread (posho)	- Mingling maize flour with boiled water
Rice	- Boiling in water - Frying - Steaming
Cassava	- Boiling in water - Roasting over fire - Deep frying - Mingling

Assignment 12

1. Give a reason why food should be preserved?

   _____

2. Why should a family or community need food security?

   _____

   _____

3. What are vulnerable people?

   _____

4. Why are we advised to eat a balanced diet?

   _____

E N D

ENGLISH HOLIDAY PACKAGE
PRIMARY FOUR

Name: …… **Stream** ……

The Present Simple Tense

The present simple tense involves actions done every day, every week, often, sometimes, etc

We use this tense by adding –**s**, –**es**, or –**ies** to the verbs with singular nouns and pronouns.

For plural nouns and pronouns, we do not add these letters. This also happens when we use pronoun I.

Examples of verbs that add letter **s** to form their Present Simple Tense.

Infinitive	**He, she, it, singular noun**	**They, we, I, you, plural noun**
forgive	forgives	forgive
lend	lends	lend
borrow	borrows	borrow
pay		
encourage		
dance	dances	dance
jump		
drive		
thank		
clap		
run	runs	Run
keep		
write		
cook		
play	plays	play
ride		
talk		
eat	eats	Eat
help		
take	takes	take

Examples of verbs that add **es** to form their Present Simple Tense

Infinitive	**He, she, it, singular noun**	**They, we, I, you, plural noun**
wash	washes	wash
match	matches	match
march		
touch		
pass		
catch		
fetch		
catch		
fetch		
preach		
teach		
watch		
go		
do		
punish	punishes	punish

Examples of verbs that add **ies** to form their Present Simple Tense. These verbs drop **y** and add **ies**.

Infinitive	**He, she, it, singular noun**	**They, we, I, you, plural noun**
cry	cries	Cry
dry	dries	Dry
carry		
hurry		
fly		
marry	marries	marry
worry	worries	worry
try		
fry		
spy		
study		
glorify		
simplify	simplifies	simplify

Infinitive	He, she, it, singular noun	They, we, I, you, plural noun
copy		
magnify		
empty		
identify		
horrify		
deny		
terrify	terrifies	terrify

Assignment 1

Fill in the gaps with the present simple tense.

1. Suzan _____ her money in the bank. (keep)
2. We _____ thank you letters to our parents every year. (write)
3. A good child _____ attention in class. (pay)
4. He _____ us to forgive others when they say sorry. (encourage)
5. She _____ water for her parents every day. (fetch)
6. I _____ polite language at school. (use)
7. Students _____ to their teachers when in class. (listen)
8. Amito _____ us each time we say sorry. (forgive)
9. Phillip _____ his face before going to school. (wash)
10. Our mother _____ the children when they do not do the work at home. (punish)
11. The teacher _____ us well everyday. (teach)
12. We _____ English every week. (study)
13. Kaddu _____ whenever he steals his mother's money. (denny)
14. Betty and Maria _____ out Mathematics numbers in their books every afternoon. (try)
15. Katungi _____ when he sees a dog. (terrify)

Good Behaviour

Using: May I …… please? Yes, you may ……/No I am ……

We use this structure to express politeness when requesting for something or some help.

Examples

1. May I use your pen, please?
   Yes, you may use my pen.
2. May I take this chair, please?
   No, I am sorry. I am going to use it.
3. May I borrow your duster, please?
   No, I am sorry. I am using it.
4. May I use you atlas, please?
   Yes, you may use my atlas.
5. May I use your book, please?
   No, I am sorry. I am reading it.

Assignment 2

1. May I take your geometry set, please? (Yes)
   _____
2. May I use your pencil, please? (No)
   _____
3. May I take my bag, please? (No)
   _____
4. May I use your ruler, please? (Yes)
   _____
5. May I take your juice, please? (Yes)
   _____
6. May I have my book, please? (Yes)

_____

7. May I use your desk, please? (No)

_____

8. May I borrow your story book, please? (Yes)

_____

9. May I take your milk, please? (No)

_____

10. May I have my shoes, please? (Yes)

_____

Using: Please, lend me/her/him/them/Peter ……

Please, lend me/her/him/them/Peter ……
Here it is/they are

Examples

1. Please, lend me your pen.
   Here it is.
2. Please lend her your glasses.
   Here they are.
3. Please, lend him your bicycle.
   Here it is.
4. Please, lend them your ball.
   Here it is.
5. Please, lend Sarah your colours.
   Here they are.

Assignment 3

Reply to the following requests using: Here it is / Here they are.

1. Please, lend Amos your story book.

_____

2. Please, lend him your ruler.

_____

3. Please, lend them your hoes.

_____

4. Please, lend me your counting sticks.

_____

5. Please, lend us your story slashers.

_____

6. Please, lend her your watch.

_____

7. Please, lend Akello your book.

_____

8. Please, lend Mary your doll.

_____

9. Please, lend the boys your ball.

_____

10. Please, lend me your phone.

_____

11. Please, lend her your textbook.

_____

Using: Will you please ……? Yes/No ……

Using: Will you please …… ?
Yes, I will/No, I am sorry, ……

We use this structure to express politeness when asking for something. A positive or negative response is expected.

Examples

1. Will you please go for lunch?
   Yes, I will.
2. Will you please lend me your pencil?
   No, I am sorry, I am using it.

3. Will you please give us your ball?
   No, I am sorry, I am using it.
4. Will you please lend Mary your phone?
   Yes, I will.

Assignment 4

Answer the questions below correctly.

1. Will you please give me your bag? (No)

   _____

2. Will you please go and play outside? (Yes)

   _____

3. Will you please lend us your rulers? (Yes)

   _____

4. Will you please play with us? (Yes)

   _____

5. Will you please help me to carry these boxes? (No)

   _____

6. Will you please go to the office? (Yes)

   _____

7. Will you please give us your canvas shoes? (No)

   _____

8. Will you please lend us your pencil? (Yes)

   _____

9. Will you please give Shanita her pen? (Yes)

   _____

10. Will you please ask him to do that work? (No)

    _____

Using: May I borrow ……, please?

Yes, you may/ No, I am sorry ……

We use this structure to express politeness when borrowing something.

Examples

1. May I borrow you dictionary, please?
   Yes, you may.
2. May I borrow your colours, please?
   No, I am sorry I am using them.
3. May I borrow your toothbrush, please?
   No, I am sorry, we can't share a toothbrush.
4. May I borrow your basket, please?
   Yes, you may.

Assignment 5

Answer the questions below using the words in the brackets correctly.

1. May I borrow your oxen, please? (No)
   _____
2. May I borrow your phone, please? (Yes)
   _____
3. May I borrow your car, please? (No)
   _____
4. May I borrow your rubber, please? (Yes)
   _____
5. May I borrow your doll, please? (Yes)
   _____
6. May I borrow your umbrella, please? (No)
   _____
7. May I borrow your shoes, please? (Yes)
   _____

8. May I borrow your ruler, please? (No)

_____

9. May I borrow your sweater, please? (No)

_____

10. May I borrow your hoe, please? (Yes)

_____

Using: Do you have any ……..?

Yes, I have some……/No, I don't have any ……

We use this structure to find out whether the item we need is available or not.

Examples

1. Do you have any tomatoes?
   Yes, I have some tomatoes.
2. Do you have any salt?
   No, I don't have any salt.
3. Do you have any cassava?
   No, I don't have any cassava.
4. Do you have any colours?
   Yes, I have some colours.

Assignment 6

Answer the questions using the words given in brackets

1. Do you have any pen? (No)

_____

2. Do you have any work? (Yes)

_____

3. Do you have any book? (No)

_____

4. Do you have any tea in the flask? (No)

_____

5. Do you have any rubber? (Yes)

_____

6. Do you have any pencil? (No)

_____

7. Do you have any text book? (Yes)

_____

8. Do you have any cups? (No)

_____

9. Do you have any sugarcane? (Yes)

_____

10. Do you have any money? (Yes)

_____

11. Do you have any sugar in the bowl? (Yes)

_____

12. Do you have any cakes for the guests? (No)

_____

Using: Can I /she/he/they/Kato……, please?

Yes, you can ……/No, I am sorry, …… can't.

We use this structure to find out whether what we want can be done or not.

Examples

1. Can I borrow you book, please?
   Yes, you can borrow my book.
2. Can she use your phone, please?
   No, I am sorry, the battery is low.
3. Can he help Mrs. Lubega, please?
   Yes, he can help Mrs. Lubega.
4. Can they slash the bush, please?
   No, I am sorry, they can't.

Assignment 7

Use **Yes** or **No** as given in the brackets to answer the questions

1. Can they talk to the teacher, please? (Yes)

   _____

2. Can she fry those eggs, please? (Yes)

   _____

3. Can Kato drive that lorry, please? (No)

   _____

4. Can he feed the cows, please? (No)

   _____

5. Can Namukose peel the potatoes, please? (Yes)

   _____

6. Can they do the exercise, please?

   _____

7. Can we play football this afternoon, please? (Yes)

   _____

8. Can we bring our work, please? (Yes)

   _____

9. Can the boys wear dresses, please? (No)

   _____

10. Can Faith make a doll out of the banana fibres, please? (Yes)

    _____

MATHEMATICS HOLIDAY PACKAGE
PRIMARY FOUR

Name: …… **Stream** ……

NUMERACY

FRACTIONS

Naming and describing fractions

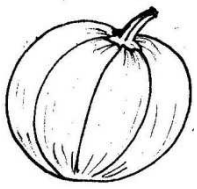
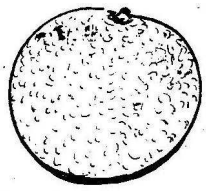
What is a fraction?

A fraction is a portion/part of a whole.

What is a whole?

A whole is complete thing (entire, full, uncut or un-abridged)

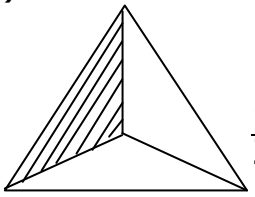
Illustration for wholes

		
A whole Pumpkin	A whole orange	A whole Onion

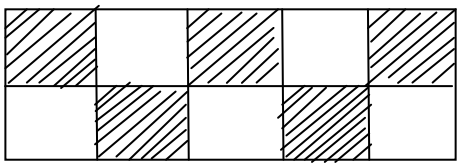
Naming/describing shaded and un-shaded regions

Examples

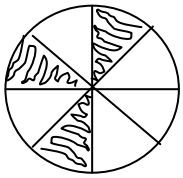
a) Name the shaded fractions



$\frac{1}{3}$

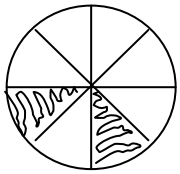
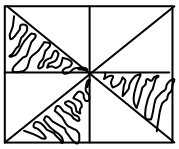
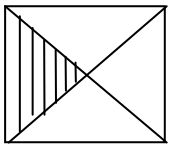


$\frac{5}{10}$



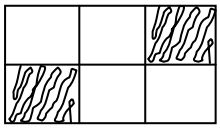
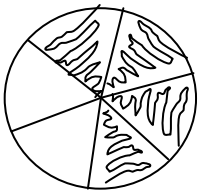
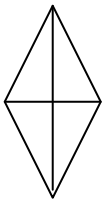
$\frac{3}{8}$

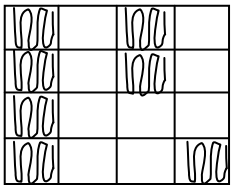
b) Name the un-shaded fraction below

 $\frac{6}{8}$  $\frac{5}{8}$  $\frac{3}{4}$

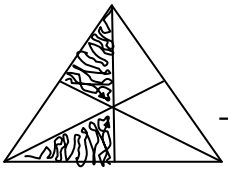
Exercise 1

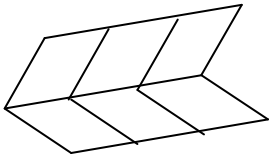
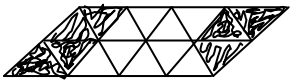
1. (a) Name the shaded fractions below.

 _____  _____  _____

 ____

(b) Name the un-shaded fraction below

_____  _____

 ____  _____

Writing Fractions in words

Example

Note: We always end with "S" at the word when numerator is greater than **1** to show plural due to many or more parts.

1. Write $\frac{3}{7}$ in words. $\frac{3}{7}$ ⇨ Three sevenths
2. Write $\frac{1}{11}$ in words. $\frac{1}{11}$ ⇨ One eleventh

3. Write $\frac{3}{4}$ in words. $\frac{3}{4}$ ⇨ Three quarters

Exercise 2

1) $\frac{6}{9}$ _____ 5) $\frac{19}{4}$ _____

2) $\frac{4}{7}$ _____ 6) $\frac{7}{100}$ _____

3) $\frac{13}{4}$ _____ 7) $\frac{100}{5}$ _____

4) $\frac{3}{13}$ _____ 8) $\frac{15}{23}$ _____

Writing Fraction numbers words in figures

Write "Four seventh" in figures

Four sevenths ⇨ $\frac{4}{7}$

Write "eight halves" in figures

Eight halves ⇨ $\frac{8}{2}$

Exercise 3

Write the following in figures

1. Three eighths
2. Ten fifteenths
3. Six sevenths
5. Twenty two thirds
6. Seven quarters
7. One hundred thirty seven forty sevenths.

EQUIVALENT FRACTIONS

Finding equivalent fractions

Examples

Find the equivalent fractions for the fractions below.

a) $\frac{1}{2} \Rightarrow$

$\frac{1}{2} \times \frac{2}{2} = \frac{2}{4}$

$\frac{1}{2} \times \frac{3}{3} = \frac{3}{6}$

$\frac{1}{2} \times \frac{4}{4} = \frac{4}{8}$

$\frac{1}{2} \times \frac{5}{5} = \frac{5}{10}$

Therefore, $\frac{\mathbf{1}}{\mathbf{2}} = \frac{2}{4}, \frac{3}{6}, \frac{4}{8}, \frac{5}{10}$

b) $\frac{2}{3} \Rightarrow$

$\frac{2}{3} \times \frac{2}{2} = \frac{4}{6}$

$\frac{2}{3} \times \frac{3}{3} = \frac{6}{9}$

$\frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$

$\frac{2}{3} \times \frac{5}{5} = \frac{10}{15}$

Therefore, $\frac{\mathbf{2}}{\mathbf{3}} = \frac{4}{6}, \frac{6}{9}, \frac{8}{12}, \frac{10}{15}$

Exercise 4

List down the first four equivalent fractions for

a) $\frac{1}{3}$

b) $\frac{2}{5}$

c) $\frac{3}{7}$

d) $\frac{1}{4}$

e) $\frac{3}{10}$

Finding the missing parts of equivalent fractions

Examples

Find the missing numbers below.

a) $\frac{1}{2} = \frac{\square}{6}$

$\frac{1}{2} \times \frac{2}{2} = \frac{2}{4}$

$\frac{1}{2} \times \frac{3}{3} = \boxed{\frac{3}{6}}$

Therefore, $\mathbf{\frac{1}{2}} = \frac{\boxed{3}}{6}$

NB: Used when the smaller fraction is fully given and partially the bigger.

b) $\frac{3}{5} = \frac{\square}{20}$

$\frac{3}{5} \times \frac{2}{2} = \frac{6}{10}$

$\frac{3}{5} \times \frac{3}{3} = \frac{9}{15}$

$\frac{3}{5} \times \frac{4}{4} = \frac{12}{20}$

Therefore, $\mathbf{\frac{3}{5}} = \frac{\boxed{12}}{20}$

Exercise 5

Find the missing numbers in the boxes.

1. $\frac{1}{5} = \frac{\square}{10}$

2. $\frac{1}{4} = \frac{\square}{12}$

3. $\frac{1}{2} = \frac{5}{\square}$

4. $\frac{5}{9} = \frac{15}{\square}$

5. $\frac{5}{8} = \frac{20}{\square}$

7. $\frac{3}{8} = \frac{15}{\square}$

6. $\frac{2}{10} = \frac{12}{\square}$

8. $\frac{1}{8} = \frac{\square}{24}$

More about finding numbers in equivalent fractions

Examples

Fill in the missing number

a) $\frac{2}{5} = \frac{\square}{15}$

$15 \times \frac{2}{5} = \frac{\square}{15} \times 15$ $\square$

$\overset{3}{\cancel{15}} \times \frac{2}{\cancel{5}_{1}} = \frac{\square}{\cancel{15}_{1}} \times \overset{1}{\cancel{15}}$

$2 \times 3 = \square$

$6 = \square$

Therefore, $\square = 6$

LCM of **5** and **15**.

$M_5 = \{5, 10, \underline{15}, 20, 25 \text{ ---}\}$

$M_{15} = \{\underline{15}, 30, 45, 60 \text{ ------}\}$

LCM = 15

b) $\frac{\square}{7} = \frac{3}{21}$

LCM of **7** and **21**.

$M_7 = \{7, 14, \underline{21}, 28 \text{ ----}\}$

$M_{21} = \{\underline{21}, 42, 63, \text{------}\}$

LCM = 21

$21 \times \frac{\square}{7} = \frac{3}{21} \times \frac{21}{\square}$

$\frac{\cancel{21}^{3} \times \square}{\cancel{7}_{1}} = \frac{3}{\cancel{21}_{1}} \times \frac{\cancel{21}^{1}}{1}$

$\frac{\cancel{3}^{1} \times \square}{\cancel{3}_{1}} = \frac{\cancel{3}^{1}}{\cancel{3}_{1}}$

Therefore, $\square = 1$ and $\frac{\square 1}{7} = \frac{3}{21}$

Exercise 6

List down the first four equivalent fractions for

1. $\frac{3}{15} = \frac{\square}{10}$

2. $\frac{9}{4} = \frac{\square}{14}$

3. $\frac{3}{6} = \frac{1}{\square}$

4. $\frac{\square}{24} = \frac{4}{12}$

5. $\frac{3}{\square} = \frac{12}{40} =$

6. $\frac{4}{8} = \frac{\square}{4}$

Reducing Fractions

Simplifying fractions to the lowest terms

Note: We commonly use two methods here namely;

(i) Using GCF/HCF

(ii) Using prime factors of numbers

Examples

1. Write $\frac{6}{12}$ to its lowest term.

Method 1

$\frac{6}{12}$ $\quad F_6 = \{1, 2, 3, \mathbf{6}\}$

$F_{12} = \{1, 2, 3, 4, \mathbf{6}, 12\}$

GCF = 6

Therefore, $\frac{6 \div 6}{12 \div 6} = \frac{1}{2}$

Method 2

$\frac{6}{12} \Rightarrow$

Factor tree of 6: 6 → 2, 3; 3 → 3, 1

Factor tree of 12: 12 → 2, 6; 6 → 2, 3; 3 → 3, 1

$\frac{6}{12} = \frac{2 \times 3}{2 \times 2 \times 3}$

$= \frac{\cancel{2}^{1} \times \cancel{3}^{1}}{\cancel{2}_{1} \times 2 \times \cancel{3}_{1}}$

Therefore, $\frac{6}{12} = \frac{1}{2}$

2. Write $\frac{20}{40}$ to the lowest term.

$\frac{20}{40} \Rightarrow$

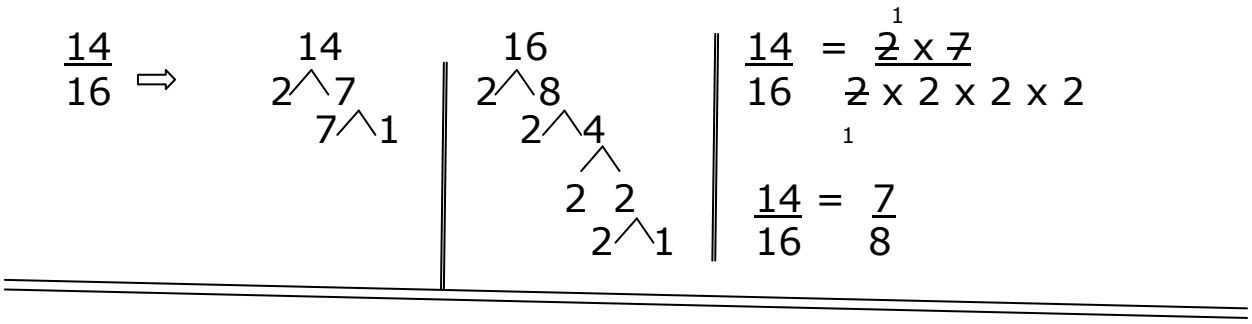
Factor tree of 20: 20 → 2, 10; 10 → 2, 5; 5 → 5, 1

Factor tree of 40: 40 → 2, 20; 20 → 2, 10; 10 → 2, 5; 5 → 5, 1

$\frac{20}{40} = \frac{\cancel{2}^{1} \times \cancel{2}^{1} \times \cancel{5}^{1}}{2 \times \cancel{2}_{1} \times \cancel{2}_{1} \times \cancel{5}_{1}}$

$\frac{20}{40} = \frac{1}{2}$

3. Write $\frac{14}{16}$ in its lowest term.



Exercise 7

Reduce the following fractions below to their lowest terms using the G.C.F/HCF

1. $\frac{2}{6}$

2. $\frac{8}{10}$

3. $\frac{12}{18}$

4. $\frac{18}{24}$

5. $\frac{5}{10}$

6. $\frac{6}{15}$

a) $\frac{12}{18}$ c) $\frac{3}{12}$ e) $\frac{12}{15}$

b) $\frac{4}{16}$ d) $\frac{6}{10}$ $\frac{8}{20}$

Types of Fractions

Majorly, we have got three types of fractions namely;

1- Proper fractions

2- Improper fractions

3- Mixed fractions

Parts of fractions

$5\frac{3}{7}$ 5 → Whole number
3 → Numerator
7 → Denominator

(a) <u>Proper Fractions</u>

Proper fractions are types of fractions having numerator equal or smaller than their denominator.

Examples of proper fractions

Proper fractions = $\left\{\frac{5}{15} \quad \frac{6}{10} \quad \frac{7}{11} \quad \frac{2}{7} \quad \frac{2}{2} \quad \frac{2}{4} \quad \frac{3}{7} \quad \frac{5}{9} \quad \frac{9}{10} \quad \frac{100}{250} \ldots\ldots\right\}$

(b) Improper Fractions

Improper fractions are the fractions with their numerator greater than or equal to their denominators

The value of an improper fraction is equal to or greater than 1

Examples of improper fractions

Improper fractions $= \left\{ \frac{3}{1} \quad \frac{9}{2} \quad \frac{10}{3} \quad \frac{100}{5} \quad \frac{19}{2} \quad \frac{15}{6} \quad \frac{19}{2} \quad \frac{15}{6} \quad \frac{9}{4} \quad \frac{100}{14} \ldots\ldots \right\}$

(c) Mixed Fractions

Mixed fractions are fractions composed of wholes and proper fractions. They are formed from only improper fractions.

Examples of Mixed fractions

Mixed fractions $= \left\{ 5\frac{1}{3} \quad 7\frac{3}{4} \quad 15\frac{7}{11} \quad 9\frac{2}{7} \quad 101\frac{3}{7} \ldots\ldots\ldots \right\}$

Improper fractions and mixed fractions

Changing Improper fractions to mixed fractions

Examples

Write $\frac{7}{4}$ as a mixed fraction.

$\frac{7}{4}$ Read as seven quarters

Represented as $\frac{7}{4}$ = ¼+¼+¼+¼+¼+¼+¼ (4 quarters make a whole)

$\frac{7}{4} = (¼+¼+¼+¼)+¼+¼+¼$

$\frac{7}{4} = 1+ ¾$

$\frac{7}{4} = 1¾$

Change $\frac{8}{3}$ into a mixed fraction.

Represented as $\frac{8}{3}$ = ⅓ +⅓ +⅓ +⅓ +⅓ +⅓ +⅓ +⅓

Represented as $\frac{8}{3}$ = (⅓ +⅓ +⅓) +(⅓ +⅓ +⅓) +⅓ +⅓

$\frac{8}{3}$ = 1 + 1 + $\frac{2}{3}$

$\frac{8}{3}$ = $2\frac{2}{3}$

NB: They can also be represented in diagrams.

Exercise 8

Express the fractions below as mixed fractions

1. $\frac{9}{2}$
2. $\frac{3}{2}$
3. $\frac{10}{3}$
4. $\frac{25}{4}$
5. $\frac{13}{7}$
6. $\frac{9}{5}$

7. $\frac{20}{9}$

8. $\frac{19}{3}$

Changing Improper to mixed fractions (using long division)

Examples

1. Change $\frac{24}{7}$ to a mixed fraction.

$\frac{24}{7} \Longrightarrow$

$$\begin{array}{r} 03 \\ 7\overline{)24} \\ 0 \times 7 = \underline{0}\downarrow \\ 24 \\ 3 \times 7 = \underline{21} \\ 03 \end{array}$$

$M_7 = \{\overset{1}{7}, \overset{2}{14}, \overset{3}{21}, \overset{4}{28}, \overset{5}{35} \ldots\ldots\}$

24

Therefore, $\frac{24}{7} = 3\frac{3}{7}$

2. Express $\frac{41}{3}$ as a mixed fraction.

$\frac{41}{3} \Longrightarrow$

$$\begin{array}{r} 13 \\ 3\overline{)41} \\ 1 \times 3 = \underline{3}\downarrow \\ 11 \\ 3 \times 3 = \underline{\ 9} \\ 2 \end{array}$$

$M_3 = \{3, 6, 9, 12, 15, 18, 21, 24, 27, \ldots\ldots\}$

$4 \quad 11$

Therefore, $\frac{41}{3} = 13\frac{2}{3}$

Exercise 9

Change the following to mixed fractions

1. $\frac{23}{2}$

2. $\frac{45}{4}$

3. $\frac{19}{3}$

4. $\frac{32}{3}$

5. $\frac{16}{9}$

Changing mixed fractions back to improper fractions

Examples

1. Convert $3\frac{1}{5}$ to an improper fraction.

$$3\frac{1}{5} = \frac{W \times D + N}{D} \quad \textbf{or} \quad \frac{D \times W + N}{D}$$

$$= \frac{3 \times 5 + 1}{5} \qquad \frac{5 \times 3 + 1}{}$$

$$= \frac{15 + 1}{5} \qquad = \frac{16}{5}$$

Therefore, $3\frac{1}{5} = \frac{16}{5}$

2. Convert $9\frac{1}{2}$ to an improper fraction.

$$9\frac{1}{2} = \frac{W \times D + N}{D} \quad \textbf{or} \quad \frac{D \times W + N}{D}$$

$$= \frac{9 \times 2 + 1}{2} \qquad \frac{9 \times 2 + 1}{}$$

$$= \frac{18 + 1}{2} \qquad = \frac{19}{2}$$

Therefore, $9\frac{1}{2} = \frac{19}{2}$

Exercise 10

Change the following to improper fractions

1. $6\frac{3}{5}$

2. $5\frac{1}{3}$

3. $13\frac{2}{7}$

4. $6\frac{4}{7}$

5. $7\frac{2}{7}$

6. $20\frac{3}{5}$

7. $12\frac{7}{9}$

8. $1\frac{9}{11}$

SOCIAL STUDIES HOLIDAY PACKAGE
PRIMARY FOUR

Name: …… **Stream** ……

VEGETATION IN OUR DISTRICT

Vegetation is the plant cover of an area

Examples of vegetation

Forests, Swamps, Shrubs, Grass, Flowers

Types of vegetation

(a) Natural Vegetation
(b) Planted Vegetation

Natural Vegetation

Natural vegetation is the plant cover that grows on its own.

Examples of natural vegetation

- Natural forests
- Swamp vegetation
- Grass
- Shrubs

Characteristics of natural vegetation

a) Plants have different species
b) Plants mature at different times
c) Plants grow on their own
d) Plants have low maturing rate

Note: Natural vegetation covers the largest part of Uganda.

Planted Vegetation

This is the plant cover of an area planted by people.

Examples of planted vegetation

a) Planted forests
b) Planted grass
c) Crops
d) Planted flowers

Characteristics of planted vegetation

a) Planted vegetation have same species
b) Planted vegetation is planted by people
c) Plants mature at the same time
d) They mature very fast

Activity 1

1. Define vegetation.

   _____

2. Mention any two examples of vegetation.

   _____

3. Write down the two types of vegetation.

   _____

4. Which type of vegetation covers most parts of our district?

   _____

Differences between natural vegetation and planted vegetation

1) Natural vegetation grows on its own while planted vegetation is grown by people.

2) Natural vegetation have different species while planted vegetation same species

3) Natural vegetation have low maturity rate than planted vegetation

4) Natural vegetation mature at different time while planted vegetation mature at the same time.

FORESTS

A forest is a group of trees growing together in an area.

Or: A forest is a large area of land that is covered by trees.

Types of forests

(a) Natural forests

(b) Planted forests

A Natural forest is a group of trees that grow on their own.

Examples of natural forests in Uganda

	Forest		**District**
1.	Ssese Island	-	Kalangala
2.	Mabira	-	Buikwe
3.	Budongo	-	Masindi
4.	Bugoma	-	Hoima
5.	Kibale forest	-	Kabarole and Kamwenge
6.	Maramagambo	-	Mitooma and Bushenyi
7.	Karinzu	-	Bushenyi
8.	Wiceri	-	Gulu
9.	Malabigambo	-	Rakai
10.	Zoka	-	Adjumani
11.	Bwindi Impenetrable	-	Kanungu and Kabale
12.	Kasyoha Kitomi	-	Buhweju
13.	Mpanga	-	Mpigi

N.B: Budongo is the largest natural forest in Uganda.

Ref: A sketch map of Uganda showing natural forests (*Check the Atlas*)

Activity 2

1. Define a forest.

_____

2. Mention any two examples of natural forests.

_____

3. Name the biggest natural forest in Uganda.

_____

4. Identify the two types of forests;

_____

5. Why are natural forests called so?

_____

_____

6. Identify any one tree species you know.

_____

Types of trees (tree species) commonly found in natural forests

- Mahogany
- Mvule
- African walnut
- Rose wood
- Green heart
- Teak
- E bony
- Musizi

Characteristics of natural forests

a) Trees are of different species
b) Trees mature at different time.
c) Trees grow on their own
d) Trees take long to mature
e) Trees mainly have hardwood.

Products from hard wood

- Furniture
- Tables
- Beds
- Boats
- Doors

Planted forests

Planted forests are trees that are grown by people.

Examples of planted forests

a) Lendu forest - Nebbi district
b) Katuugo forest - Nakasongola
c) Mafuga forest - Rukungiri
d) Bugamba forest - Mbarara
e) Itwara forest - Masindi
f) Nyabyeya forest - Masindi
g) Rwoho forest - Ntungamo
h) Magamaga forest - Mayuge

Ref: A sketch map of Uganda showing planted forests (*check the Atlas*)

Characteristics of planted forests

a) Trees have same species
b) Trees mainly have soft wood or soft timber
c) Trees mature at the same time
d) Trees are mainly planted in rows and columns

Types of trees that are commonly planted

(a) Eucalyptus trees
(b) Cypress trees
(c) Spruce
(d) Pine
(e) Cedar
(f) Fir
(g) Podo

Products from soft wood

a) Match sticks
b) Paper
c) Soft boards

d) Ply wood
e) Pencils
f) Tooth picks
g) Wooden rulers

Activity 3

1. What are planted forests

_____

2. Identify any three examples of planted forests.

_____

3. Mention any two products got from soft wood.

_____

4. State any one importance of wood.

_____

5. Name the type of fuel got from plants.

_____

Importance of Forests

<u>Uses of timber (soft and hard wood)</u>

1- For roofing houses
2- For making doors
3- For making wooden windows
4- For making wooden beds
5- For making match sties
6- For making pencil frames
7- For making wooden benches etc

Importance of forests to people

1) Trees are sources of wood fuel e.g firewood and charcoal.
2) Some trees are sources of herbal medicines.

3) Trees help to purify air by absorbing carbondioxide and releasing oxygen.
4) Trees are sources of fruits
5) Trees are sources of timber.
6) Trees are used for scientific research or study.
7) Forests attract tourists who bring income.
8) Trees are sources of raw materials for pulp or paper industry.
9) Forests help in the formation of rainfall that supports crop growing.

Importance of forests to animals

1- They are homes of wild animals
2- Trees provide food for animals
3- Trees produce oxygen for animals
4- Trees provide shade for animals

Importance of trees to our environment

1- Trees help in the formation of rainfall
2- Trees help to maintain the natural beauty of the environment
3- They help to control soil erosion
4- Trees act as homes for animals

Products from trees

- Timber
- Fruit
- Medicine
- Wood fuel (charcoal and firewood)
- Bark cloth
- Laatex
- Tannin

People who benefit from trees

- Carpenters
- Builders
- Electricians
- cooks
- Herbalists
- Ship and boat builders

Activity 4

1. How are forests important to people?

   _____

2. Identify any three animals which live in forests

   _____

3. Name the type of wood got from planted forests.

   _____

4. Write DFO in full.

   _____

5. State any one role of NFA in Uganda.

   _____

6. Name the type of gas absorbed by plants during day time.

   _____

Dangers of forests to people and animals

<u>Problems faced by people in forested areas</u>.

1- Forests keep dangerous wild animals that attack people.

2- Wild animals from forests may escape and destroy people's crops

3- Forests are breeding places for pests and vectors

4- Dangerous wild animals from forests may escape and attack domestic animals

5- Forests make the construction of roads through them difficult.

6- Forests reduce land for settlement

7- Forests reduce land for farming

8- Forests harbor bad people or criminals like thugs, rebels, rapists etc.

<u>Dangers of trees around our homes</u>

1) Wind can break trees and destroy our homes
2) They are home of birds of prey which attack domestic birds
3) Big trees attract lightening
4) Trees attract animals like monkeys that destroy crops.

Problems facing forests in our areas

a) Deforestation
b) Drought
c) Bush burning or wild bush fires
d) Pests and diseases
e) Human encroachment

Solutions to the problems

a) By enforcing strict laws against deforestation and wild bush fires.
b) By teaching people the dangers of deforestation and wild bush fires.
c) By creating forest reserves
d) By encouraging afforestation
e) By practicing agro-forestry.

Activity 5

1. Write down any four examples of animals which live in forests.

   _____

2. Mention two bad people who hide in forests

   _____

3. Write down any two activities done in forested areas.

   (i) _____ (ii) _____

4. How are forests dangerous to road constructors?

   _____

5. What is deforestation?

   _____

GRASS

This is a plant with green leaves and stems.

Examples of grass

- Elephant grass
- Spear grass
- Guinea grass
- Star grass
- Napier grass
- Couch grass
- Rat grass
- Wild finger millet grass

Importance of grass

a) Grass is used for craft work e.g basket
b) Grass is used as animal feeds.
c) Grass is used for thatching
d) Grass acts as habitats to wild animals
e) Grass is used to mulch gardens
f) Grass is used for lighting fire.

Products made using grass

- Brooms - dolls - ropes
- Carpets - baskets

Problems facing grass

1- Over cultivation
2- Spraying using dangerous chemicals
3- Road construction
4- Bush burning
5- Pests
6- Drought
7- Over grazing
8- Mining

Solutions to the problems

a) By practicing rotational grazing
b) By practicing bush fallowing
c) By teaching people the dangers of bush burning
d) By discouraging the use of chemicals to kill grass species.

Caring for grass

Watering grass
Trimming grass
Spraying grass
Creating walk paths in compounds

Dangers of grass to people

a) Some grass are poisonous to people.
b) Some grass spoil farmer's crops
c) Grass attract dangerous animals which attack people.
d) Grass are breeding places for vectors.

Activity 6

1. Write down five examples to grass.

_____

2. Write down any two uses of grass.
   1) _____
   2) _____

_____

3. Identify any two products made from grass.
   (i) _____ (ii) _____

4. How can grass be protected?

_____

5. State any one danger of grass to people.

_____

SWAMPS

A swamp is a water logged area with some vegetation.

Or: A swamp is an area covered with water where plants grow.

Uses of swamps

1- Swamps help in rain formation.
2- Swamps are habitats for wild animals and birds.
3- Swamps act as fishing grounds.
4- Swamps are sources of raw materials for craft industry like papyrus, clay etc
6. They are sources of pasture for grazing animals.
7. Swamps help to filter water going to lakes
8. Swamps are sources of water for domestic use.

Some animals which live in swamps

- Crocodiles
- Snakes
- Hippopotamuses
- Tortoises
- Fish
- Frogs

Crops that grow well in swamps

- Rice
- Coco yams
- Sugarcane
- Tomatoes

Raw materials got from swamps and their products

Fish	-	for cod liver drugs, fertilizers, animal feed
Clay	-	for making ceramics
Papyrus	-	for making mats, baskets, carpets etc
Palm leaves		for mats, baskets etc
Reeds	-	for building houses

Problems facing people around swamps

a) Swamps are homes for dangerous wild animals which attack people.
b) Swamps are breeding places for disease vectors.
c) They are easily affected by floods

Problems facing swamps

a) Swamps drainage
b) Drought
c) Industrialization
d) Road construction
e) Waste disposal
f) Burning swamps
g) Human encroachment

Solutions to the problems facing swamps

1- Enforcing strict laws against swamp drainage
2- Teaching people about the impotence of swamps
3- Teaching people the dangers of draining swamps
4- By not dumping wastes in swamps.

Activity 7

1. Define a wetland.

_____

2. State any two importances of swamps.
   (i) _____
   (ii) _____

3. Identify the most common type of fish caught in swamps.

_____

4. What is the raw material for making ceramics?

_____

5. What are ceramics?

_____

CROPS

Crops are plants grown by people to get food or money.

Types of crops

(a) Food crops (Non-traditional cash crops)

(b) Cash crops (Traditional cash crops)

Food crops

Food crops are crops grown for food.

Examples of food crops

- Bananas
- Maize
- Beans
- Cassava
- Millet
- Sorghum
- Rice
- Yams
- Sweet potatoes
- Groundnuts

Importance of growing food crops

a) They provide food for home use
b) They are sold for money
c) They provide raw materials for industries

Cash crops

Cash crops are crops grown for sale.

Examples of cash crops

- Cotton
- Coffee
- Tea
- Cocoa
- Sunflower
- Tobacco
- Cloves
- Wattle
- Sugarcane
- Wheat
- Vanilla
- Pyrethrum
- Oil palm
- Coconuts
- Rubber

Importance of growing cash crops

a) Cash crops are sources of income
b) Cash crops act as raw materials for some industries
c) They provide jobs for people
d) Cash crops promote trade

Activity 8

1. What are food crops?

_____

2. Identify three examples of food crops.

_____ _____ _____

3. Why do people grow food crops?

_____

4. What are cash crops?

_____

5. State any two reasons why people grow cash crops.

i) _____

ii) _____

Products got from the different crops

Cash crop	Products
Bananas	- Juice - Food - Wine
Cotton	- Clothes - Cotton wool - threads - cooking oil - soap
Coffee	- Beverages/drinks - Coffee powder - Gun powder
Tea	- Tealeaves
Tobacco	- Cigarettes
Sugarcane	- Sugar - Waragi
Wheat	- Wheat flour
Vanilla	- Flavours
Sun flower	- Cooking oil - Soap
Cloves	- Flavours (spices)
Pyrethrum	- Insecticides
Wattle	- Tannin
Rubber	- Latex

Problems facing the growing of crops

a) Poor farming methods
b) Soil erosion
c) Pests
d) Diseases
e) Drought

Solutions to the problems

Practicing better farming methods
Carrying out irrigation during the dry season
Growing disease and pest resistant crops
Spray using herbicides and insecticides
Planting trees to control soil erosion

Examples of good methods of farming

a) Contour ploughing
b) Strip cropping
c) Mulching

Activity 9

1. Which other name is given to cash crops?

   _____

2. From which crop do we get
   a) insecticides - _____
   b) gun powder - _____
   c) cotton wool - _____

FLOWERS

Flowers are plants grown for their beauty.

Examples of flower estates

- Kajjansi Roses
- Rose Bud
- Mairye estate
- Victoria flowers
- Oasis nurseries
- Pearl flowers
- Nsimbe flower estate

Uses of flowers

a) Flowers are used for making perfumes
b) Flowers are used for decoration
c) Flowers are used for making disinfectants
d) They are sources of income when sold
e) Some flowers are eaten as food
f) Some are used as medicine

Problems facing flowers

- Drought - Bush fires
- Pests - Diseases

Ways of caring for flowers

a) Watering them
b) Weeding
c) Spraying
d) Mulching them
e) By providing shelter for them
f) By adding manure
g) By pruning
h) By thinning

Activity 9

1. What are flowers?

_____

2. Identify any two examples of flower estates.

_____ _____

3. State any two importance of flower estates.

i) _____

ii) _____

4. Write any two problems flower estates face.

i) _____

ii) _____

5. How can flowers be cared for?

_____

Plants

Medicinal plants, fruit trees and general importance of vegetation

Medicinal plants are plants people use to treat illnesses.

Examples of medicinal plants

a) Lemon grass
b) Black jack
c) Banana
d) Guava
e) Mango
f) Orange
g) Avocado
h) Eucalyptus
i) Neem
j) Garlic

Examples of fruit trees

a) Mango
b) Orange
c) Lemon
d) Jackfruit
e) Guava
f) Pawpaw

Uses of vegetation to people

(a) It is a source of herbal medicine
(b) It is a source of food
(c) It is a source of raw materials for crafts
(d) It is a source of timber
(e) Vegetation provides shade to people.
(f) It is a source of wood fuel e.g firewood
(g) Vegetation helps to control soil erosion
(h) Vegetation provides fresh air to people

Uses of vegetation to animals and birds

(a) Vegetation provides habitats to wild animals and birds.
(b) Vegetation provides food to animals and birds.
(c) Vegetation provides shade to animals.

Uses of vegetation to the environment

a) Vegetation helps in the formation of convectional rainfall.
b) Vegetation helps to beautify the environment
c) Vegetation helps to keep moisture in the soil
d) Trees produce shade for crops
e) Vegetation helps to control soil erosion
f) Vegetation provides natural habitats for wildlife.

Activity 10

1. Define medicinal plants.

_____

2. Identify any two fruit trees.

i) _____

ii) _____

3. State any three uses of vegetation

i) _____

ii) _____

iii) _____