MINISTRY OF EDUCATION

Secondary Engagement Programme

Transition Class

Activity Sheets

Term 3



MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 1 **Lesson**: 1

Topic: Things in the Science Laboratory

Sub- Topics: Equipment found in the Science laboratory

Name of Student ……..
Date……

Here are some of the things found in the Science laboratory.



Balance



spatula



thermometer



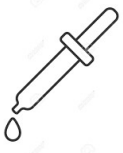
tongs



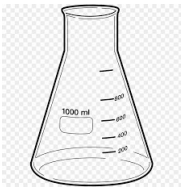
beaker



Bunsen burner



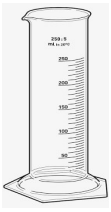
dropper



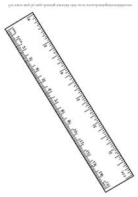
flask



funnel



measuring cylinder



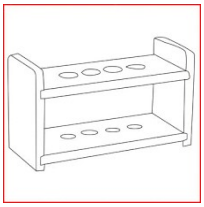
ruler



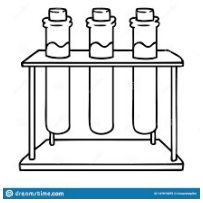
Stool



stop clock



test tube holder



test tubes



ring stand

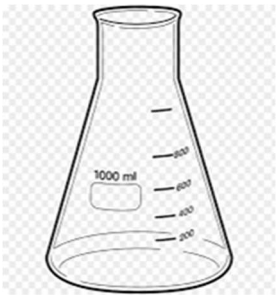


table

Activity: 1. Place the correct name at the bottom of each of the equipment.



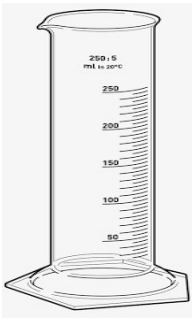
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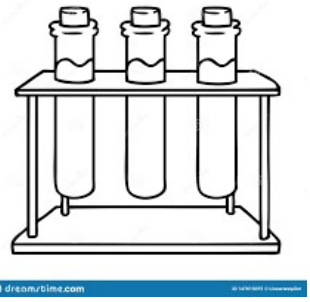
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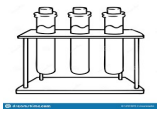
SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 1 **Lesson**: 2

Topic: Things in the Science Laboratory

Sub-Topic: The functions of some of the things in the Science Laboratory

Name……
Date……..

Picture of Equipment	Name of Equipment	Function of Equipment
	Ruler	Used to measure lengths
	Table	Used to write on and to do demonstrations and experiments in the laboratory
	Stool	Used to sit on
	Thermometer	Used to check boiling point, freezing point or temperature of other substances
	Bunsen Burner	Used to provide single, continuous flame by mixing gas with air in a controlled fashion
	Beaker	A cylindrical container used to store, mix and heat liquid in the laboratory
	Test Tubes	Used to handle chemicals during experiments
	Measuring Cylinder	Used to measure the volume of a liquid
	Flask	Used for making solutions or for holding, containing, collecting or measuring chemical, solutions etc.
	Balance	An instrument used for measuring an object's mass
	Stop clock	It is a handheld timepiece used to measure the amount of time elapse for an activity from beginning to end

Activity:

Fill in the blanks

1. Ruler is used to measure _____.

2. _____ is used to handle chemicals.

3. Test tube is used to handle chemicals during _____.

4. _____ is used to measure an object's mass.

5. Stop clock is used to measure the amount of _____ elapse for an activity from beginning to end.

6. _____ is used to sit on in the laboratory.

7. The table is used to _____.

8. _____ is used to provide single continuous flame.

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 1 **Lesson**: 3

Topic: Things in the Science Laboratory

Sub-Topic: Equipment in the Science Laboratory

Name of Student ……..
Date……

THE MATERIALS

Some non-metals are made of the following materials. These are glass, wood, and plastic.

Write the names of at least four materials for the respective headings below.

GLASS	WOOD	PLASTIC

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 2 **Lesson**: 1

Topic: Things found in the Laboratory

Sub-Topic: Safety Equipment used in the Science Laboratory

Name of Student ……..
Date……

Picture of Safety Equipment	Name of Safety Equipment	The function of Safety Equipment
	**Fire Bucket**	**The Fire Bucket is painted in red and labelled FIRE. It contains sand. When thrown on fire sand prevents air from reaching the flame and the flame goes out.**
	**Fire Blanket**	**The Fire Blanket is used to put out a fire. It is made of a material that does not burn. It stops air from getting to the fire.**
	**Fire Extinguisher**	**Some Fire Extinguishers help to smother flames by preventing air from getting to the fire. Others cool the burning area below ignition temperature causing the flame to go out.**
	**Water**	**Clean pure water is used to flush out harmful chemicals from the eyes.**
	**First Aid Kit**	**The First Aid Kit is a little cupboard marked with a cross as an identity symbol containing items that can be used as immediate aid in case of accidents.** **Examples of items in a First Aid Kit are cotton wool, swab, cleaning lotion, gauge, bandages, adhesive dressing, antiseptics, soap.**

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 2 **Lesson**: 2

Topic: Things found in the Science Laboratory

Sub-Topic: Safety Symbols/Warning Symbols

Name of Student ……..
Date……

Safety in the Science Laboratory

Safety is necessary when using flames, handling glassware, chemicals and electricity in the Laboratory.

SAFETY SYMBOLS	NAMES	FUNCTIONS
	**Harmful**	**This signifies chemicals that may cause damage to health- a substance that may cause irritations to the skin, eyes or inside your body.**
	**Flammable**	**This signifies substances that may ignite and continue to burn in the air. Examples: gases, liquids, solids, cleaning materials commonly used in the lab.**
	**Toxic**	**The skull and crossbones symbol is used as a warning of the danger of death, particularly in regards to poisonous substances.**

	**Radioactive**	**It denotes the need for caution to avoid contamination with or undue exposure to atomic radiation.**
	**Explosive**	**Serves as a constant warning to workers entering the area that serious hazards exist and that safety is essential.**
	**Corrosive**	**The corrosive material hazard lab sign indicates corrosive substances in the lab that can eat away the skin if you come into direct contact with them.**

Activity

Match pictures with names



Corrosive



Explosive



Harmful



Toxic



Highly Inflammable



Radioactive

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 2 **Lesson**: 3

Topic: Things found in the Science Laboratory

Sub-Topic: Safety Symbols/Warning Symbols

Name of Student ……..
Date……

Physical Safety Symbols

Gloves

This is used to protect the hand when handling hazardous or harmful materials even in small quantities. Gloves like chemical resistant gloves or heat resistant gloves are 2 types that should be used.



Boots

Chemical resistant overshoes or boots should be used to avoid possible exposure to corrosive chemicals or large quantities of solvents or water that might penetrate normal foot-wear.



Safety glasses

Eyeshields, also called safety glasses, goggles, or spectacles, protect against flying debris and chemical splashes in the lab.



Breathing Masks

Respirators are designed to prevent contaminated air from entering the body. “Full face” respirator that covers the entire face and “hood” or “helmet” style respirators to cover the entire head is advised to be used.



Lab Coat

The lab coat makes sure your street clothes and body are protected from spills, splashes, drops, and unanticipated reactions. It is a barrier that keeps you from being exposed to accidents in the Lab and, in some cases, might save you from injury or even save your life.



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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 3 **Lesson**: 1

Topic: Things found in the Science Laboratory

Sub-Topic Safety in the Laboratory

Name of Student ……..
Date……

SAFETY CHART

Some Rules that give information on things you should always do in a Laboratory.

LABORATORY RULES
• **Always wait for the teacher's permission before entering the laboratory.**
• **Always report accidents quickly.**
• **Always move carefully when carrying equipment and chemicals.**
• **Always keep the workbench/place clean and tidy.**
• **Always clean up spilt liquid quickly.**
• **Always read labels carefully before using the contents of a bottle.**
• **Always make sure you know what to do in an emergency.**
• **Always clean up after your work is done.**

SAFETY CHART

Some Rules to follow when you are in a Laboratory.

LABORATORY RULES
• **Never enter the laboratory without the teacher's permission.**
• **Never start activities before reading instructions and labels carefully.**
• **Never turn on gas without the teacher's permission.**
• **Never taste, eat or drink in the laboratory.**
• **Never run in or out of the laboratory.**
• **Never remove anything from the lab without the teacher's permission.**
• **Never throw solids down the sink.**
• **Never use your fingers to stir or hold chemicals.**
• **Never put things other than plugs into electrical sockets or operate electrical equipment with wet hands.**
• **Never play with safety equipment.**
• **Never play in a laboratory.**

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 3 **Lesson**: 2

Topic: Things in the Science Laboratory – The First Aid Kit

Sub-Topic Treating Emergencies in the Laboratory using the First Aid Kit

Emergencies	Items in the First Aid Kit used to treat emergencies
Bruises	 cotton  mercurochrome
Cuts	 bandage (plaster)
Wounds	 bandage
Fire burns	 Gauze
Acid	 Sodium Hydrogen Carbonate
Fractures	 Splints
Insect bites or stings	 Alcohol
Headaches	 Acetaminophen
Liquid entering eye	 Eyewash

Activity:

Make a First Aid Kit using a shoebox and Insert one item for each emergency listed above.

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 3 **Lesson**: 3

Topic: Measuring in Science

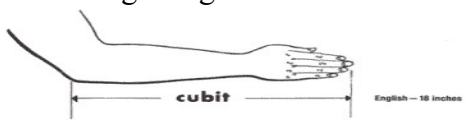
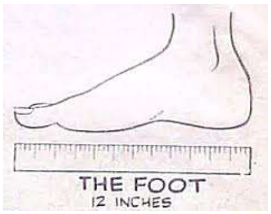
Sub-Topic: Origin of various units of measurement

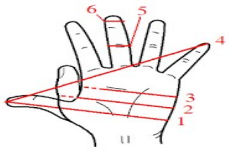
Name of student …….
Date …….

Definition

Measurement is the size, length or amount of something as established by measuring

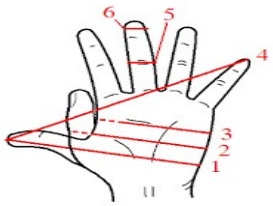
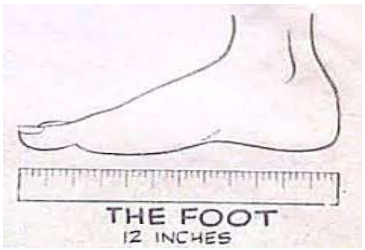
Origin of various units of measurements

List of Units of Measurements	Origin
Cubit	The average length of a man's hand from elbow to the tip of the finger 
Inch	Width of a man's thumb taken at the first Knuckle 
Foot	The average length of a man's foot 
Yard	A length measured from the tip of the nose to the end of his outstretch hands 

Grain	The weight of a barley corn seed gathered from the middle of an ear 
Stone	The average weight of a stone in the field was used by the British to weigh dry products. 
Length - Hand span	The distance between the tip of the thumb and the tip of the little finger of the outstretch hand- A hand span. 

Activity:

Match the following units of measurement with pictures depicting the origin.

Units of measurement	Pictures depicting origin
1. Yard	
2. Foot	
3. Inch	To measure cloth • Cloth was measured in yards – *tip of the nose to the tip of the thumb.* 
4. Handspan	

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SECONDARY ENGAGEMENT PROGRAMME - 2021

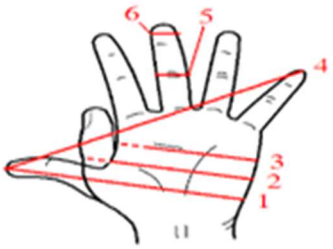
Week: 4 **Lesson**: 1

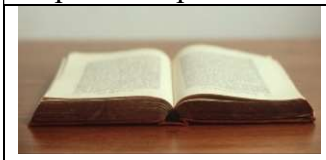
Topic: Measuring in Science

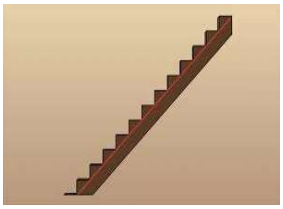
Sub-Topic: Measuring the length of objects in the home using hand-span

Name of student …….
Date …….

Use the Hand Span to measure the length of the objects stated below. For example - the length of the door is …… Hand Spans.



Names of Objects	Estimated number of Hand Spans	Actual Number of Hand Spans
 Door		
 Table		
 Cupboard top		
 book		

 carpet/mat		
 stove		
 Television		
 Step Treader		
 Chair		
 Wallpaper		

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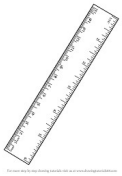
Week: 4 **Lesson**: 2

Topic: Measuring in Science

Sub-Topic Modern Instruments used to measure length

Name of student …….
Date …….

Ruler



Measuring tape



Yardstick



Meter rule

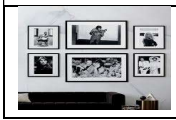


Some Instruments used to measure Length and their purpose/use

Measuring Instruments	The purpose or use of Measuring Instrument
Ruler	Used to measure in inches and is 12 inches long. It is designed to be used in the labs and classrooms
Meter stick	Used for construction purpose. It measures meter, centimetre, and millimetres and is 100 centimetres long.
Yard stick	Used to measure feet, inches and yards, and is 3 feet long.
Tape Measure	A flexible instrument used for measuring lengths and distances

Activity:

Instruction: First estimate [guess] the length of the object, then put the answer under Estimated Length. Next, measure the length using the ruler or the tape, and put your answer under Actual Length.

Objects	Estimated Length	Actual Length
 Door		
 Table		
 Cupboard		
 Book		
 Carpet/Mat		
 Stove		
 Television		
 Step treader		
 Chair		
 Wallpaper		

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 4 **Lesson**: 3

Topic: Measuring in Science

Sub-Topic Measuring length/height in mm, cm, m, km

Name of student …….
Date …….

What is the length?

Length is the distance between 2 points.

Measures of Length

10 millimetre (mm) = 1 centimetre (cm)

1 millimetre (mm) = 1/10 centimetre (cm)

10 centimetres (cm) = 1 decimetre or 100 millimetres (mm)

1 centimetre (cm) = 1/100 metre (m)

100 centimetres (cm) = 1 metre (m) =1000 millimetres (mm)

1000 metres (m) = 1 kilometres (km)

Operations of Length

To get Centimetres from Metres, you multiply the Meters by 100

You Have: 23 Metres

You want Centimetres: So centimetres = 23 metres x 100 = 2300 cm

There are 2300 centimetres in 23 metres or 100 centimetres for every metre

Activity:

Exercise to complete

You have 4 meters: you have…… centimetres

You have 75 meters: you have……. centimetres

You have 6100 centimetres: you have……. metres

You have 200 centimetres: you have…….metres

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 5 **Lesson**: 1

Topic: Measuring in Science

Sub-Topic: Measuring mass

Name of student …….
Date …….

Definition of Mass:

Mass is a large body of matter with no definite shape.

In the market or shops, we can buy plantain, eddoes, sugar, flour and other goods. We often purchase these 'goods' in pounds and ounces. These are units of measurement for mass in the British system of units.

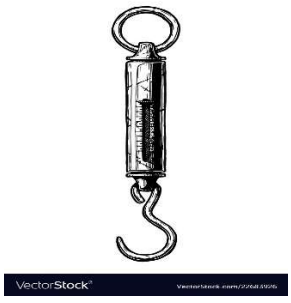
However, in the Metric System, we always measure mass in grams or kilograms. We sometimes use the word weight when we mean mass.

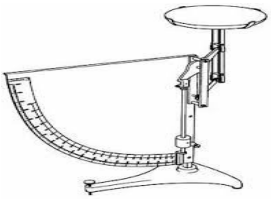
The instrument used to measure Mass: Mass is measured with a balance e.g. a spring balance or a balance scale.

Balance Scale



Spring Balance



Names of types of Balances used in the Laboratory	Pictures
The Triple Beam Balance	
The Lever Arm Balance	
The Equal Arm Balance (Balance scale)	
The Precision Balance	
The Analytical Balance	

Activity:

Make an Equal Arm Balance (balance Scale) using sanitary cups, clothes hanger, twine

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 5 **Lesson**: 2

Topic: Measuring in Science

Sub-Topic:1. Measuring Weight/Mass

2. Converting units of mass

Name of student …….
Date …….

Measures if Weight/Mass

10 Milligrams	=	1 Centigram
10 Centigrams	=	1 Decigram
10 Decigram	=	1 Gram
10 Grams	=	1 Decagram
10 Decagrams	=	1 Hectogram
10 Hectograms	=	1 Kilogram

Activity:

Conversion Exercise:

If 1000 Grams [g] = 1 Kilogram [kg]

Then 3000 Grams = ------ Kilograms

If 1000 Grams [g] = 1 Kilogram [kg]

Then 500 Grams = ------- Kilogram

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 5 **Lesson**: 3

Topic: Measuring in Science

Sub-Topic 1. Measurement of Mass: Addition with Conversion

Name of student …….
Date …….

Remember 1000 grams (g) = 1 kilogram (kg)

Add the following and give your answer in **grams**

1. 2 kg + 5 kg = _____ grams (g)
2. 1 kg + 1700g = _____ grams (g)
3. 6 kg + 3 kg = _____ grams (g)
4. 1000g + 5kg = _____ grams (g)
5. 1 kg + 7 kg = _____ grams (g)
6. 4 kg + 900 g = _____ grams (g)
7. 8 kg + 6 kg = _____ grams (g)
8. 2500 g + 100 g = _____ grams (g)
9. 1.5 kg + 1.5 kg = _____ grams (g)
10. 5 kg + 2 kg = _____ grams (g)

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 6 **Lesson**: 1

Topic: Measuring in Science

Sub-Topic: Measuring Temperature

Name of student …….
Date …….

Temperature is a measurement of how hot or how cold something is, especially, a measure of the average kinetic energy of the particles in an object, which is a type of energy associated with motion.

Temperature is measured with a thermometer. The temperature scale in a thermometer is either Fahrenheit, Celsius or Kelvin.

In Guyana, the temperature is measured in degree Celsius (°C).

The Celsius scale thermometer has 0°C as the freezing point of water and 100°C as the boiling point of water.

The human body temperature is 37°Celsius.

Note: we can estimate how hot or cold water is by using the hand or finger. But we measure how hot or cold water is by using a thermometer



Activity:

Answer the questions below:

1. Water boils at _____ °C.
2. Our normal body temperature is _____ °C.
3. Water freezes at _____ °C.
4. We measure temperature with a _____.
5. Guyana uses _____ (Fahrenheit/Celsius) as its unit of measurement for temperature.

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 6 **Lesson**: 2

Topic: Measuring in Science

Sub-Topic: The Uses of the Thermometer

Name of student …….
Date …….

Remember the thermometer measures temperature.

- It measures air temperature
  A thermometer measures the air temperature. Most thermometers are closed glass tubes containing liquids such as mercury or alcohol. When the air around the tube heats the liquid, the liquid expands and moves up the tube. A scale then shows what the actual temperature is.

- It is used in the Laboratory
  A Laboratory thermometer is used to measure the boiling point and freezing point during Science experiments. It is also used to measure the temperature of substances. It measures temperature ranging between -10 degrees Celsius and 110degrees Celsius.

- It is used at home
  At home, a thermometer is useful for the following reasons.
  1. To measure body temperature when someone is ill to determine if he/she has a fever.
  2. To measure the temperature of meat after it is cooked to make sure that it is warm enough to have killed off bacteria and, therefore safe to consume.
  3. To measure the temperature of an oven.
  4. To measure the temperature of a pool.

- It is used at the Hospital /Clinics

  Doctors and nurses use the thermometer to measure the body temperature of patients.



Remember: A thermometer is used to measure temperature.

Types of thermometers- Pictures of thermometers:

1. Digital thermometer



2. Electronic ear thermometer



3. Non-Contact Digital Infra-Red Thermometer



4. Plastic strip thermometer



5. Pacifier thermometer



6. Glass and mercury thermometer



Activity:

Choose a thermometer from the list of thermometers above. Draw the thermometer, label it and show it to your teacher.

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 6 **Lesson**: 3

Topic: Measuring in Science

Sub-Topic Measuring time.

Name of student …….
Date …….

At what time does school start? What time do you go to bed? What time do you wake up in the morning? When is your birthday?

Can you imagine what would happen if our time-keeping instruments were not exact?

In ancient times ancient ways were used to measure time. Today, we have time-keeping devices that are very accurate because of advances in modern electronics.

We need to know about time to order our events in sequence and know how long they would last.

Can you think of another reason why we need to know about time?

We can estimate time. But to be able to measure

Time accurately, a clock is used.

Some ancient ways of measuring time:

Time is the interval between two events/periods. Some instruments used in measuring time long ago are sundials, water clocks, candles, watches, clocks, and lamp clocks.



Hourglass



Sundial



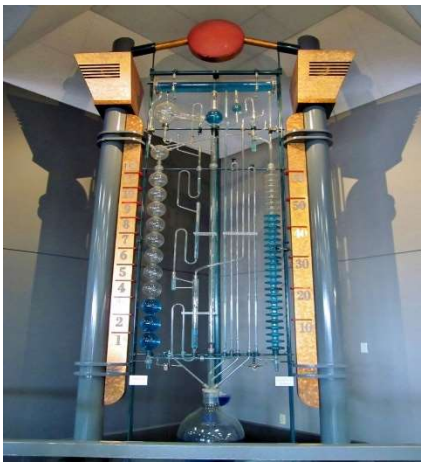
Japanese lamp clock



Wrist watch



Wall clock



Water clock



Candle clock

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 7 **Lesson**: 1

Topic: Measuring in Science

Sub-Topic: Measuring time.

Name of student …….
Date …….

Modern Ways of measuring time.

Today, the usual measuring instruments for time are clocks and watches. For a highly accurate measurement of time, an atomic clock is used.

Types of Clocks and Watches

Digital Clocks/ Watches



Night Dial Clocks



Speaking Clock- They talk and tell the time hourly.



Stop Clock- A button is used to start the clock/Watch and then press to stop it.



The Minute and the Second

After the day was divided into hours, the hour was further sub-divided into minutes., with sixty minutes in one hour and sixty seconds in one minute. The SECOND, however, is now used as the standard unit of time in the international system (SI) system.

The second is based on a certain number of vibrations of the CAESIUM atom. The time interval of vibration is constant and does not vary or change.

Activity:

Draw five (5) clocks with five (5) different names.

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 7 **Lesson**: 2

Topic: Characteristics of living things

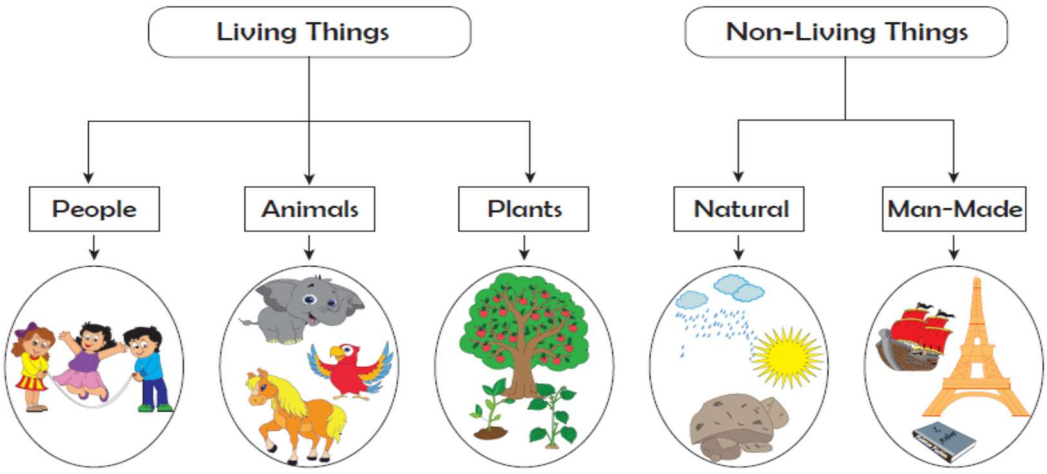
Sub-Topic: living and Non-Living things

Name of student …….
Date …….

Everything in the environment can be put into two (2) groups- Living and non-Living things.







Activities:

1: Take a tour of your yard or the immediate environment. Identify living and non - living things.

2: List the things identified under Living and Non-Living. [Draw or write the names]

Living Things	Non-Living things
e.g. Worms	A piece of stick

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 7 **Lesson**: 3

Topic: Characteristics of Living Things

Sub-Topic: Living and Non-Living Things

Name of Student …….
Date …….

All Non-Living things do not do the things Livings things do, they do not have senses.

{

LIVING THINGS AND NON-LIVING THINGS

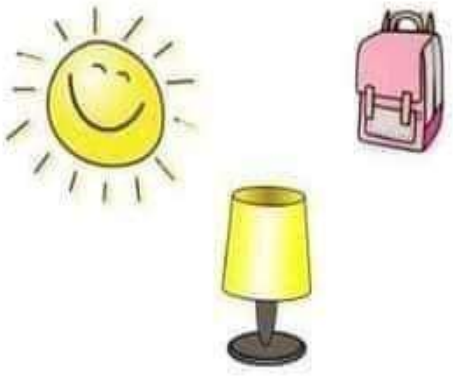
LIVING THINGS: need **all** of the below
- Need food and water live
- They breathe
- They have babies/reproduce
- They grow and move

Example: humans, animals, plants etc



NON-LIVING THINGS:
- They don't need food and water to live
- They don't breathe
- They don't have babies/reproduce
- They don't grow

Example: bag, lamp, sun, toys etc



Activities:

1: Fill in the Blanks to complete the questions

1. Living things need _____ to continue to live.
2. Non-living things do not _____.
3. Living things (can/cannot) _____ move.
4. Non-living things (can/cannot)_____ reproduce.

2: List four characteristics of living things:

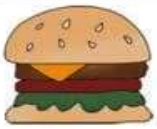
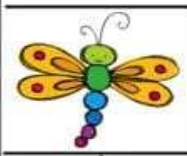
1. _____
2. _____
3. _____
4. _____

Exercise 2: Have fun with the Living and Non-Living worksheets as you recall there characteristics

Characteristics of Living and Non-Living Things **Score**

Name: _____ **Date:** _____

Directions: Complete the chart to determine if each object is a living thing. Write **Y** for YES or **N** for NO.

	Moves on its own	Grows	Reproduces	Breathes (respires)	Eats (uses energy)
					
					
					
					
					
					
					

Have Fun Teaching www.HaveFunTeaching.com

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 8 **Lesson**: 1

Topic: Looking at organisms in our environment

Sub-Topic: Plants and animals in the environment

Name of Student …….
Date …….

Living things are grouped as plants and animals based on their physical characteristics and way of life.



Plants

Plants are usually green (chlorophyll gives the leaves the green colour) and fixed in the soil. They may be large and of various shapes. They make use of simple, mineral food material from the soil.

Plants give off Oxygen and take in Carbon dioxide given off by animals through a process called transpiration. They have no or very basic ability to sense.

Animals

Most animals can move fairly freely. They cannot make their own food and are dependent on plants and other animals for food.

Animals breathe out Carbon dioxide, which plants need to make food and take in oxygen which they need to breathe.

Animals have a more developed sensory and nervous system.

Activity:

Write one sentence to show the difference between an animal and a plant.

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 8 **Lesson**: 2

Topic: The seed

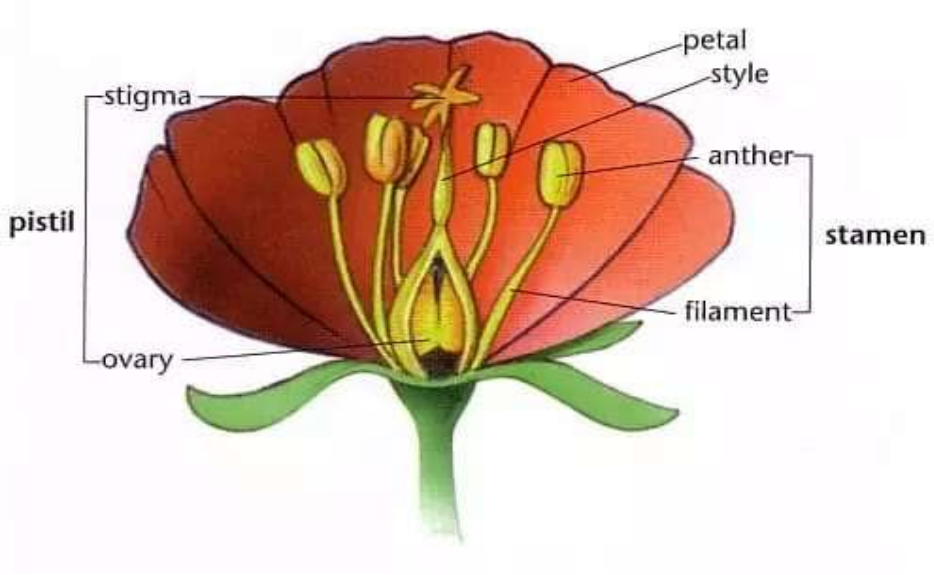
Sub-Topic: Germination of seed (the flower)

Name of Student …….
Date …….

Parts of a flower

The flower is the reproductive organ of many plants.

Common Parts of a flower



The table describes the main parts of a flower and its functions.

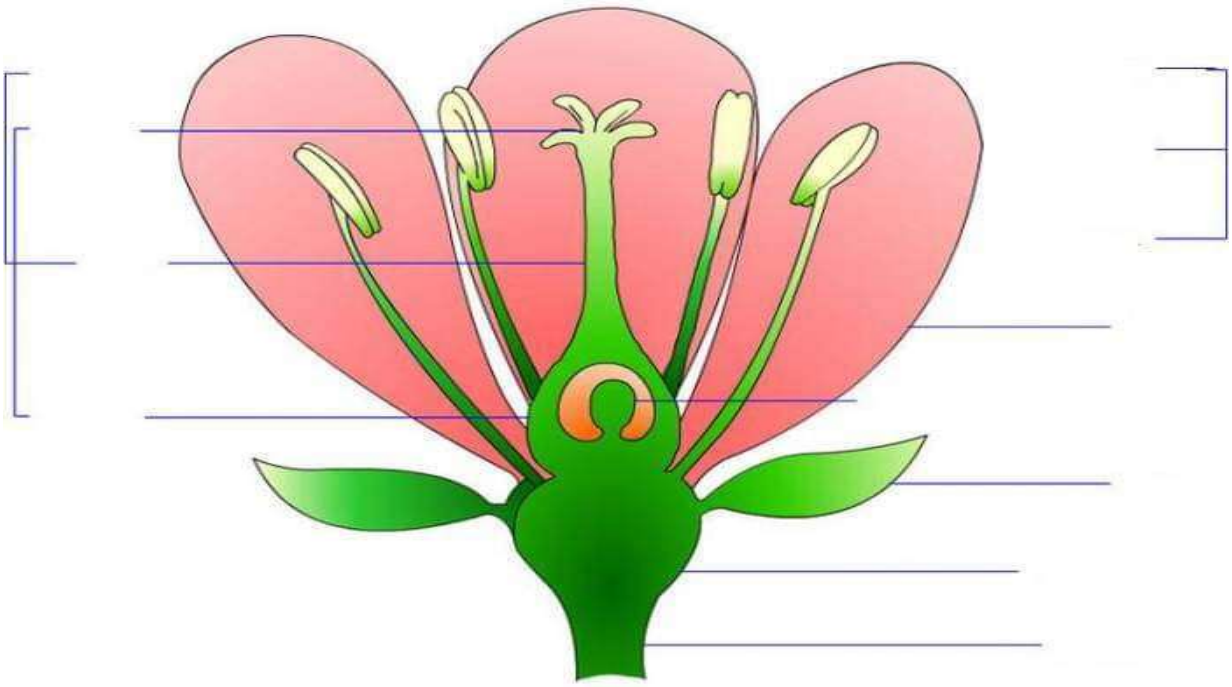
STRUCTURE	FUNCTION
Sepals	Protects the unopened flower
Petals	Maybe brightly coloured to attract insects

Stamen	The male parts of the flower (each consists of an anther held up by a filament)
Anthers	Produce male sex cells (pollen grains)
Stigma	The top of the female part of the flower that collects pollen grains
Ovary	Produces the female sex cells contained in the ovules
Nectary	Produces a sugary solution called nectar, which attracts insects.

Activity:

Label the flower below by placing these names at the right places:

Petal, Septal, Anther, Filament, Ovary, Stigma, Style



MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 8 **Lesson**: 3

Topic: The seed

Sub-Topic: Plant reproduction

Name of Student …….
Date …….

There are five (5) stages in the reproduction of the flowering plant.

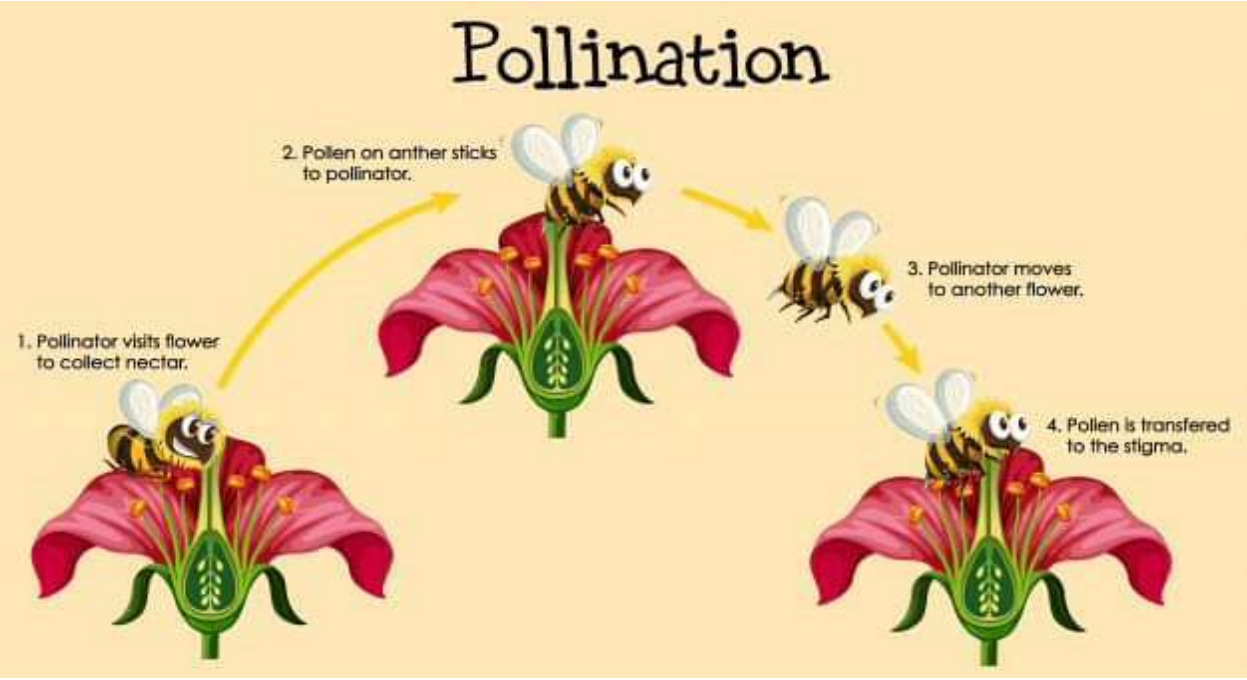
The five (5) stages are:

1. Pollination
2. Fertilization
3. Seed Formation
4. Seed Dispersal
5. Germination

Stage one (1) in the process of reproduction of a flowering plant.

<u>Pollination</u>

Pollination is the transfer of pollen grains from the male anther of a flower to the female stigma.



Agents of Pollination

1. Water
2. Wind
3. Birds
4. Bats
5. Insects
6. Plants

Activity:

Answer the following question. Fill in the blanks.

1. What is pollination?

   _____

   _____

2. ---------- and ---------- are agents of pollination.

3. ---------- and ---------- are parts of a flower.

4. The first stage of reproduction is? _____

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 9 **Lesson**: 1

Topic: The seed

Sub-Topic: Plant reproduction – Fertilization and seed formation

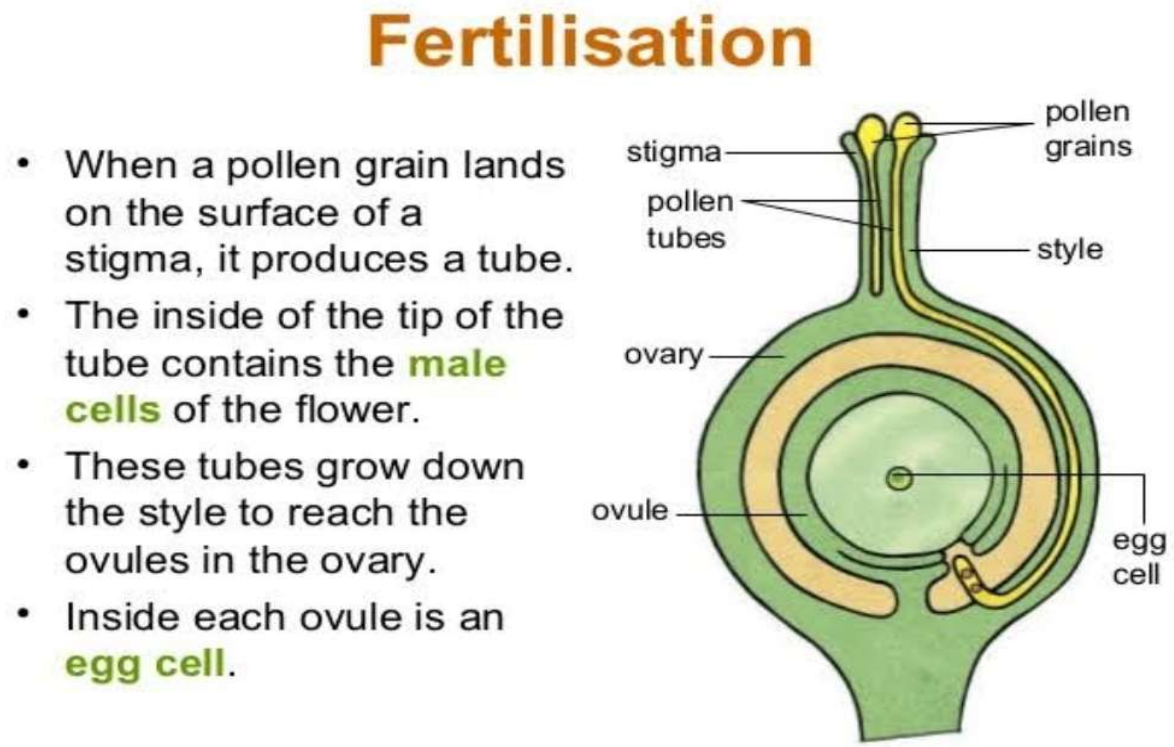
Name of Student …….
Date …….

Stage two (2) in the process of reproduction of a flowering plant.

Fertilization

Fertilization is the fusion of the male gametes (pollen) with the female gametes (ovum) to form a zygote.

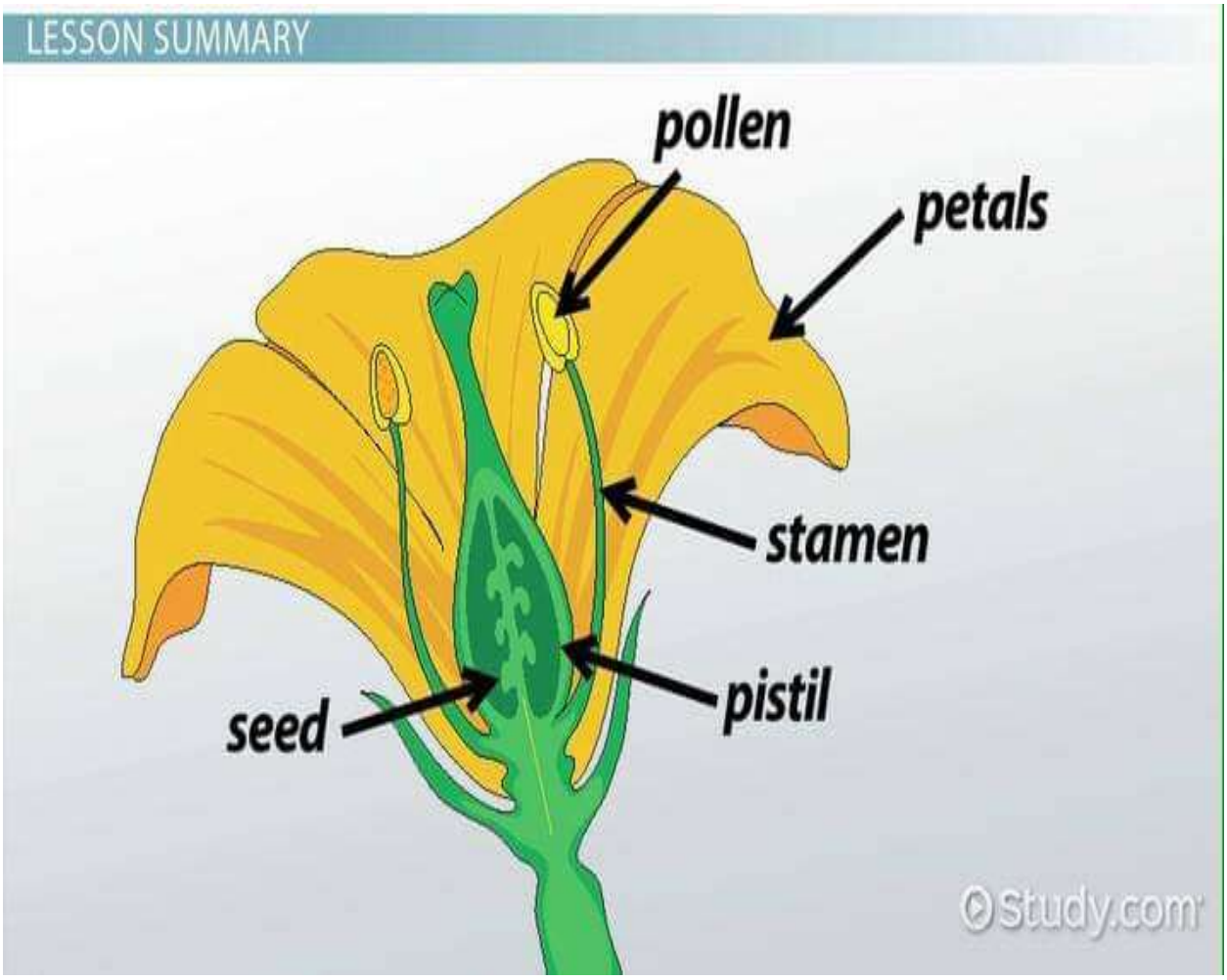
Part of Flower showing fertilization



Stage three (3) in the process of reproduction of a flowering plant

Seed formation

Flower showing formation of the seed



After fertilization, the ovary of the flower develops into the fruit and the ovules develop into the seeds.

Activity:

Complete the statements below

1. Pollination is to stigma as fertilization is to ---------- (ovary, petal).
2. Fertilization is the fusion of ---------- and ----------
3. After fertilization, the ovary of the flower becomes the ----------, and the ovule becomes the ----------

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 9 **Lesson: 2**

Topic: The seed

Sub-Topic: Plant reproduction – Seed dispersal (scattering of seeds)

Name of Student …….
Date …….

Stage four (4) in the process of reproduction of a flowering plant

Seed Dispersal

Seed dispersal is the movement, spread or transport of seed away from the mother plant.

Do you know the story of Johnny Apple-Seed, the man who planted apple seeds where-ever he went? Why do you think he did this? Imagine a world where all the mango trees grew in one place and all the coconut trees in one place and so on. What a world it would have been.

For seeds to give rise to new plants they must first get to new places. When this happens the plants get more space and light and so they are healthier. Because of these reasons, seeds are dispersed or scattered.

Agents of dispersal are water, wind, animals including birds, and man.

Diagram showing how seed are dispersed



Activities:

1: Answer the questions below

After eating a fruit, the mother threw the seeds in the back yard. Father threw the seeds in the front yard. Mother and father were involved in seed----------

Agents of dispersal are ----------, ----------, ---------- and ----------

2:Match the following condition and sources

sunlight	wind
water	sun
air	rain

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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 9 **Lesson**: 3

Topic: The seed

Sub-Topic: Plant reproduction – Germination

Name of Student …….
Date …….

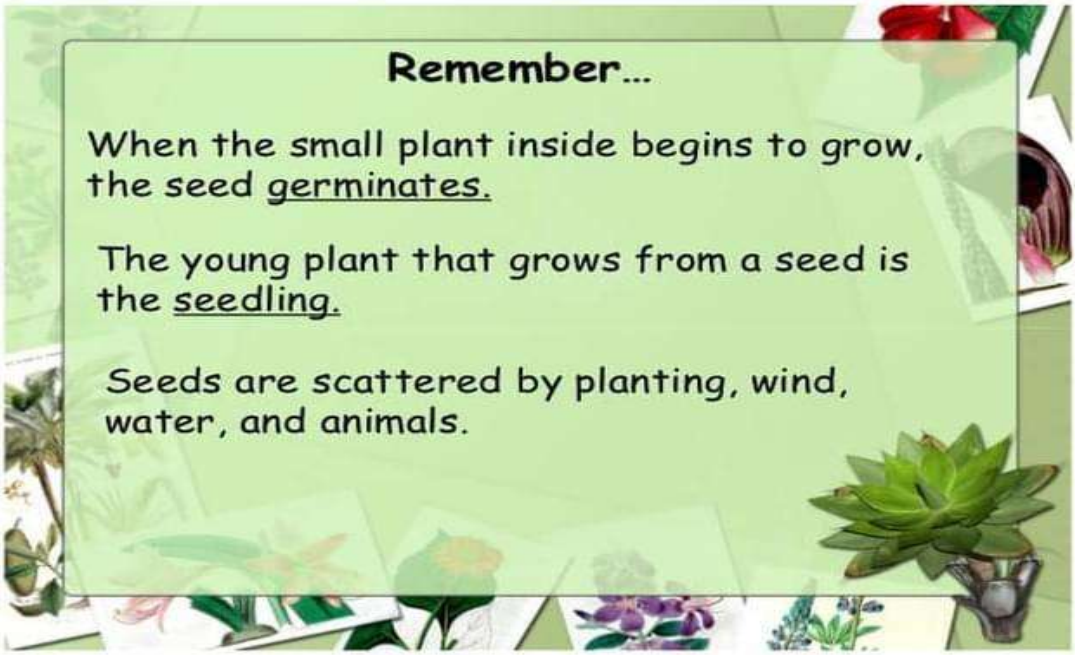
Stage five (5) in the reproductive process of a flowering plant.

What is Germination:

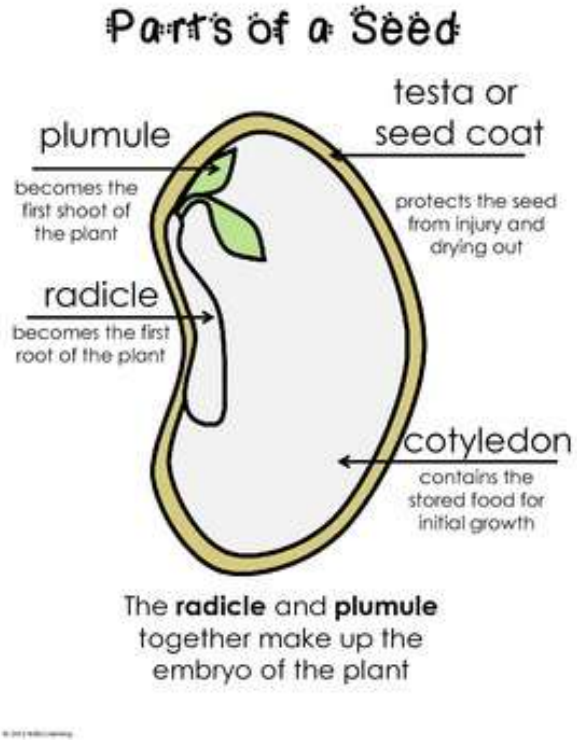
Germination the development of a new plant from a seed.

The life of a plant begins with a seed. Once you plant and water a seed, it begins to germinate.





Parts of a Germinated seed



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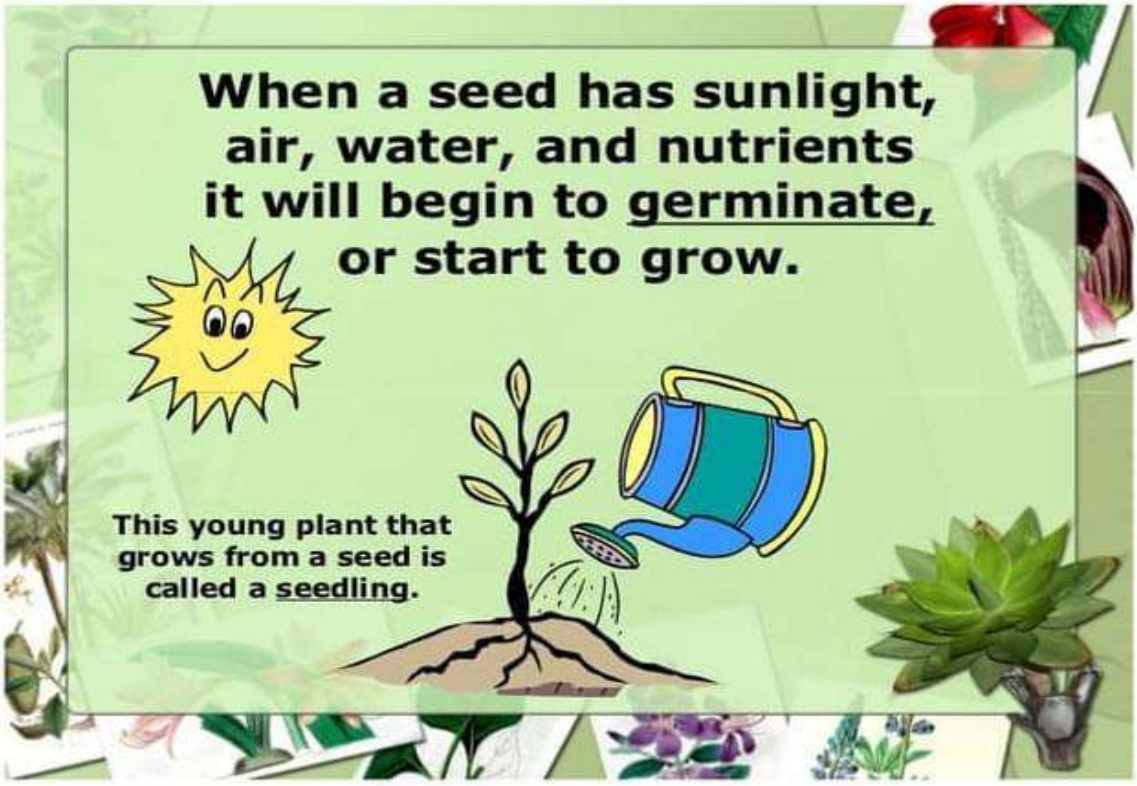
Week: 10 **Lesson**: 1

Topic: The seed

Sub-Topic: Plant reproduction – Conditions necessary for Germination

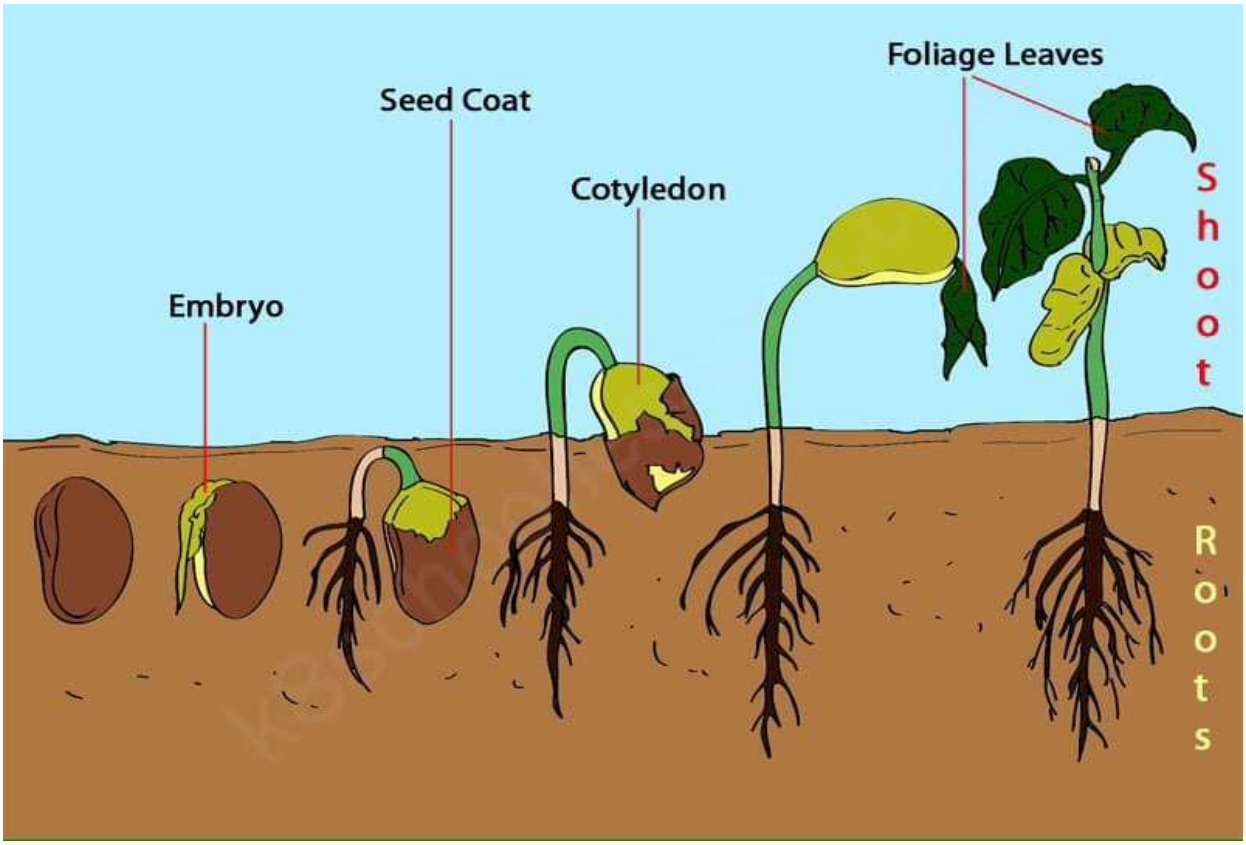
Name of Student …….
Date …….

As we have already learnt, seeds are scattered by wind, water, animals and man. If the conditions are right they will grow into new plants. This development of a new seed into a new plant is called germination. Conditions necessary for germination are air, water, warmth (sunlight) and nutrients.



If conditions are right, seeds will develop into new plants.

PICTURE SHOWING SEED DEVELOPMENT:



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SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 10 **Lesson**: 2

Topic: The seed

Sub-Topic: Plant reproduction – Stages of Germination

Name of Student …….
Date …….

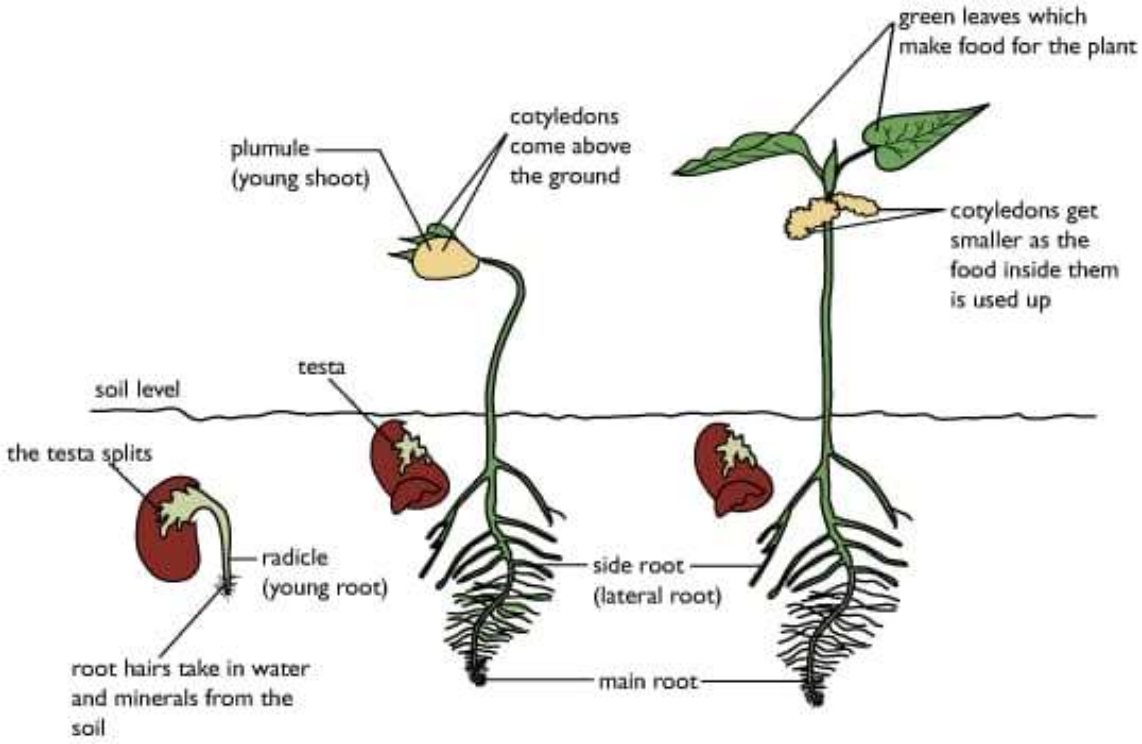
Topic: The seed

Sub-Topic: Stages of Germination

When a seed is planted and conditions are right, it will become metabolically activated and germination will proceed according to the following stages: The seed coat (testa) ruptures and the embryonic root (radicle) grows into the ground to extract key nutrients and minerals. The cotyledons emerge and produce the growing shoot's first leaves.

The diagram below shows the following:

1. The seed coat (testa) ruptures (splits) and the radicle grows into the ground.
2. The cotyledons emerge and produce the growing shoot.
3. The shoot's first leaves.



Activities:

1: Answer the questions below

Germination

List the condition necessary for germination. ----------, ----------, ----------and ----------

Germination is the development of a ---------- ---------- from a ----------.

2: Rearrange the following to show the stages of germination

1. First leaves
2. Radicle grows into the ground
3. Cotyledons emerge and produce the growing shoot
4. Split testa

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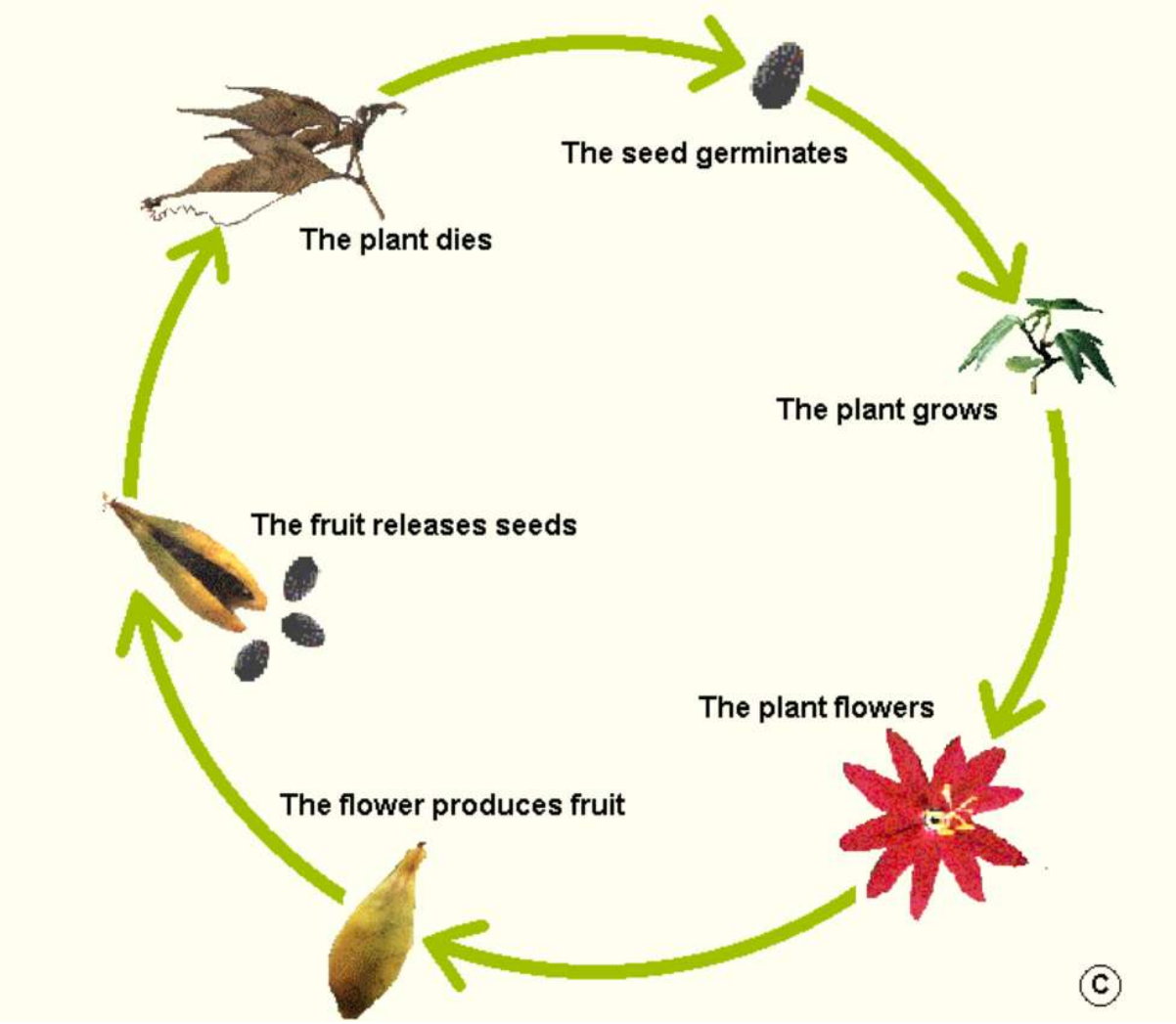
Week: 10 **Lesson**: 3

Topic: The seed

Sub-Topic: Germination of the seed

Name of Student …….
Date …….

Life Cycle of a flowering plant



Summary

- The main function of the flower is reproduction.
- Pollination is the transfer of pollen grains from the anther to the stigma.
- The pistil and the stamen are the reproductive parts of the flower.
- Agents of pollination are wind, water, insects, birds, animals, butterflies, etc.
- The union between the pollen grains and the ovules is called fertilization.
- After fertilization the fruits and seeds develop.
- Pollination and fertilization are important to life.
- Germination is the development of a new plant from a seed.
- Seeds are scattered before they germinate.
- Agents of dispersal are animals, wind, water, man.

MINISTRY OF EDUCATION

SECONDARY ENGAGEMENT PROGRAMME - 2021

Week: 1**1**

Annual Assessment

Name of Student …….

Date …….

Instruction: Answer all questions. Each question carries two marks.

1. All things found in the environment are divided into …….. groups.

   A.2 B.3 C.4 D.6

2. One of the groups is …….

   A. Plant B. Living Things C. root D. People

3. We use a …… to keep us safe.

   A. Fire Bucket B. Matches C. Bin D. Broom

4. The unit used in Guyana to measure temperature is ……...

   A. Fahrenheit B. Kelvin C. Degree Celsius D. None of the above

5. If 10 Centimeters = 100 Millimeters. Then 40 Centimeters = …… Millimeters

   A. 4000 B. 4400 C. 40 D. 400

6. A warning sign helps us to keep …….

   A. Happy B. Fearful C. Smart D. Safe

7. Insects visit the flower for ……

   A. Honey B. Nectar C. Milk D. Food

8. We use ……. to measure time.

   A. Ruler B. Balance C. Clock D. Thermometer

9. Temperature shows how …… or how cold a substance is.

   A. warm B. Soft C. Bright D. hot

10. We measure temperature with a ……

A. Balance B. Ruler C. Clock D. Thermometer

11. An original way of measuring length is by using ……

A. Stone B. Elbow C. Ruler D. Tape Measure

12. The root of a plant is at the ……. of a plant.

A. Top B. Bottom C. Middle D. End

13. We find the mass of an object by using a ……

A. Thermometer B. Balance C. Clock D. Ruler

14. Non-Living things …… breadth.

A. can B. cannot C. always D. will

15. Plants breathe out …….

A. Oxygen B. Carbon Dioxide C. Heat D. Water

16. The main source of heat on the earth is the ……

A. Moon B. Sun C. Fire D. Iron

17. Plants need ……. water and sunlight in order to grow.

A. Air B. Seed C. Rock D. Paper

18. Our normal body temperature is …… degrees Celsius.

A. 100 B. 37 C. 0 D. 360

19. Water boils at …… degrees Celsius.

A. 100 B. 37 C. 0 D. 360

20. Living things are divided into …….. and animals.

A. Stone B. Plants C. Human D. Birds

21. The ……is a part of a plant.

A. Leaf B. Air C. Sun D. Eye

22. Another name for seed coat is …...

A. Leaf B. Cloak C. Tester D. Cotyledon

23. Human beings have ……. senses.

A. 2 B. 5 C. 4 D. 3

Fill in the blank. Each question carries 2 marks.

24. Mass is ……

25. We should not …… and ……..... in the laboratory.

Read the statements. Circle TRUE if they are correct and FALSE if they are incorrect.

26.	Fish is an animal.	True	False
27.	A dry leaf needs water to grow.	True	False
28.	A beaker is found in a Science laboratory.	True	False
29.	All living things eat food to grow.	True	False
30.	A First Aid Kit has spoons and forks in it.	True	False

END OF EXAMINATION