

DISNEY KINDERGARTEN AND PRIMARY
MONDAY 30TH MARCH, 2020
P.4 SCIENCE WORK

Name: _____

Crop growing practices

There are different activities done during growing of crops;

- | | |
|----------------------|------------------|
| a) land clearing | d) planting |
| b) digging/ploughing | e) transplanting |
| c) seed selection | f) gap filling |

Caring for crops

- | | |
|------------------------------------|-------------------------|
| a) Watering | e) Pruning and spraying |
| b) Weeding | f) Harvesting |
| c) Thinning | g) Drying and storage. |
| d) Applying manure and
mulching | |

Land preparation, selecting seeds, digging or ploughing

Land preparation/clearing land is in the first stage.

Methods used: slashing, use of ox-ploughs, tractors, cutting bushes, digging and controlled bush burning. But bush burning destroys humus and kills living organisms in soil.

Selecting seeds; selecting good seeds to leave out bad ones is called **sorting**. Seeds damaged by pests and disease, with holes, rotten seeds shouldn't be selected because they can't germinate. **Seed viability** is ability of seeds to germinate under good conditions. Those which can't germinate are dormant.

Exercise

1. Write down four examples of crop growing practices.

_____	_____
_____	_____

2. Mention two methods that can be used to clear land.

_____	_____
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3. Define the term sorting as used in crop growing.

4. Why is seed selection important before planting?

5. What is seed viability?

TUESDAY 31ST MARCH, 2020

Digging; this can be done using hoe, forked hoe, ox-plough or tractor

Uses of digging; it opens the land, it makes soil soft, air and water can easily enter soil.

Planting; it is done during the rainy or wet season.

Methods of planting

Row planting; this is planting of crops in lines.

Examples of plants grown in rows

maize, cassava, beans, pineapples, potatoes

Advantages of row planting;

- ✓ It makes weeding easy
- ✓ It makes harvesting easy
- ✓ It controls easy spread of pests and diseases
- ✓ It prevents wastage of seeds
- ✓ It allows proper spacing

Disadvantages of row planting;

- ✓ It needs a lot of labour
- ✓ It takes a lot of time.
- ✓ It requires a large space of land.

2. Broadcasting or sowing:

This is scattering seeds in a garden at random and covering them with soil.

Examples; millet, rice, wheat

Advantages of broadcasting or sowing seeds;

- ✓ It saves time
- ✓ It does not need a lot of labour
- ✓ It does not waste nutrients in soil

Disadvantages of broadcasting or sowing seeds;

- ✓ Makes weeding difficult
- ✓ Leads to easy spread of pests and diseases
- ✓ Makes harvesting difficult
- ✓ Leads to competition for nutrients and sunlight

Broadcasting planting



Row planting



Exercise

1. State two farm implements used in digging

2. Give two uses of digging land before planting.

3. Which season is best for planting crops?

4. Identify two methods of planting crops.

5. Give two examples of crops planted under each method mentioned above.

WEDNESDAY 1ST APRIL, 2020

Caring for crops

1. **Weeding** is the removal of plants growing where they are not wanted.

Advantages of weeding:

- ✓ It creates space for crops to grow well.
- ✓ Crops don't compete with weeds for water & mineral salts.
- ✓ It reduces spread of pests and diseases.
- ✓ It makes harvesting easy.

Weeds

Weeds are plants growing where they are not wanted.

Examples of weeds

- | | | |
|------------------|----------------------|-----------------|
| ✓ Spear grass | ✓ Star grass | ✓ Couch grass |
| ✓ Elephant grass | ✓ wild finger millet | ✓ Wandering Jew |
| ✓ Black jack | ✓ Thorn apple | |

Uses of weeds to people

- ✓ Some weeds are eaten as green vegetables
- ✓ They give manure
- ✓ They reduce soil erosion in compounds

Dangers of weeds in a garden

- ✓ Weeds encourage easy spread of pests
- ✓ They make harvesting difficult
- ✓ Weeds compete for water, light space and nutrients

Activity: Identify any garden in your compound or plants and take care of the crops with the help of your parents.

2. **Gap filling** is replanting crops in spaces left in a garden. It helps to keep the right plant population.

3. **Watering.** This is done when rain is not enough. Horse pipe, sprinkler & watering can are used.

4. **Thinning.** This is removing excess crops from garden. It helps to remove damaged, weak or diseased crops.

Crops get enough space, air & nutrients.

Note: Sorghum, millet, rice, bananas, tomatoes, maize need thinning.

Pruning. This is removal of unwanted parts from a growing plant.

Advantages of pruning:

- Reduces the rate of transpiration
- Reduces hiding places for pests
- Crops get enough sunlight

Note: pruning saw, secateurs pruner & shears are used.

6. **Transplanting.** This is the transfer of seedlings from nursery bed to the main garden.

A nursery bed

A nursery bed is well prepared place where seedlings are raised before taken to the main garden.

Importance of a nursery bed:

- A nursery bed protects seedlings from harsh weather.
- It gives time for farmers to prepare the main garden.
- It enables farmers select and plant healthy seedlings.

Transplanting is done in the evening to allow seedlings absorb enough water overnight due to reduced transpiration. A trowel is used for transplanting.

Hardening off is the removal of shade from a nursery bed to make seedlings get used to harsh weather conditions.

Exercise

1. How is pruning different from thinning?

2. Give two advantages of pruning crops.

a) _____

b) _____

3. Explain the meaning of the term transplanting.

4. Which garden tool is used for transplanting?

5. Which time of the day is appropriate for transplanting

6. Draw a trowel

7. Mention four ways of caring for crops in garden.

a) _____

b) _____

c) _____

d) _____

8. Define the term weeding.

8. Give two uses of weeding gardens.

a) _____

b) _____

9. What are weeds?

10. Explain two ways in which weeds are a nuisance to farmers.

a) _____

b) _____

11. In which two ways are weeds useful to farmers?

a) _____

b) _____

THURSDAY, 2ND APRIL, 2020

Mulching

Mulching; this is the covering of soil with dry plant materials.

Mulches include;

- | | |
|---------------|-----------------|
| ✓ dry grass, | ✓ coffee husks |
| ✓ dry leaves, | ✓ wood shavings |

Advantages of mulching;

- | | |
|---------------------------------|-------------------------------|
| ✓ It keeps moisture in the soil | ✓ It adds manure in the soil |
| ✓ It reduces soil erosion | ✓ It reduces growth of weeds. |

Disadvantages of mulching;

- | | |
|--------------------------------|------------------------------------|
| ✓ Mulches can be fire hazard | ✓ Some mulches can turn into weeds |
| ✓ Mulches hide some crop pests | ✓ Mulches are tiresome to prepare |

12. **Manuring:** This means putting manure in soil to make soil fertile.

Sources of manure

- ✓ Animal dung and urine
- ✓ Plant remains
- ✓ Green plants

Types of manure (natural fertilisers)

- **Compost manure** is got from plant remains.
- **Green manure** is got from green plants especially legumes.
- **Farm yard manure** is got from animal urine and dung.

Exercise

1. What is mulching?

2. Identify any four examples of mulching materials.

3. Explain how mulching helps to reduce soil erosion.

4. Apart from reducing soil erosion, give three other advantages of mulching.

- a) _____
- b) _____
- c) _____

5. In which two ways is mulching of a disadvantage?

- a) _____
- b) _____

6. Which type of nature manure is got from kitchen refuse?

7. Write down any two sources of organic manure.

FRIDAY, 3RD APRIL, 2020

Harvesting

Harvesting: this is collecting ready or mature crops from a garden.

Methods of harvesting

- **Cutting** e.g. banana, sugarcane etc
- **Digging out** e.g. sweet potatoes, cassava etc
- **Uprooting** e.g. ground nut, cassava etc
- **Picking or plucking** e.g. coffee, tomato, fruits, tea, etc

Sun drying: this helps harvested crops to dry or be dehydrated so as to stay longer without going bad. Examples, maize, beans, millet, cassava

Storing is keeping harvested crops for future use.

Storage facilities; granary, store, baskets, buckets, pots

A **traditional granary** is fixed with rat guards to prevent rat pests. The above facilities should be protected against dampness which spoils stored crops.

Uses of storing food

- ✓ To get what to plant in next season
- ✓ To sell when market price is good
- ✓ To get what to eat in dry the season

Crop record is all the written information of activities carried out on a crop farm.

Examples of crop records:

- ✓ Income & expenditure record(sales records)
- ✓ Inventory
- ✓ Production record
- ✓ Health record
- ✓ Feeding records
- ✓ Labour records

Advantages of record keeping

- It keeps the history of farm.
- It helps to know if the farm makes profits or losses.
- Good records help a farmer to get bank loans.
- They help to plan for the farm.
- Records enable farmers to be taxed fairly.

Exercise

1. Identify two storage facilities used by farmers to keep their harvested crops.

2. Give two reasons why farmers store food.

a) _____

b) _____

3. What are farm records as used in crop growing?

4. Give three reasons why farmers need to keep farm records.

a) _____

b) _____

c) _____

5. Define the term harvesting.

6. Identify four methods of harvesting crops.

7. Give two examples of crops harvested by plucking.

8. How is the crop shown below harvested?



FRIDAY, 3RD APRIL, 2020

A crop pest

A pest is an organism which damages crops.

Common pests of crops

Caterpillars, aphids, weevils, snails, slugs, locust, termites, monkeys, rats, moles, squirrels, eel worms, army worms

Common signs of pests and disease attack in crops:

- ✓ Holes in leaves, fruits, seeds, roots and stems of crops
- ✓ Rotten plant parts.
- ✓ Deformed plant parts
- ✓ Change of colour in leaves, fruits and stem.

Ways of controlling crop pests and diseases

- ✓ Spraying crops with pesticides. Planting clean (disease free) seeds/materials.
- ✓ Plant disease resistant varieties.
- ✓ Uprooting diseased crops.
- ✓ Early planting and timely weeding.
- ✓ Use of scare crows.
- ✓ Practicing crop rotation.

Exercise

1. Define the term crop pest.

2. Identify any four examples of pests that attack crops in gardens

3. Mention two examples of pests of stored crops.

4. Name any form of damage done by pests to crops.

5. Give three ways of controlling pests without using chemicals.

- a) _____
- b) _____
- c) _____

6. Which garden tool is used for spraying chemicals?

7. State two importance of keeping farm records.

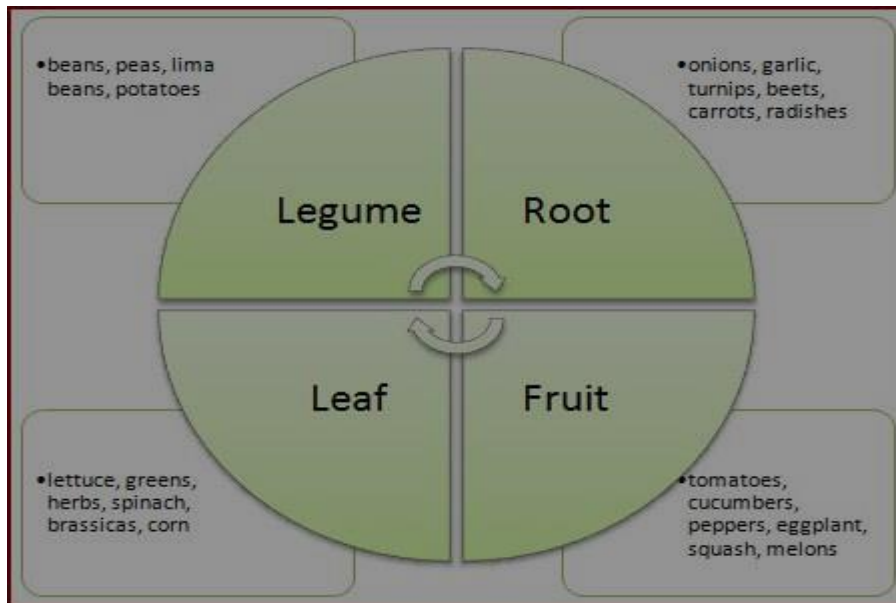
8. Mention any one crop storage facility.

9. Why should farmers store food?

Crop rotation

This is alternation or changing of crops grown on the same piece of land season after season.

Illustration



Uses of crop rotation:

- ✓ It controls spread of pests and diseases. Pests miss their food and die.
How; by breaking the life cycle of pests.
- ✓ It improves soil fertility
- ✓ It reduces soil erosion

Exercise

1. Define the term crop rotation.

2. Explain how crop rotation helps to control pests.

3. State three uses of crop rotation.

- a) _____
- b) _____
- c) _____

3. What is gap filling in crop growing?

4. Which type of weather requires watering crops?

5. Draw and name the garden tool used for watering crops.

6. Define the term thinning.

7. How is thinning important in crop growing?

TUESDAY, 7TH APRIL, 2020

Common diseases that attack crops

cassava mosaic – cassava, leaf spot – cotton, maize – maize streak, tomato blight – tomato, panama wilt disease – banana, cigar end rot

EXERCISE

1. Which plant is affected by panama wilt disease?

2. Name two signs of diseases in crops.

a) _____

b) _____

3. Identify any three groups of germs that cause diseases among crops.

4. Suggest any three possible ways of preventing crop diseases.

5. Which disease attacks cassava?

Weather is the state of atmosphere at a given time.

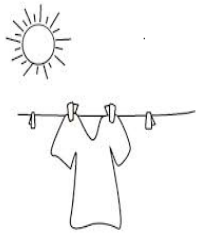
Atmosphere is the space around the Earth.

Climate is average weather condition of a place recorded for a long time

Types of weather;

Windy, cloudy, rainy, sunny, humid,

Weather chart

Sunny	Windy	Cloudy	rainy
			

Component/ elements of weather

Temperature, sunshine, wind, rainfall, humidity and cloud cover.

Exercise

1. Differentiate between weather and climate.

2. Identify four types or conditions of weather.

- a) _____
- b) _____
- c) _____
- d) _____

3. In which type of weather is an umbrella used?

4. Which element weather is favourable for?

- a) Planting _____
- b) harvesting crops _____

5. Mention four elements or components of weather.

WEDNESDAY, 8TH APRIL, 2020

Temperature is hotness or coldness of matter.

A **thermometer** measures temperature.

Units for measuring temperature are degrees.

A thermometer is read using any of the two scales below;

- ✓ **Degrees Fahrenheit**
- ✓ **Degrees Centigrade/ Celsius**

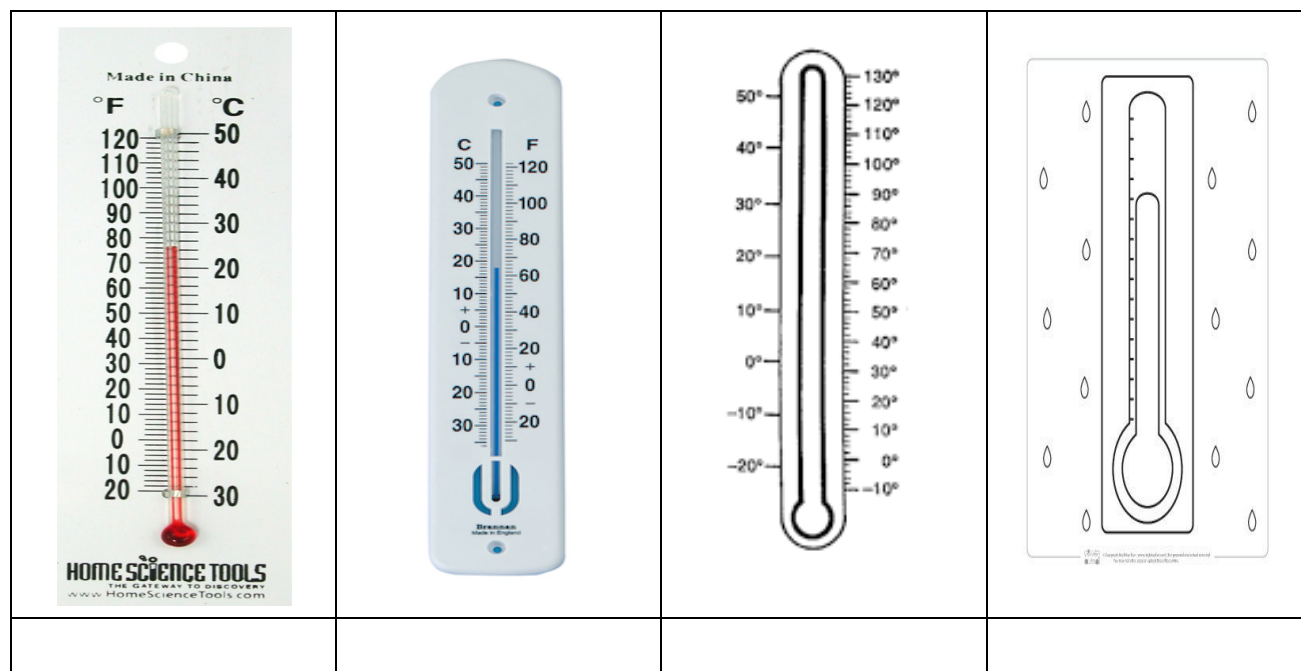
Activity:

With the help of your parent or any adult at home, request them to buy a clinical thermometer; measure and record your body temperature. If not possible, you can visit the nearest clinic if the Corona virus pandemic will have calm down. Please stay safe!

Types of thermometers:

- ✓ **Clinical thermometer/doctor's thermometer**- measures temperature of a human body.
- ✓ **Six's thermometer** – measures the highest and lowest temperatures of the day in an area. (minimum and maximum thermometer)
- ✓ **Wall thermometer** – measures room temperature. Which is 25°C?
- ✓ **Ordinary scientific thermometer**- used for science experts.
- ✓ **Weather thermometer** – used to measure temperature of the atmosphere

Different types of thermometers



Exercise

1. Define the term temperature.

2. Which weather instrument measures temperature?

3. In which units is temperature measured?

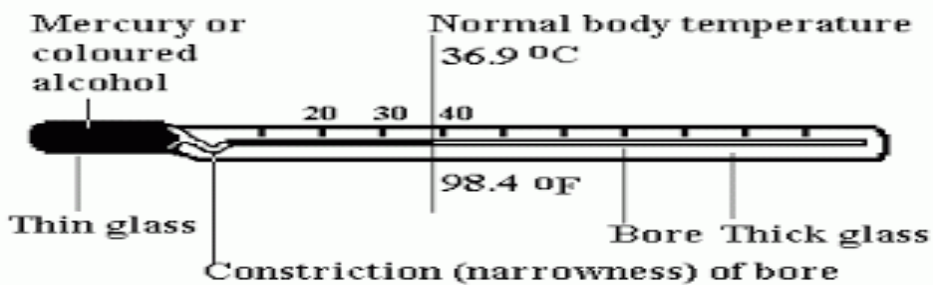
4. Which type of thermometer is used to measure human body temperature?

5. Name the use of six's thermometer.

THURSDAY, 9TH APRIL, 2020

Diagram showing a clinical thermometer

23.7.02 Clinical thermometer



Functions of each part

Kink – prevents back flow of flow of mercury before temperature is read.

The glass bulb is thin so that mercury warms up quickly.

Before using it, one should first shake the thermometer to make mercury go back to the bulb to get accurate readings.

Bore - it is made narrow to have an accurate scale.

Sites on the body where a clinical thermometer is placed

- In the mouth under the tongue
- Under arm pits

- In the anus
- In the vagina

Why is a clinical thermometer inserted in the vagina?

A vagina has constant body temperature

Note: a clinical thermometer is sterilised by using methylated spirit

Exercise

1. Draw and label parts of a doctor's thermometer

2. Why is there a bend or kink in a clinical thermometer?

3. Explain why the doctor shakes it before reusing it on another person.

4. Identify two liquids that can be used in thermometers.

5. Name the liquid metal used in thermometers.

TUESDAY, 14TH APRIL, 2020

Minimum and Maximum thermometer is sometimes called six's thermometer because it was first discovered by James Six. It is used to measure the highest and lowest temperatures of a day. It is used at the weather station and at some farms. It uses both mercury and alcohol. It can be reset using a magnet.

Structure of a maximum and minimum thermometer



Advantages of using mercury in thermometers

- ✓ Mercury doesn't stick or wet the glass.
- ✓ Mercury is good conductor of heat.
- ✓ Mercury expands and contracts uniformly.
- ✓ Mercury is opaque and hence clearly seen.

Advantages of alcohol over Mercury

- ✓ It expands six times more than mercury.
- ✓ It doesn't solidify easily (freezing point- 112 C while mercury is 39C)

Disadvantages of using water

- ✓ Water wets the glass.
- ✓ Water is poor conductor
- ✓ Water needs a lot of heat to expand.

Exercise

1. Which type of thermometer is used to measure the highest or lowest temperature of the day?

2. Give two reasons why mercury is used in thermometers.
 - a) _____
 - b) _____
3. Explain why water cannot be used in thermometers

WEDNESDAY, 15TH APRIL, 2020

Sunshine

It makes the day very bright and hot. The sun is the main source of light & heat.

Campbell sunshine recorder measures the length of time it has shined in a day.

Advantages of sunshine

- ✓ It dries harvested crops.
- ✓ It helps in rain formation.
- ✓ It generates solar electricity.

- ✓ Helps the skin make or form vitamin D.
- ✓ Sunshine kills some germs on surface.
- ✓ It dries wet clothes.

Disadvantages of sunshine

- ✓ Too much sunshine makes the day very hot.
- ✓ Prolonged sunshine causes drought.
- ✓ It dries crops and some water bodies.

Questions

1. Name the use of Campbell sunshine recorder.

2. Give four uses of sunshine in the environment.

- a) _____
- b) _____
- c) _____
- d) _____

4. Identify any two dangers of sunshine.

- a) _____
- b) _____

5. What is the main source of heat and light?

6. Which type of electricity is got from the sun?

THURSDAY, 16TH APRIL, 2020

Wind

Wind is moving air

What causes wind?

Difference in air pressure.

Measuring wind

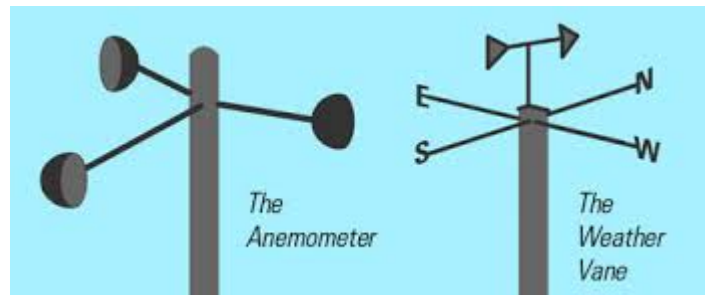
Wind vane/ weather cock shows direction of wind. Its arrow points in the direction from where wind is coming.

Wind sock shows direction and strength of wind

Anemometer measures speed of wind

Barometer measures air pressure

Pyranometer measures solar radiation



Advantages of wind

windsock

- ✓ Wind helps to carry out pollination in plants.
- ✓ It is used in winnowing.
- ✓ It helps in rain formation.
- ✓ Wind dries wet clothes.
- ✓ Wind brings fresh air in warm place.

Dangers of wind

- ✓ Wind spreads airborne diseases.
- ✓ It blows or raises dust into our eyes among others.
- ✓ Pollutes air or the environment
- ✓ It causes soil erosion
- ✓ Strong wind can blow off roofs of houses
- ✓ Breaks trees or destroys crops
- ✓ Strong wind causes storm on land and sea
- ✓ It can lead to accidents both on land and water.

Ways of managing strong wind

- ✓ Planting trees to act as wind breaks.
- ✓ Building houses with flat roofs in desert areas.
- ✓ Building houses with slanting roofs in equatorial areas.

Exercise.

1. Name the use of each weather instrument below

(a) wind vane _____

(b) wind sock _____

2. In which three ways is wind useful in our environment?

a) _____

b) _____

c) _____

3. Identify three dangers of wind in the environment.

a) _____

b) _____

c) _____

4. What is the use of anemometer on a weather station?

5. Define the term wind

FRIDAY, 17TH APRIL, 2020

Sources of water – Rain is main source of water.

Others sources of water are;

lakes, rivers, seas, oceans, springs, wells

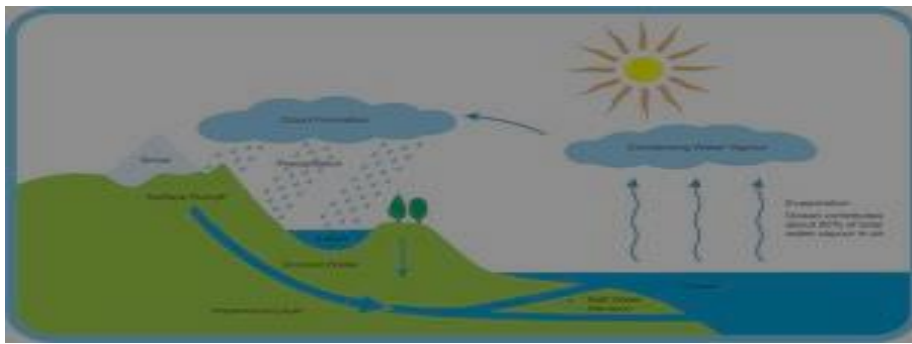
Water cycle

The sun heats water bodies and plants causing water vapour by the processes evaporation and transpiration.

Water vapour rises and cools by condensation to form clouds.

Clouds become heavy and thick and later fall as rain.

Diagram showing water cycle



Activity: Boiling water in kettle to show simple rain cycle

Rain fall is the amount of water that has fallen in an area.

Rain is water falling from the sky.

Types of rain fall

- **Cyclonic or frontal rainfall**- formed as a result of warm air meeting with cool air.
- **Relief rainfall or orographic**- rainfall is received on mountains.
- **Convective rainfall**- rainfall received on areas around water bodies.

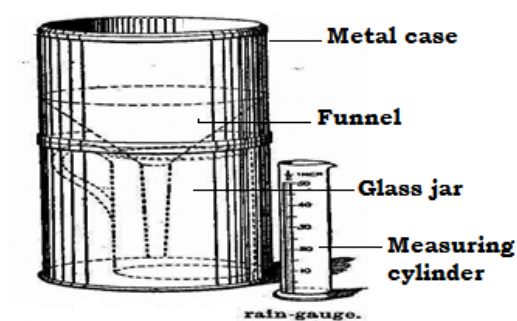
Rain gauge – measures amount of rainfall received in an area.

Rainfall is measured in millitres

Why?

- It measures how deep water has entered into soil.
- It should be half buried in a flat open ground to avoid water from buildings and trees to enter.
- To also prevent obstruction of rain

A rain gauge is placed five metres above the soil level to prevent flowing water from splashing into it.



Activity
Making simple
rain gauge using
local materials
like plastic
bottles

Exercise

1. (a) What is the main source of water?

2. b. Give three sources of water.

a) _____

b) _____

c) _____

3. Name the use of rain gauge.

4. Explain why rain gauge is buried half way in an open area with few cm above the ground?

5. In four sentences, explain formation of rain.

6. Name two important processes involved in rainfall formation.

7. What is the use of the sun in rain cycle?

MONDAY, 20TH APRIL, 2020

Uses of rainfall or rain water

- ✓ Rain water is used for drinking, washing, and building.
- ✓ it cools hot environment
- ✓ It enables plants to grow well.
- ✓ It fills water bodies
- ✓ It dissolves mineral salts for plants to absorb.

Dangers of rainfall

- ✓ Heavy rainfall causes floods.

- ✓ It makes transport difficult
- ✓ It leads to easy spread of waterborne diseases
- ✓ It causes land slides
- ✓ Destroys property
- ✓ Destroys crops in a garden

Exercise:

1. State four uses of rainfall in the environment

- a) _____
- b) _____
- c) _____
- d) _____

2. Identify four dangers of heavy rain.

- a) _____
- b) _____
- c) _____
- d) _____

Humidity is amount of water vapour in the atmosphere.

Hygrometer is used to measure humidity.

Clouds: There are four types of clouds. These are;

- a) **Cirrus** – highest clouds
- b) **Stratus** – sign of bad weather
- c) **Cumulus** – they appear in dry weather
- d) **Nimbus** – nearest to the Earth and are a sign of rain, they are dark grey

Uses of clouds;

- ✓ Clouds protect us from direct sunshine.
- ✓ They form rain

Dangers of clouds

- ✓ Cause accidents during air transport
- ✓ Cumulus produce thunder storms
- ✓ Clouds cause lightning