



*Dr. Bbosa Science*

Sponsored by  
**The Science Foundation College**  
**Uganda East Africa**  
Senior one to senior six

+256 778 633682 0753 143413

**Based on, Best for Science**

[digitalteachers.co.ug](http://digitalteachers.co.ug)



Nuture your dreams

**P4 term 1**

**THEME: Our Environment**

**Topic 3/4: Weather changes around us**

**WEATHER**



Weather is the atmospheric condition of a place at a given time over a short period of time.

The study of weather is called meteorology

### **Types of weather conditions**

People who study weather are meteorologist.

The **weather may** be sunny, rainy, cloudy or windy or calm

A **sunny** day is a day that the sun is shining

A **rainy** day is a day that we have rain

A **cloudy** day is a day having clouds

A day is **windy** if there is wind blowing

A day is **calm** if there is no wind blowing at all.

### **Exercise 1**

(a) Name two weather conditions

(b) List two uses of rain and two uses of wind

### **Importance of predicating weather**

Plan our daily activities such as moving with umbrellas

Flying of airplanes

Washing clothes

### **Weather symbols**

There are various symbols that are said to help in communicating about the weather.

These symbols are called weather symbols.

### **The clouds**

There are different types of clouds. The clouds are classified depending on how high they are in the sky and according to their shapes.

**Nimbus clouds** - These clouds are dark grey in colour. They do not have a specific shape and are usually low in the sky. They bring about rain and are called rain clouds.



### Weather instruments and their uses

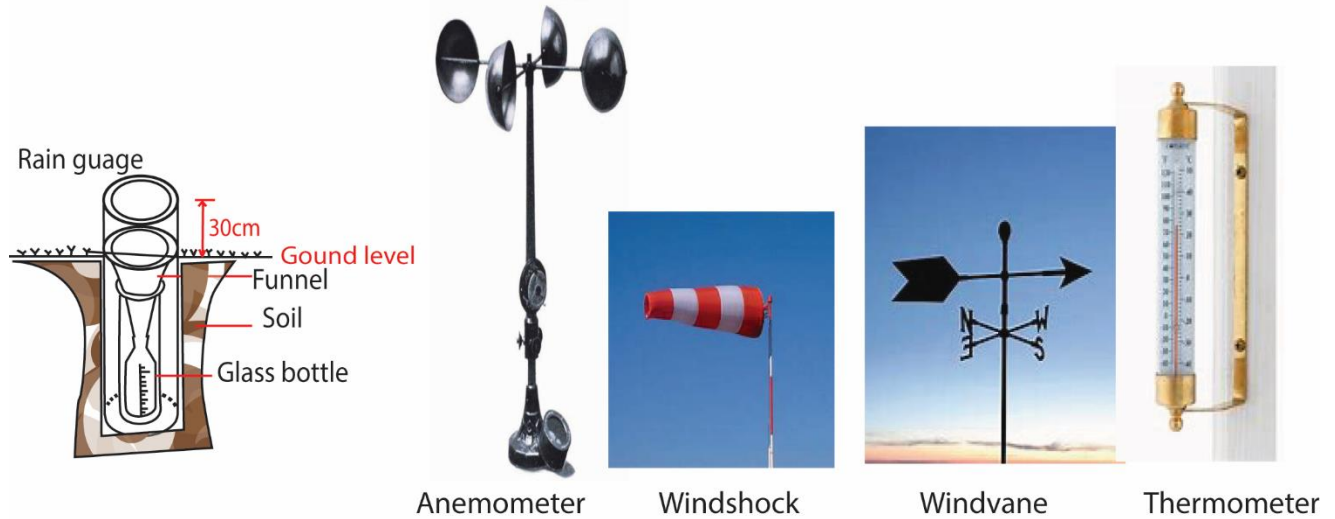
There are different weather instruments and each has its specific purpose. The weather instruments are:

- (i) Wind vane: **direction of wind from which wind blows**
- (ii) Barometer: **amount of air pressure**
- (iii) Rain gauge: **amount of rain**
- (iv) Wind sock: **measures strength of wind and direction of wind**
- (v) Thermometer: **measures temperature**
- (vi) Anemometer: **measures speed of wind**
- (vii) **Hygrometer: measure humidity**

### Exercise 2

Name and state uses of weather instrument

## Weather instruments



### A rain gauge

- measures the amount of rainfall in millimeters (mm).
- it is made up of a funnel and a collecting container and measuring cylinder.
- It is dug 15cm deep to reduce evaporation
- It is raised 30 cm above the ground to prevent splashing of water
- It should be placed on a flat open ground to receive all the rain
- Reading should be done at the same time every day.

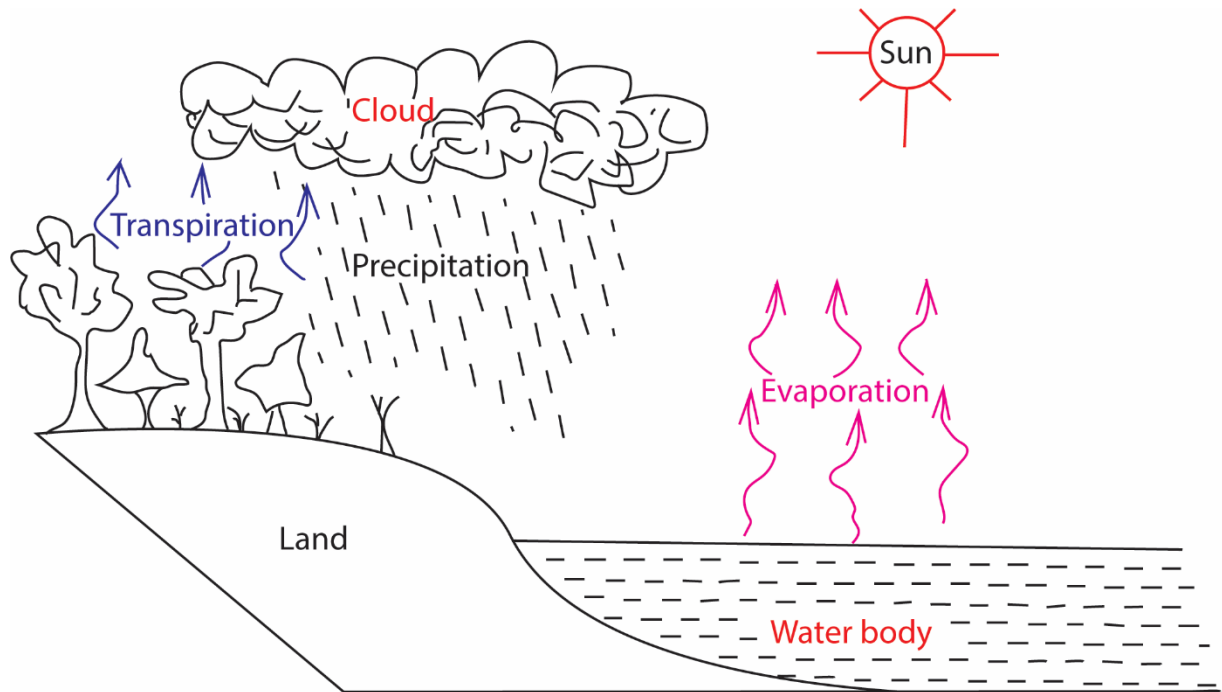
### Sources of water

- (i) Rainfall
- (ii) Rivers
- (iii) Dams
- (iv) Springs
- (v) Wells and boreholes
- (vi) Lakes
- (vii) Seas or oceans

## Water cycle

The **water cycle** is the path that all water follows as it moves around our planet.

Of the many processes involved in the water cycle, the most important are **evaporation**, **transpiration**, **condensation**, **precipitation** and **runoff**.



**Evaporation** is the change of a liquid into vapour below its boiling point.

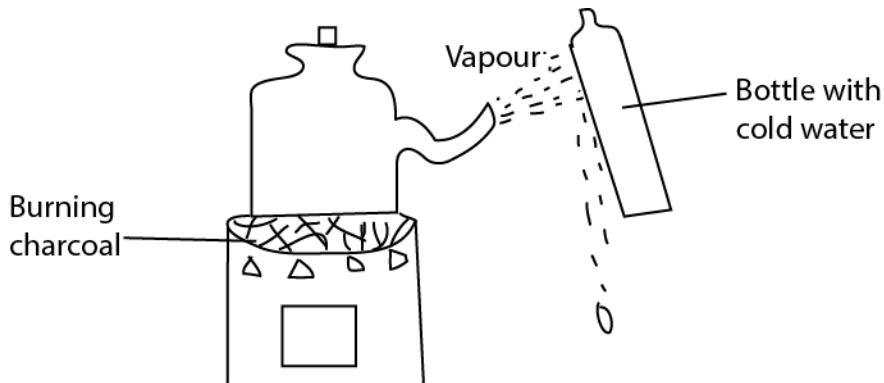
**Transpiration** is the loss of water vapour from the plant through the stomata.

**Condensation** is process by which water vapor turns into a liquid.

**Precipitation** is any liquid or frozen water that forms in the atmosphere and falls back to the Earth in form of rain.

**Runoff**, is the waters that travel over the land surface and through channels to reach a stream.

## Demonstration for formation of rain



Water is boiled in a kettle and steam formed is condensed into water by a cold object such as a bottle containing very cold water

Parts of the demonstration

- (i) Shot stove (sigiri) represent the sun
- (ii) Cold bottle cools steam into water representing the cold sky that condense water vapors into rain.
- (iii) Example of local process that takes place in the same way is **distillation**

## Importance of rain

- (i) Waters plants to ensure proper growth
- (ii) Provides water for human and domestic animals
- (iii) Soften soil for easy tillage
- (iv) Removes dust from the atmosphere
- (v) Cols the atmosphere

## Dangers of rainfall

- (i) May cause flooding killing animals and destroying crops.
- (ii) Solid water Damages crops
- (iii) Running water damages roads
- (iv) Running water lead to soil erosion
- (v) Heavy rain may soften mountains causing land slides

## Sunshine

### Uses of sunshine

- (i) Provides light for vision
- (ii) Used by plants for photosynthesis
- (iii) Dry harvested crops
- (iv) Dry clothes
- (v) Keep atmosphere warm
- (vi) Helps formation of rain
- (vii) Enables the body to make vitamin D

### Dangers of sunshine

- (i) Causes drying of crops
- (ii) Dries water sources and kills animals with thirst
- (iii) Makes soil hard to cultivate

## Temperature

It is the degree of hotness or coldness of a place.

Both very high and very low temperatures are dangerous to life.

It is measured by a thermometer

### Exercise 3

1. What is the use of an anemometer in a weather station?

**Anemometer measures wind speed**

2. The table below shows weather instrument and what they measure.

Match the items in list **A** and those in list **B**

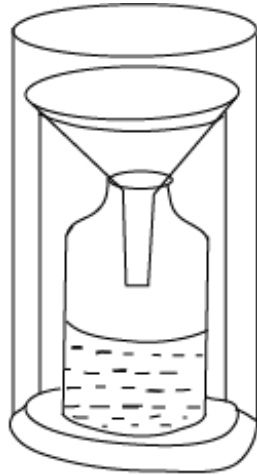
List A	List B
Wind vane	Amount of rain
Barometer	Speed of wind
Rain gauge	Amount of air pressure
Anemometer	Direction of wind

(a) Wind vane: **direction of wind**

(b) Barometer: **amount of air pressure**

- (c) Rain gauge: **amount of rain**
- (d) Anemometer: **speed of wind**

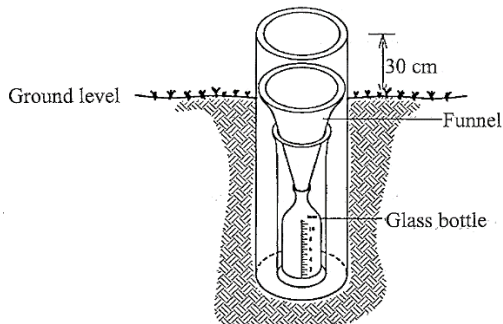
3. The diagram below is a weather instrument  
Study it and answer question that follows



What is the use of the instrument in a weather station?

**To measure amount of rain fall received**

4. The diagram below shows a weather instrument.  
Study and use it to answer the questions that follow



- (a) Name the weather instrument shown in the diagram above  
**Rain gauge**
- (b) What is the use of the instrument above at a weather station?

**To measure the amount of rainfall received in an area**

(c) Give a reason why people are advised to:

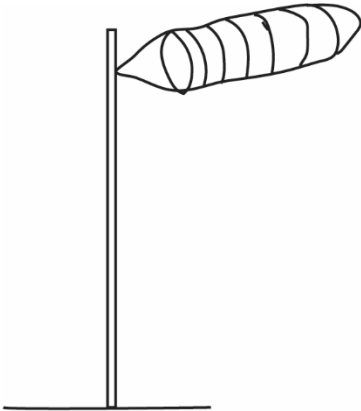
(i) Put the instrument in an open ground when using it

**To get accurate results**

(ii) Raise the instrument 30cm above the ground when using it.

**To prevent running or splashing water from entering**

5. The diagram below is of a weather instrument. Use it to answer the question that follows



What is the use of this instrument at a weather station?

**measures strength of wind and direction of wind**

6. (a) Apart from rainfall, give one other element of weather necessary for plant growth

Sunlight

(b) in which two ways is rainfall important for plant growth?

(i) soften soil to allow roots to penetrate the soil

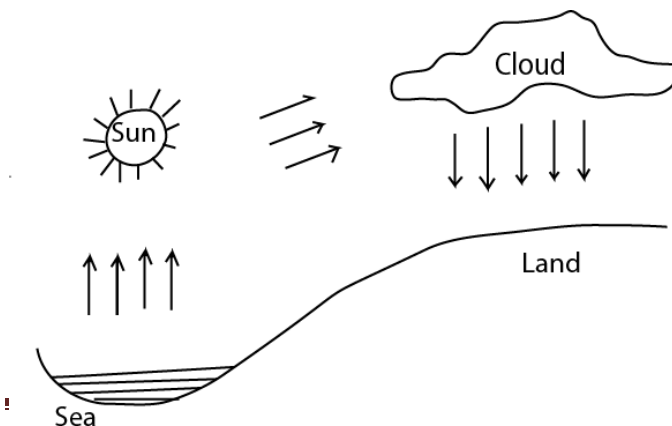
(ii) provided water for photosynthesis

(iii) softens test to allow seed germination

(c) State any one disadvantage of too much rain to the plant

**Cause flooding that causes plant roots and or plants to rot**

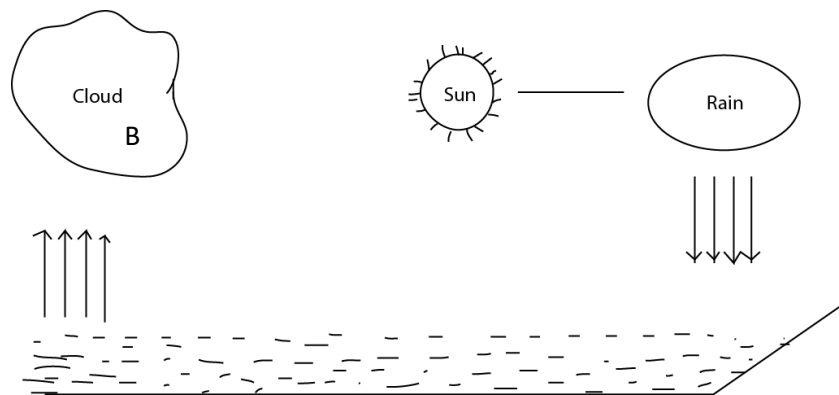
7. The diagram below shows the cycle. Use it to answer 41



Describe how rain is formed.

**When a water body is heated by the sun, evaporation occurs, the vapour rises, and cool to form rain**

8. The diagram below shows how rain is formed. Use it to answer the questions that follow.



- (a) What causes the water vapour to rise from the river as shown in the diagram?  
**Heat from the sun**
- (b) What happens to water vapour at B?  
**It condenses to form cloud**
- (c) Name the force that helps rain to fall.  
**Gravitation force**
- (d) What name is given to the process shown in the diagram?  
**Water cycle**
9. (a) Name one practice which increases the spread of bilharzia.  
**Swimming**  
**Urinate in water**  
**Defecate in water**
- (b) Which vector is important in the spread of bilharzia?  
**Snail**
- (c) Give any two ways of preventing the spread of bilharzia.  
**Avoid swimming in river and ponds**  
**Proper disposal of wastes**  
**Treatment of infected persons**  
**Clearing stagnant water**

10. (a) What is water pollution?

**Adding substance to water which makes unsafe for drinking and inability to support life.**

(b) Suggest any two ways in which a community can improve on water source.

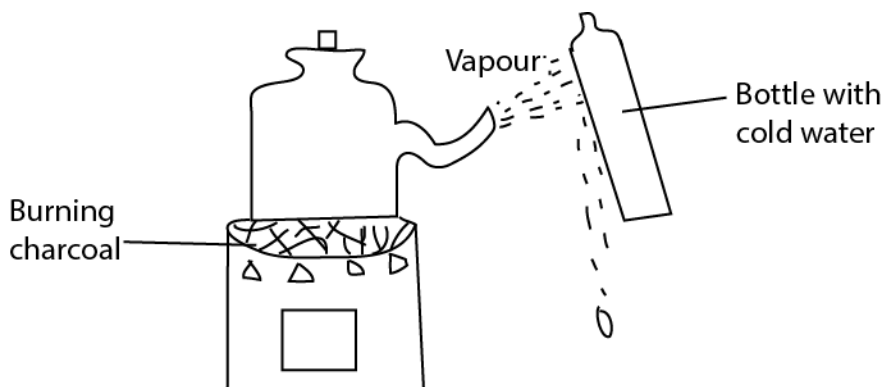
**(i) fence it to prevent stray animals from contaminating it**

**(ii) Digging around the water source**

(c) Why is borehole water safer to drink than well water?

**The borehole water is not exposed like a well's water**

11. The diagram below is of an experiment performed in a class. Study it and answer the question that follow.



(a) What natural process in the environment does this experiment show?

**Formation of rain**

(b) What does a stove (sigiri) represent in the process?

**Sun**

(c) What is the function of the bottle with cold water?

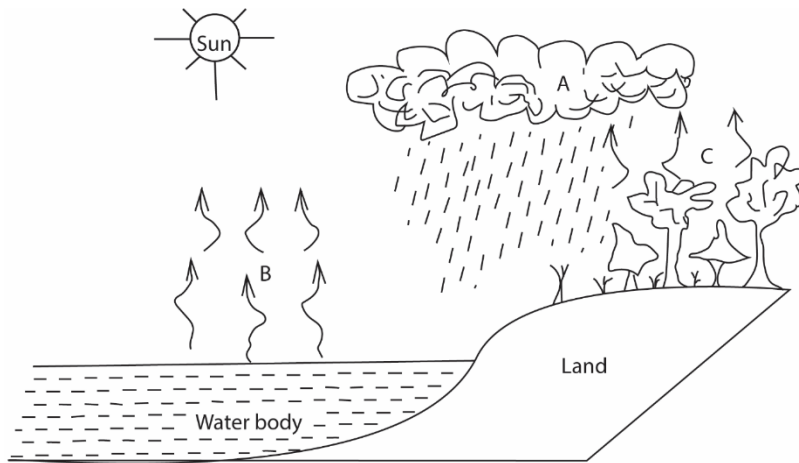
**Condenses the steam to water**

(d) Give any other local process that takes place in the same way.

**Distillation**

12. The diagram below shows a simple method of making water clean

**Study and use it to answer the questions that follow**



(a) Name the type of cloud represented by letter A

**Nimbus cloud**

(b) State the processes taking place at B and C

(i) **B: evaporation**

(ii) **C: Transpiration**

(c) What is the importance of sun in the above diagram?

**Sun provides heat for evaporation and transpiration**

13. The table below shows weather elements, instruments and their uses. Study and complete it correctly.

Element	Instrument	Use
Rainfall	<u>Rain gauge</u>	Measures amount of rainfall
<u>Humidity</u>	Hygrometer	Measures amount of water vapour in atmosphere
Wind	<u>Anemometer</u>	Measures speed of wind
Temperature	Thermometer	<u>Degree of hotness or coldness</u>

14. Apart from rainfall, give one other element of weather necessary for plant growth.

sunlight

(b) In which two ways is rainfall important for plant growth?

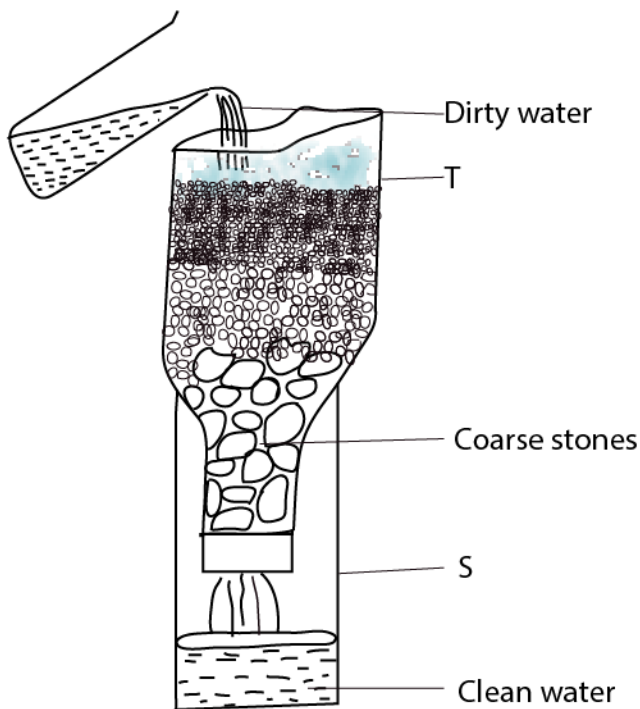
- Provide water for photosynthesis
- Cools the plant
- Softens soil for penetration of roots

(c) State any one disadvantage of too much rainfall to plants.

- Causes flooding reducing air in the soil
- Cause trees to fall

15. The diagram below shows a simple method of making water clean.

Study and use it to answer the questions that follow.



Name the method shown above

Filtration

Apart from the coarse stones, name any two other local materials which are placed in container T.

sand

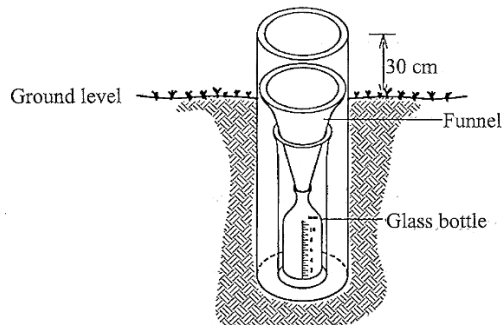
Charcoal powder

Why should the clean water obtained in containers be boiled before drinking?

To kill germs

34. The diagram below shows a weather instrument.

Study and use it to answer the questions that follow



(a) Name the weather instrument shown in the diagram above

Rain gauge

(b) What is the use of the instrument above at a weather station?

To measure the amount of rainfall received in an area

(c) Give a reason why people are advised to:

(iii) Put the instrument in an open ground when using it

To get accurate results

(iv) Raise the instrument 30cm above the ground when using it.

To prevent running or splashing water from entering

**Thank You**

**Dr. Bbosa Science**