2.1.2.1 HOW RAIN FALLS FROM CLOUDS

Keywords

Rain fall	Clouds	Water droplets		Condensation
Water cycle	Evaporation	Precipitation	Dew	Dew point

In basic five we learnt about how clouds are formed in the sky.

Group discussion

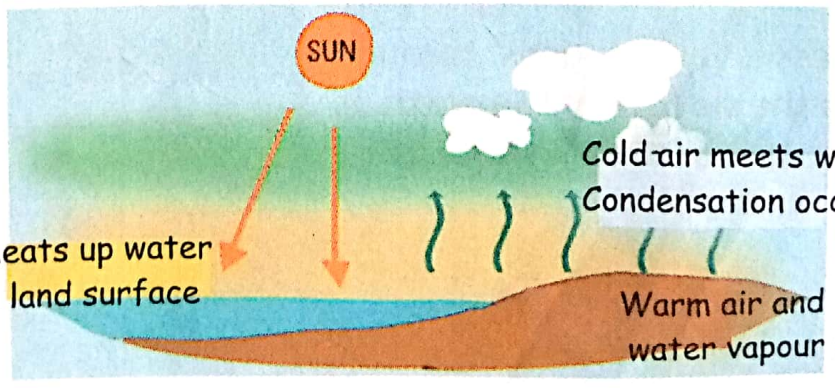
1. What are clouds?
2. Discuss how clouds are formed and share your findings with the class.

We see clouds in the sky everyday. Clouds are made up of a collection of very tiny water droplets.

Clouds float in the sky above us and even block out the sun sometimes. On some days, the clouds are white and puffy. On other days they are dark and they cover the entire sky.

How do clouds form in the sky?

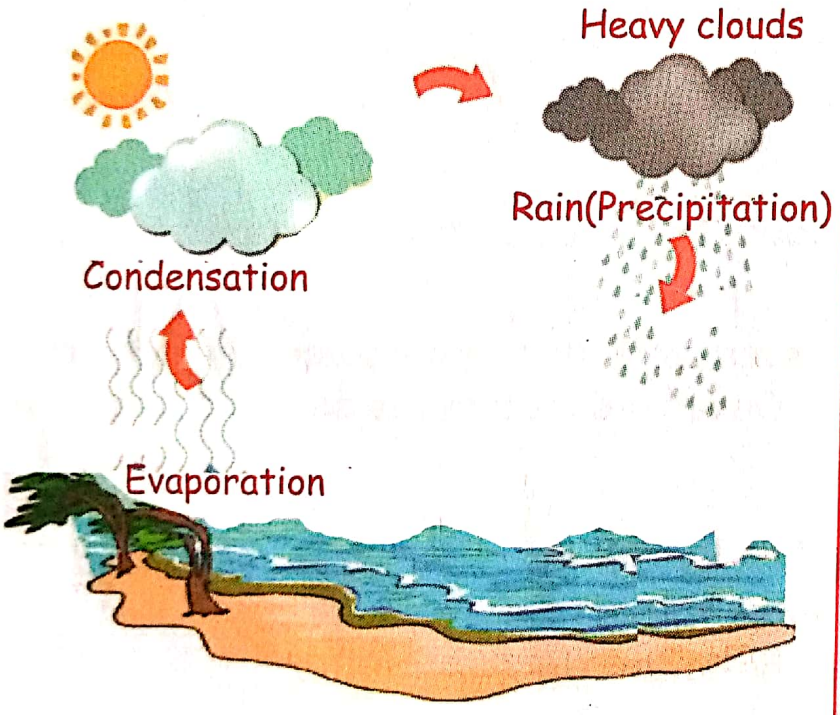
Clouds form by a process called condensation.
Take a look at the diagram below. It shows how clouds are formed.



When the sun shines, it warms up the land and water bodies.
When water vapour from heated water bodies and warm air from the land rises upwards, they meet cold air in the atmosphere .The cold air in the sky cools the water vapour and the warm air to become water droplets. As more water droplets form in the atmosphere, they gather to form clouds.

How does rain fall from clouds?

Have you ever wondered how rain falls from clouds?
Before rain falls, water goes through a cycle called the Water Cycle.
In this lesson, we shall learn how the water cycle works.



There are processes water goes through before it falls on the surface of the earth as rain.These processes are: Evaporation, Condensation and precipitation.

POEM

WHAT GOES ROUND AND ROUND AND ROUND?

The water cycle goes round and round and round
Water gets heated up by the SUN and RISES into the sky
- **Evaporation**

Water vapour in the sky gets COLD and forms CLOUDS
- **Condensation**

Water DROPLETS in the clouds fall BACK down as RAIN (Precipitation)

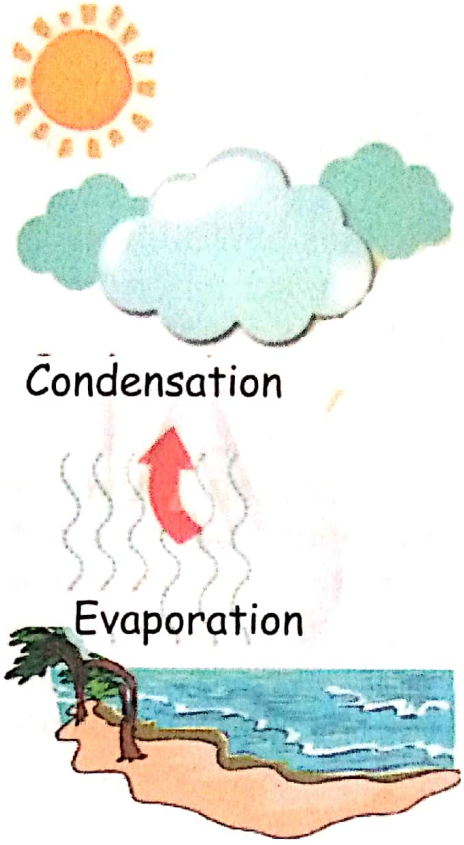
Water cycle goes round and round all over the earth.

Evaporation

Before evaporation can take place, there must be heat.

When the sun shines, it heats up water bodies such as lakes, rivers, lagoons and the sea. When water bodies get heated up by the sun, water vapour (gas) rises into the sky. This process is called evaporation.

Evaporation is defined as the process by which liquid changes into gas when heat is applied.



Condensation

When the water vapour (gas) evaporates into the sky, it cools and changes back into tiny water droplets (liquid). As more and more water droplets form in the sky, they join together and form clouds.

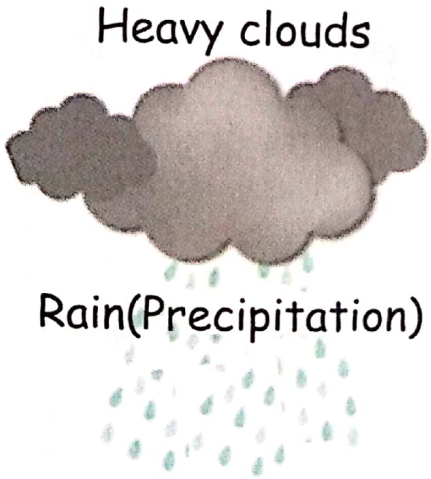
This process is known as condensation.

Condensation can be defined as the process by which gas changes into liquid by cooling.

Precipitation

When the water droplets in the clouds get cooler and cooler, they become heavy. When they are too heavy for the clouds to hold, they are pulled down towards the surface of the earth by the force of gravity and they fall down as RAIN (Precipitation). Precipitation can either be in a form of a liquid or solid (ice) depending on the temperature in the atmosphere.

The different types of precipitation are liquid rain, snow, sleet and hail.



DEW POINT

When we wake up early in the morning, we usually see the surfaces of leaves, grasses and cars wet even though it has not rained. These tiny drops of water are called **dew.**

Dew does not fall from the clouds like rain. It is formed when water vapour in the air condenses on cold surfaces on the ground.

This is what happens;

During the night, the temperature in the air drops and becomes cold. Since cold air cannot hold as much water vapor as warm air, the water vapor in the air begins to condense into water droplets.

These water droplets gather on the surfaces of cold objects which form dew.

Dew point is the temperature at which water vapour in the air condenses into water droplets (liquid dew).

Not all clouds result in rainfall.

There are different types of clouds that form in the sky. Not all these clouds result in rainfall. Some clouds produce rain while others do not produce rain.

Clouds that result in rainfall, contain heavy water droplets that form dark clouds. The heavy water droplets are easily pulled to the surface of the earth by force of gravity as rain. These clouds are also formed close to the ground.

Clouds that do not result in rainfall are usually light and are high up in the sky. They are also formed high up in the sky.

Heavy and dark clouds

PROJECT

In an activity, design a model showing the formation of raindrops around tiny spots of dust or smoke and falling from high parts of a cloud.