9

Land

Read :

Maganbhai after taking his dinner sat for watching T.V. The Baby Zeel came running to him. She said, "Grandfather, tell me a story."

"Which story do you want to listen?" grandfather asked.

"The one which I enjoy the most." Zeel said.

O.K. said the grandfather and began the story.

Story :

There was a small village. A potter named Maganbhai stayed here. Everyday he brings soil from the lake and prepares pots, bowls etc. One day he prepared a small pot. He painted it colorful. The pot looked very beautiful now. He kept the pot in his shop for sale. The next day, Rameshbhai was passing near by his shop. He saw the pot and immediately purchased it. His daughter became extremely happy after seeing this small pot in Rameshbhai's hand. She said, "Papa I will fill water in this small pot."

O.K., said Rameshbhai.

Now, everyday Bindia fills water using this small pot. One day the pot slipped from her hands. It fell down and broken in to pieces. Heartbroken Bindia collected the pieces and kept them behind the house.

The grandfather asked, "Now tell me dear, what would have happen to those pieces"?

Some girls like me must have used them for playing games, replied Zeel.

You are correct, these pieces are mixed again with the soil.

Hearing this, confused Zeel asked, what other things get mixed in the soil.

Activity-1 :

- **What do we need ?**
  - Spade, sieve for sieving wheat, sieve for sieving wheat flour, thin cotton cloth, lumps of soil.
- **What to do?**
  - Take one lump of soil. Turn it into small particle size. Sieve it through the wheat sieving sieve. What is left in the sieve? Observe it and note.
  - Keep the component left in the sieve separately.

Sieved soil through wheat sieving sieve

What is left in the sieve?	What is sieved out of sieve?

Sieved part through wheat sieving sieve

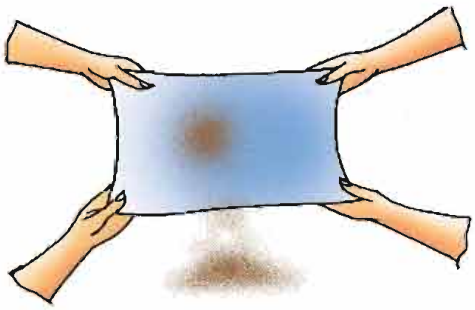
Activity-2 :

- Collect the sieved part and sieve it with the sieve used for sieving flour.
- What is left in the sieve? Observe.
- Keep the component left in the sieve separately.

What is left in the sieve?	What is sieved out of sieve?

Activity-3 :

- Collect the second time filtered soil and sieve it through the cotton piece.
- What is left on in the cloth? Also observe the filtered component and note.
- Separate the component left in the cloth from those filtered from the cloth.



Sieved soil through cotton piece

What is left in the cloth?	What is filtered out of the cloth?

Observation :

Observe the filtered and left over components for first, second and third time.

Think and Say :

- Which components are obtained after sieving the soil with different sieve size?
- Can there be any other components present in the soil.
- How do the amounts of different components affect the type of soil?

Activity-4 :

- **What do we need?**
  - Transparent plastic bag, transparent glass, spade, lump of soil, thread
- **What will you do?**
  - Bring three-four lumps of soil from the nearby farm, from one feet depth by digging with spade.
  - Keep one-two lumps of soil in the transparent plastic bag and tie its mouth with thread. Now keep this plastic bag in sunlight for some time.
  - After some time bring it to the class and observe.

Keep transparent plastic bag in sunlight within a lump of soil in it.

What to observe?	What did you observe?
The inner wall of the plastic bag	

Activity-5 :

- Take a transparent glass. Fill it with water.
- Now add a lump of soil to the glass. Observe what happens.

Where to observe?	What did you observe?
In the transparent vessel, on and near the soil lump	

In transparent glass lump of soil...

Remember and Write :

- Which different things are obtained after digging the soil?

- Which organisms are found in the soil?

- Which different components of soil can be seen separately?

- **Leaves, feathers, parts of living organisms are seen. These are living components.**
- **Sand, stones, clay etc are non-living components.**

Write :

- Components of soil

Biotic components	Abiotic components

It is True :

- Marble, coal, graphite, diamond, gypsum, calcium, petroleum (diesel, petrol, kerosene, gas) etc. are obtained from soil. Is any such thing obtained nearby you?
- Metals like gold, silver, mercury, copper, iron are also obtained from soil. From where are they obtained?

Observation :

- ◯ Circle the correct information:

Varieties of soil	Samples of different types of soil in your area				
	River/canal	Lake	Field	Sloping field	Garden
Colour of soil	Red Brown Black	Red Brown Black	Red Brown Black	Red Brown Black	Red Brown Black
Amount of pebbles	High Medium Low	High Medium Low	High Medium Low	High Medium Low	High Medium Low
Amount of sand	High Medium Low	High Medium Low	High Medium Low	High Medium Low	High Medium Low
Amount of clay	High Medium Low	High Medium Low	High Medium Low	High Medium Low	High Medium Low
Amount of loam	High Medium Low	High Medium Low	High Medium Low	High Medium Low	High Medium Low
Amount of organic matter	High Medium Low	High Medium Low	High Medium Low	High Medium Low	High Medium Low
Type of soil based on its components	Sandy soil Clayey soil Loamy soil	Sandy soil Clayey soil Loamy soil	Sandy soil Clayey soil Loamy soil	Sandy soil Clayey soil Loamy soil	Sandy soil Clayey soil Loamy soil

Read :

Based on the colour of the soil	Based on the components of the soil

(1) Types of soil on the basis of colour : Generally the soil can be classified on the basis of its colour. Soil which is red in colour is known as red soil, if black in colour then black soil and if brown in colour, it is known as brown soil.

(2) Types of soil on the basis of its components :

- **Sandy soil :** The soil having large amount of sand particles is known as sandy soil. The particles of such type of soil get separated easily. The soil dries soon after the rain.
- **Clayey soil :** The soil having large amount of clay particles is known as clayey soil. During rain this soil becomes sticky and slippery. In dry season the soil becomes very hard and cracks are developed.
- **Alluvial soil :** The soil having large amount of organic matter is known as alluvial soil. Alluvial soil is fertile.

Read and Write :

- What are the different types of soil?
  - _____
  - _____
  - _____
- On which type of soil water is not seen after it rains?
  - _____
- Which type of soil becomes sticky and slippery after it rains?
  - _____
- Which type of soil is more fertile?
  - _____

Activity :

- **What do we need?**
  - Three transparent bottles, three plastic or glass funnels
  - Three pieces of cotton cloth
  - Water, sandy, clayey and loamy soil

(Sandy Soil) (Clayey Soil) (Alluvial Soil)

- **What will you do?**
  - Take samples of sandy, clayey and alluvial soil.
  - Take three transparent bottles of equal size.
  - Label one bottle with sand, other with clay and third with alluvian.
  - Keep three funnels on the mouth of the bottle. Keep wet cotton clothes in them.
  - According to the labels on the bottles put equal quantity of soil in the funnels.
  - Add equal quantity of water to each funnel.

Observation:

- Tick (✓) against the right options :

Types of soil / Observation	Sandy soil			Clayey soil			Alluvial soil		
Rate of flow of water	Fast	Medium	Slow	Fast	Medium	Slow	Fast	Medium	Slow
Level of water in bottle	More	Medium	Less	More	Medium	Less	More	Medium	Less
Amount of water left in the funnel	More	Medium	Less	More	Medium	Less	More	Medium	Less

Read :

The capacity of the soil to hold water for a longer period is known as water holding capacity of the soil. The capacity of the soil to drain out water is known as water draining capacity of the soil. Different soils have different water holding and water draining capacity.

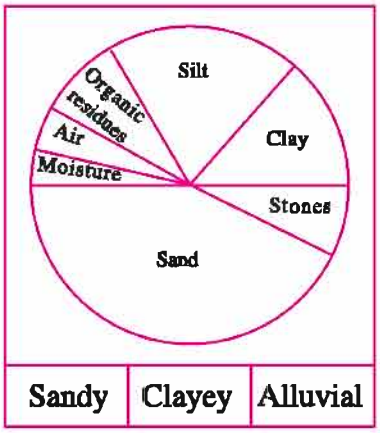
Think and Say :

- Why does water drain fast in sandy soil?
- Why does water drain slow in clayey soil?
- Why is more water stored in alluvial soil?

Fill in the colours :

- In the given circle, fill in different colours of your choice.
- Based on the amount of components shown here, mention type of soil.
- Tick (✓) the correct option from those given below the diagram.

(1)



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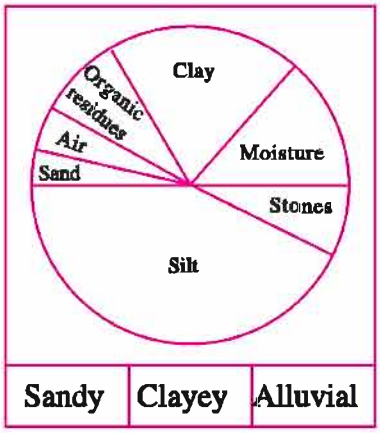

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