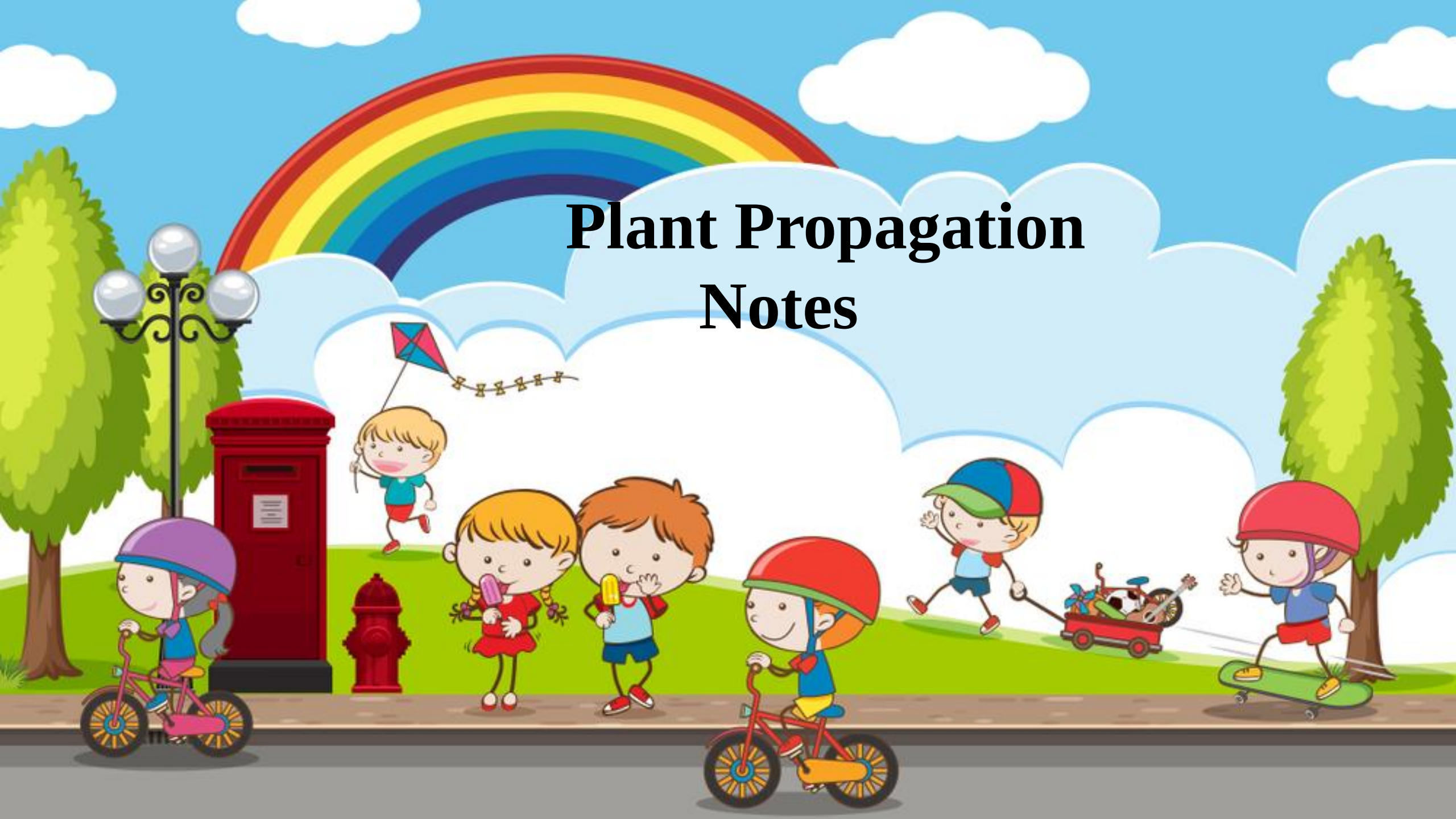


Plant Propagation Notes

In the previous chapter, we have studied that plants are the essential part of our food. Almost every organism depends directly or indirectly on the plants for its food. Cereals, pulses, vegetables, fruits,

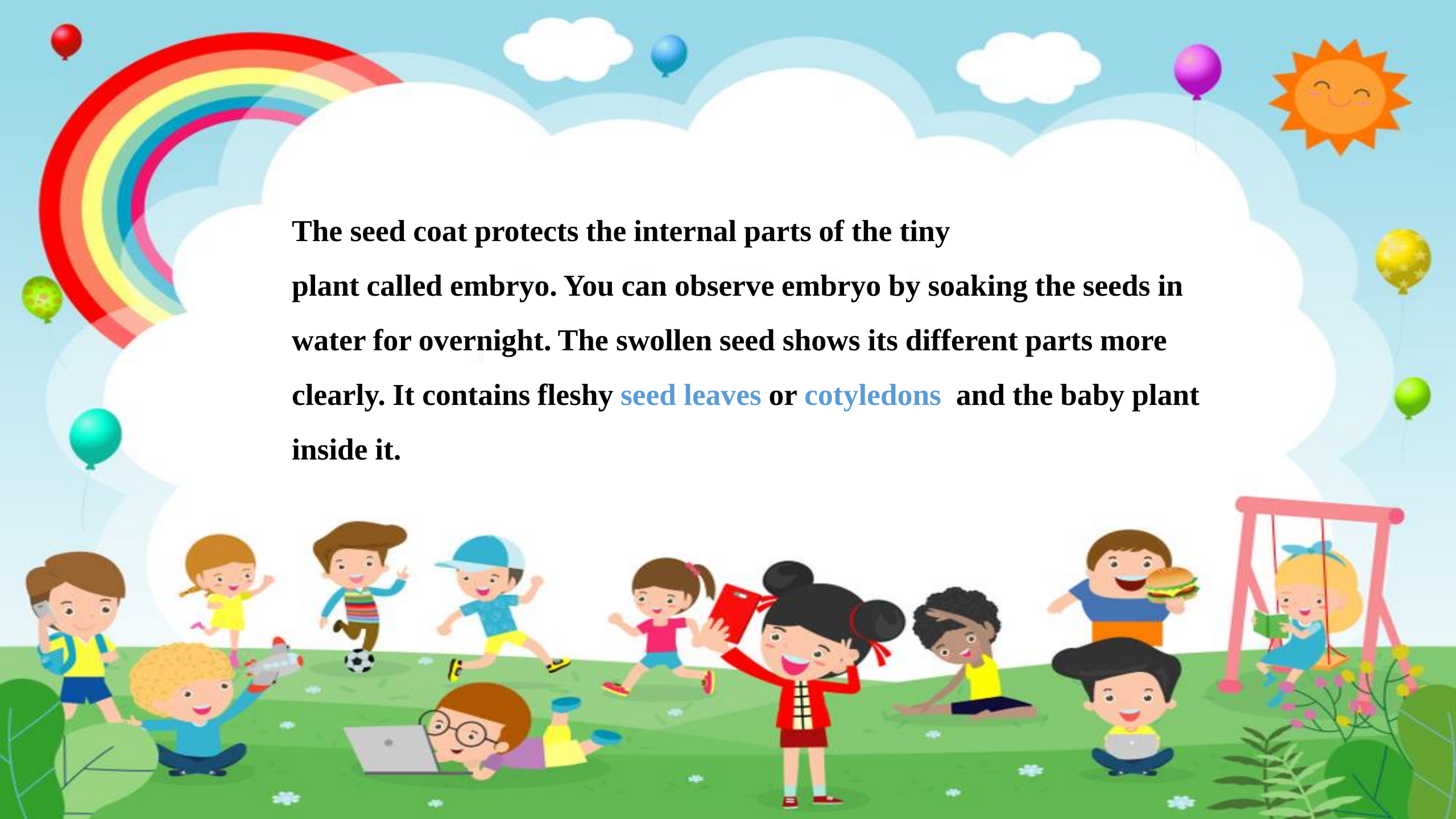
sugar and oils are obtained from the plants. Besides food products, plants also provide wood, fiber, rubber, gum etc. to us, which have industrial value. Plants also supply us oxygen and help to reduce soil erosion.

We can say that life on earth is totally dependent on the plants. For this reason, it becomes

necessary to grow more and more plants. To meet our needs, the continuous supply of plant products is important and that would be possible only if the number of plants increases.

SEEDS

Why there are seeds in the fruits? This is because most of the new plants grow from the seeds. But how do seeds produce new plants ? To know this, let us first know about the parts of a seed. If you observe a seed carefully you will observe that it is covered in a hard covering called seed coat.



The seed coat protects the internal parts of the tiny plant called embryo. You can observe embryo by soaking the seeds in water for overnight. The swollen seed shows its different parts more clearly. It contains fleshy seed leaves or cotyledons and the baby plant inside it.

Structure of a seed

All seeds do not produce new plants. Some seeds separate from the mother plant undeveloped. Some are eaten by the birds or animals or are destroyed by wind or rain. Some do not get appropriate environment like soil, air, water. These seeds are not able to produce new plants.

Only those seeds which get favorable conditions for their growth, grow as new plants.

Germination of Seeds

The change of a seed into a Seedling (new plant) is known as germination. There are some conditions which are necessary for the germination of a seed. Air, water, soil and sunlight are required for germination. Seeds will not be able to germinate even if one condition is absent. Therefore all the conditions are equally important for seeds to germinate.

When all the suitable conditions are present, seed starts germinating.

It sprouts and tiny root comes out from the soft seed coat. After that, shoot

Germination in a seed

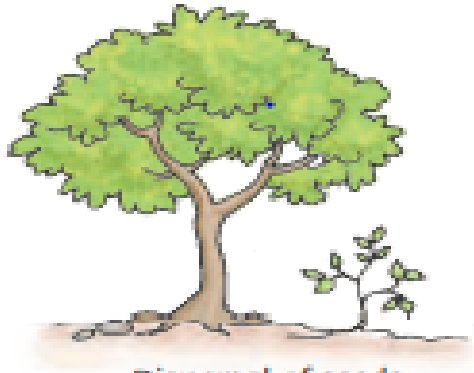
also grows and produces stem and leaves. Root grows downwards under the ground and shoot upwards towards sunlight. The seedling grows fully and develops into a plant.

Dispersal of Seeds

Dispersal of seeds is important for the production of new plants.

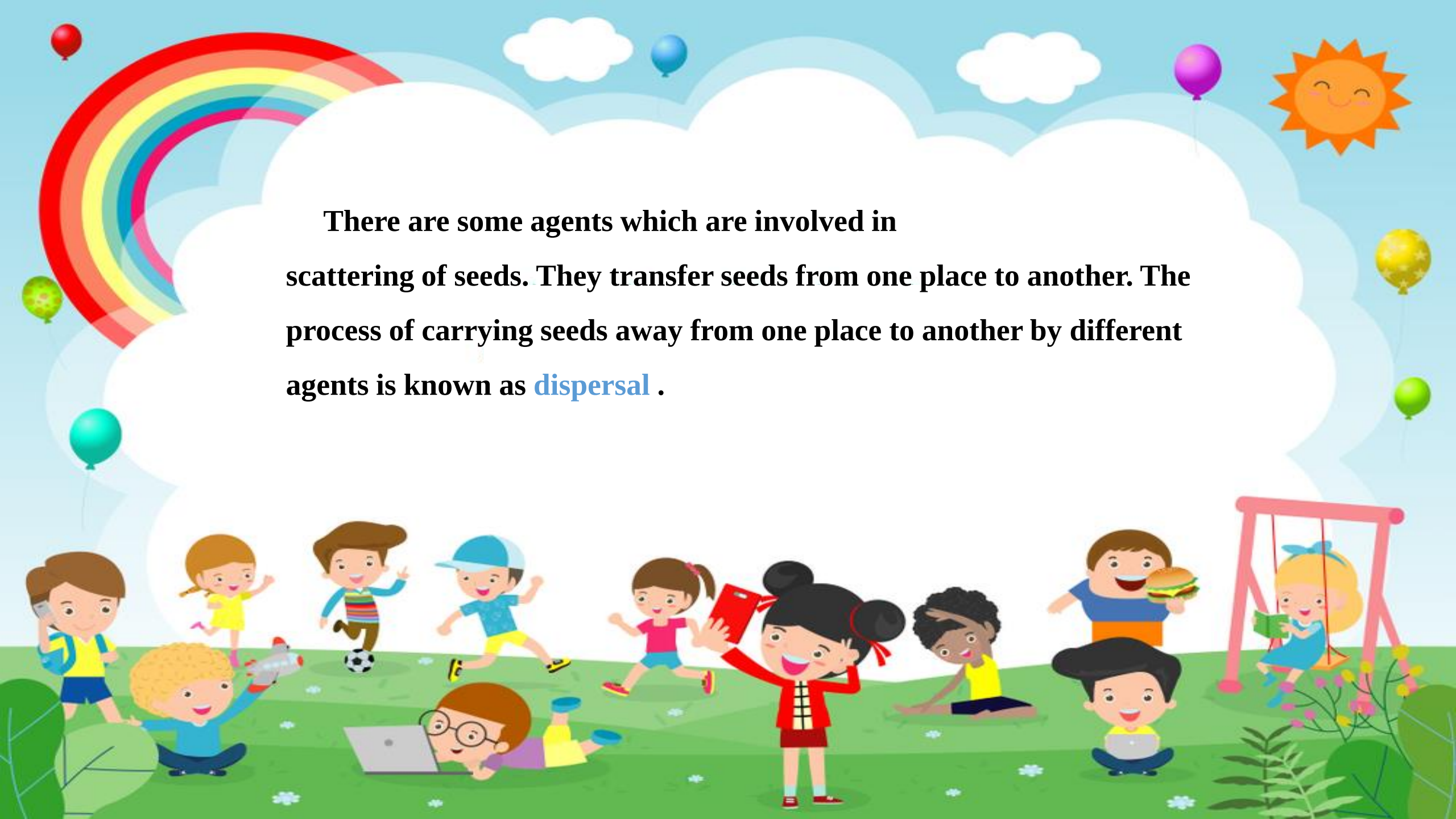
Now, what is the need of dispersal of seeds?

Dispersal of seeds is necessary so that every seed growing into new plant gets sufficient amount of sunlight, water, air, etc. If all plants grow near the parent plant, they will not be able to survive, as they would not get enough food, space, water etc., to grow.



Dispersal of seeds

But plants are stationary and remain fixed to the ground, then how do seeds scatter?

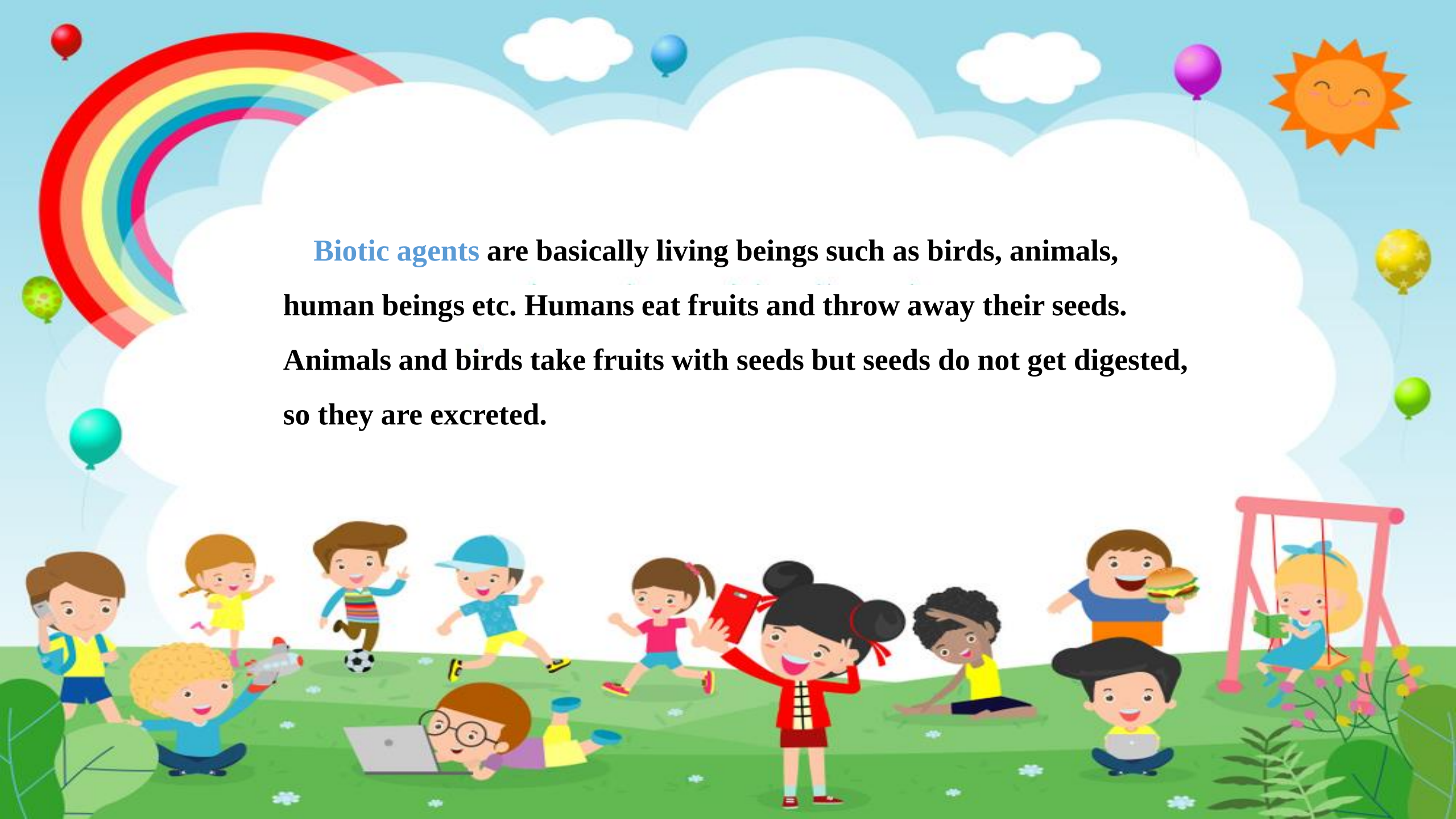


There are some agents which are involved in scattering of seeds. They transfer seeds from one place to another. The process of carrying seeds away from one place to another by different agents is known as dispersal .

Agents of Dispersal of Seeds

There are two types of agents responsible for dispersal of seeds.

These are Biotic and Abiotic.



Biotic agents **are basically living beings such as birds, animals, human beings etc. Humans eat fruits and throw away their seeds. Animals and birds take fruits with seeds but seeds do not get digested, so they are excreted.**

Biotic agents of dispersal

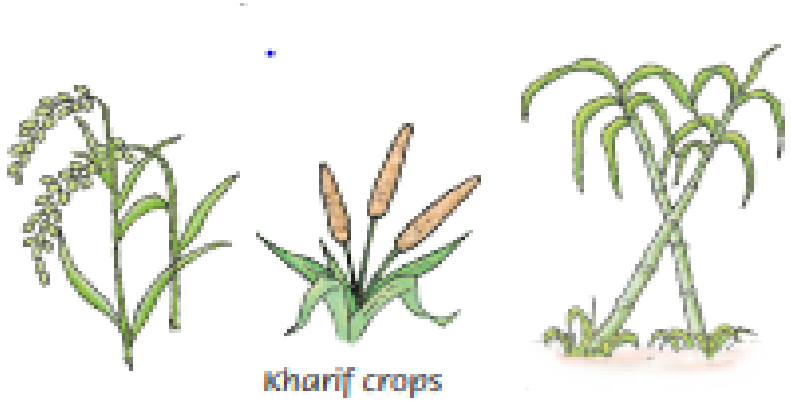
Abiotic agents like wind and water also help in dispersal of seeds.

Seeds which are spongy in nature easily float on water and are dispersed. Seeds which are light in weight can be dispersed through wind.

Wind and Water—Abiotic agents of seed dispersal

KHARIF AND RABI CROPS

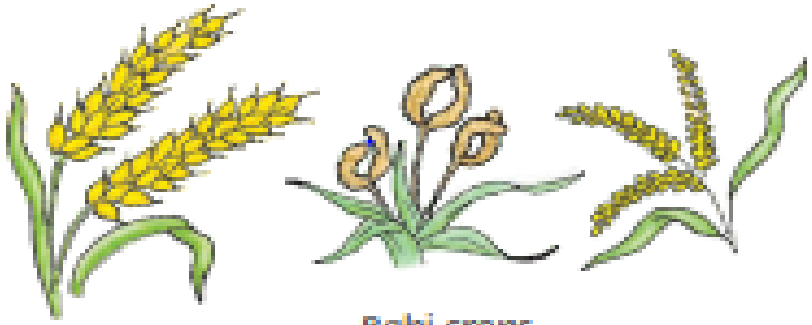
The crops that are sown in the rainy season are called kharif crops.



They are grown from July to September. They are harvested in autumn season.

Maize, pulses, cereals, groundnut and sugarcane are the main kharif crops.

The crops that are sown in the winter season are called rabbi crops. They are grown from November to April in India. The harvesting season of rabbi crops is spring. These are also known as winter crops. Wheat, gram etc. are the rabbi crops.



Rabi crops

Farmer sprinkling pesticides

Farmers use pesticides in the fields to protect crops from insects and pests. Otherwise, insects will harm the yield of crops.

Fact File

- Plants help to reduce soil erosion.
- The development process of a seed into a new plant is known as germination

Things to Remember

- **Air, water and sunlight are required for germination of seed.**
- **Dispersal of seeds is important for the growth of new plants.**
- **Biotic and abiotic agents are responsible for the dispersal of seeds.**
- **Kharif crops are grown in rainy season, whereas rabbi crops are grown in winter.**