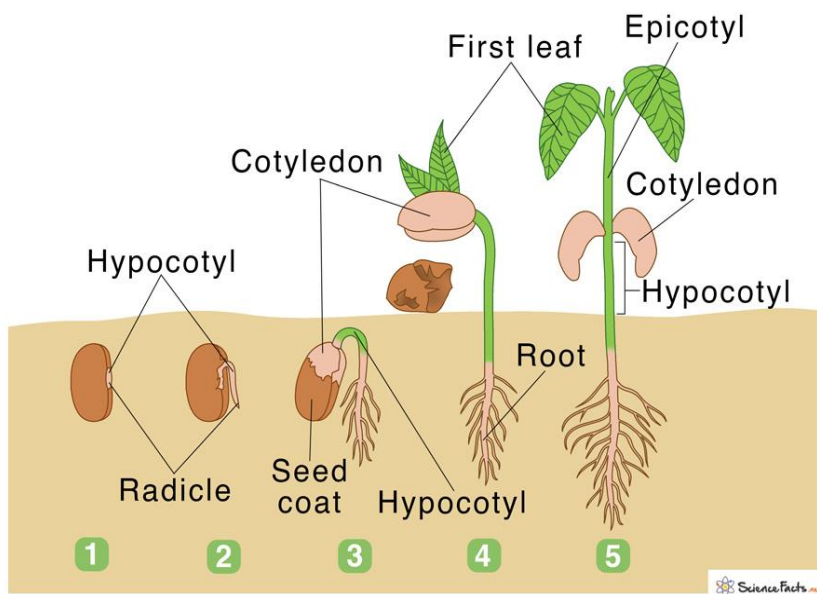


## The Life Cycle of a Plant STA 2021

**1** The life cycle of a typical annual plant can be divided into several stages. The first stage is germination. Seeds remain dormant if they are kept cool and dry. When the amount of moisture and the temperature level are right, the seeds germinate and start growing.

**2** Certain conditions are necessary for germination. One essential condition is that the seeds must be alive. If seeds are dried at a temperature that is too high, they will die. Other conditions for germination concern the amount of moisture in the soil. If dry seeds are planted in a dry soil, they will not germinate until it rains. On the other hand, the seeds will not germinate if the soil contains too much water. This is because wet soils remain cold for longer than drier, well-drained soils, and germination cannot occur if the soil is too cold. Another reason for seeds not germinating is that wet soils may not contain enough oxygen. Dormant seeds require very little oxygen in order to stay alive, but they require more for germination.

### Seed Germination



**3** In the first stage of germination, the primary root (the radicle) emerges from the seed. Then the stem begins to grow upward until it appears above the soil surface. At the same time, the root system grows downward and begins to spread through the soil. In the early stages of its development, the seedling depends on the foodstore contained in the seed (the endosperm), but when the first leaves appear it can produce food for itself by photosynthesis.

**4** Next, the plant enters the stage of rapid growth and begins to grow to its full size. When it is mature enough, it flowers, and then pollination and fertilisation can take

place. In the process of pollination, insects or wind carry pollen from the stamens to the stigma of the carpel. The pollen germinates on the stigma and then grows down the style into the ovary, where fertilisation takes place.

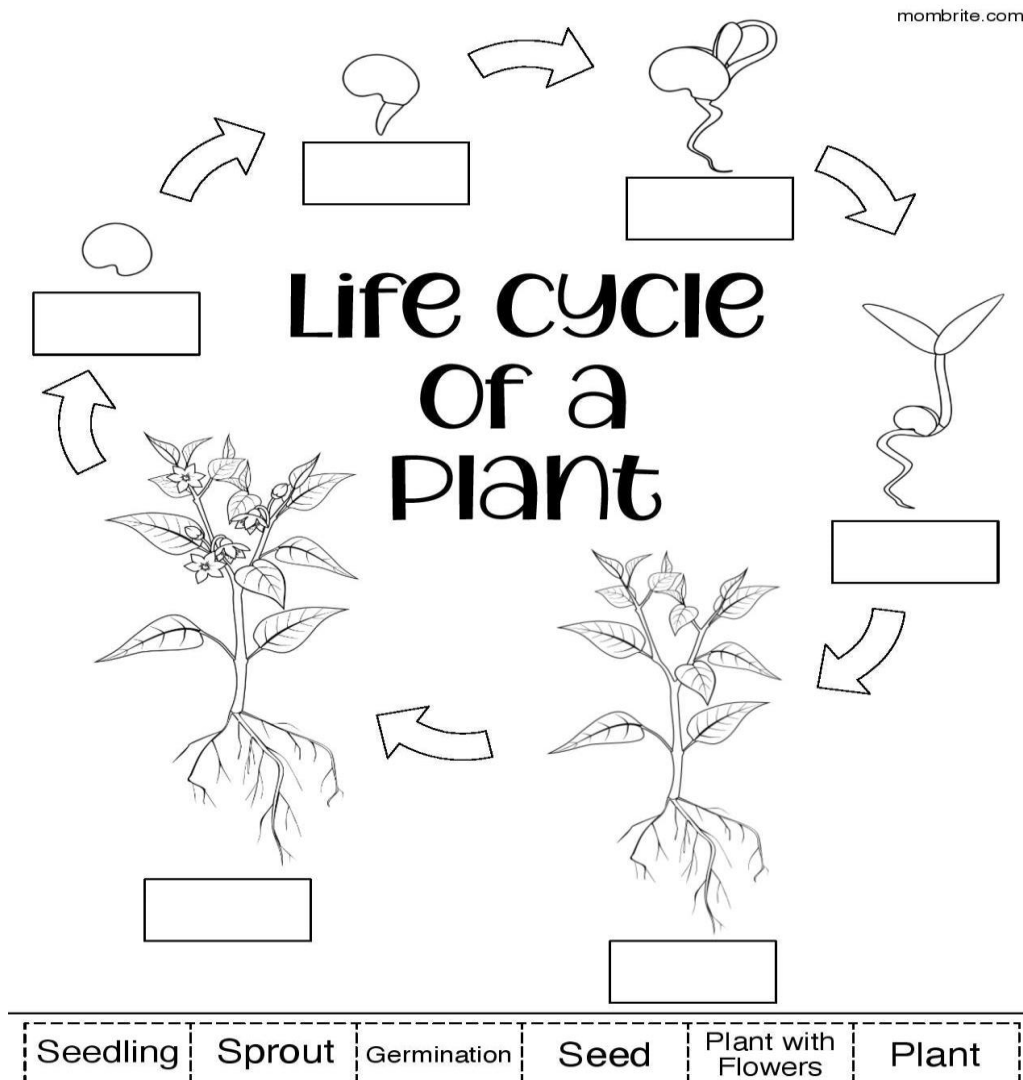
**Exercise A:** Find words in the text with the same meaning

Meaning	Word - synonyms	Meaning	Word - synonyms
1 phases		6 need	
2 humidity		7 to expand	
3 living		8 from low to higher	
4 full of water		9 development	
5 sufficient		10 proportion	

**Exercise B:** True or false? Correct the false sentences

1. Before a seed germinates, it is dormant.
2. A seed can germinate when the temperature level is right.
3. If seeds are dried at an excessively high temperature, they will die.
4. Seeds cannot germinate in a very dry soil.
5. Well-drained soils are colder than wet soils.
6. Dormant seeds need large amounts of oxygen.
7. The stem emerges from the seed after the radicle.
8. The root system grows above the soil surface.
9. The seed nourishes the seedling after the leaves appear.
10. Photosynthesis creates food for the growing plant. True
11. Pollen travels from the stigma to the stamens.
12. Pollen is transported by insects or wind.

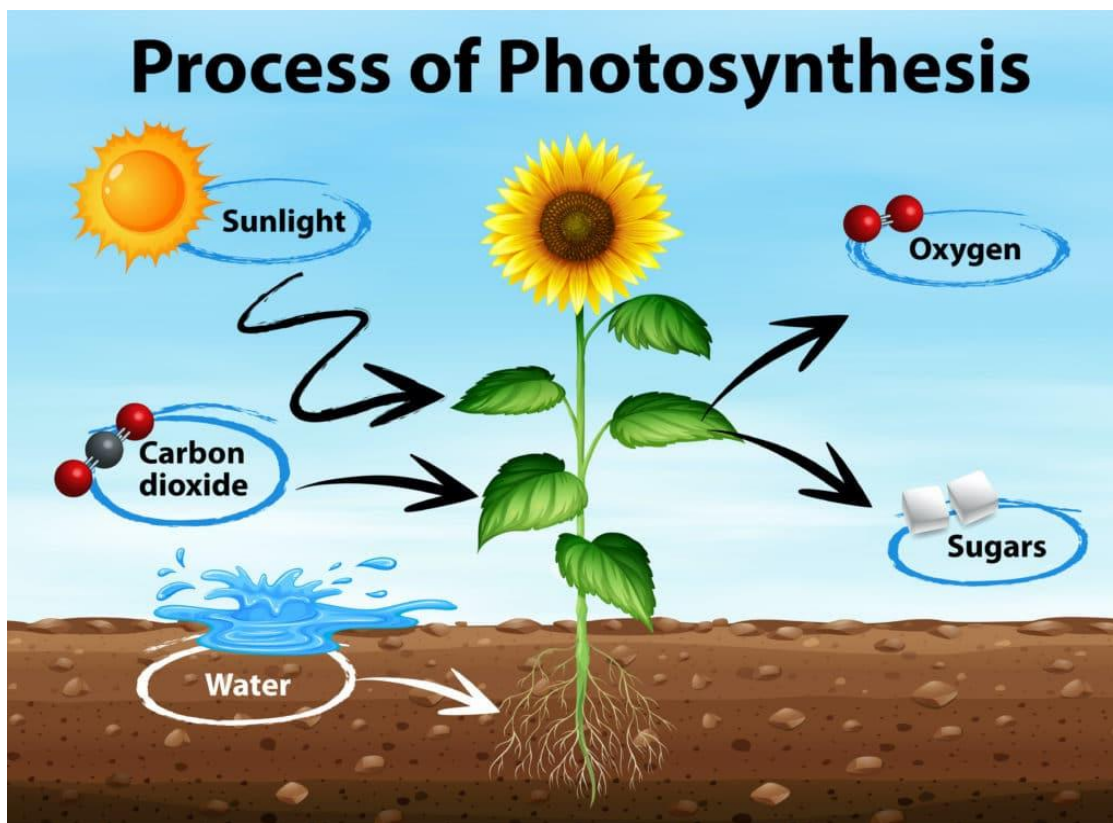
**Exercise C:** Label the diagram below



**Exercise D:** Put the sentences in the correct order to describe the processes

## 1. The Life Cycle of a Plant

- The first stage of plant growth is the germination of the seed. This forms the beginnings of the stem and root systems.
- Fruit and seeds are produced.
- As soon as the stem appears above the ground, photosynthesis begins.
- This is followed by the decay of the vegetative parts.
- The life cycle of a plant is the period during which the plant grows from a seed, flowers and dies. 1**
- When the plant flowers, it is ready for pollination and fertilization.
- The seeds are dispersed by insects or the wind and the plant dies.
- Pollen is transferred from the stamens to the stigma, where it germinates.
- The plant enters the period of rapid growth. During this time, it grows to its full size.



*A sunflower*

## 2. Photosynthesis

- The sunlight provides the energy to bind  $\text{CO}_2$  and  $\text{H}_2\text{O}$  together to form sugars and other carbohydrates.
- Photosynthesis is the process which creates food for the plant.
- Carbohydrates go to the growing points and enlarge plant tissues.
- Oxygen is released as gas.
- This chemical process can be summarized as follows:  $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
- This combines with water in the presence of sunlight.
- Carbon dioxide is absorbed through the leaf cells.
- It begins when the plant grows its first leaves.

**Exercise E:** Answer the questions

1. What name is given to the first stage of plant growth?
2. Are dormant seeds alive or dead?
3. Which part of the plant develops first?
4. Do leaves form above or below the soil surface?
5. What is the plant's first source of nourishment?
6. Why is photosynthesis an important process for plants?
7. What happens during the stage of rapid growth?
8. How does pollen move from one plant to another?
9. Where does pollen germinate?
10. What happens in the ovary?

**Exercise F:** Complete the table

Verb	Noun	Verb	Noun
grow	growth		
develop			
move			
absorb			

1. Plant \_\_\_ depends on soil structure, water and temperature.
2. Larvae are very different in \_\_\_ from adult insect forms.
3. Slow Food is a \_\_\_ of people who appreciate excellent local foods.
4. Insects are responsible for the \_\_\_ of many important crop plants.
5. Seeds will \_\_\_ when the conditions are suitable.
6. Puglia is a region that \_\_\_ cereals, olives and many kinds of vegetables.
7. The roots of a plant \_\_\_ water and minerals from the soil.
8. The \_\_\_ of disease-resistant cultivars is one way to protect crops