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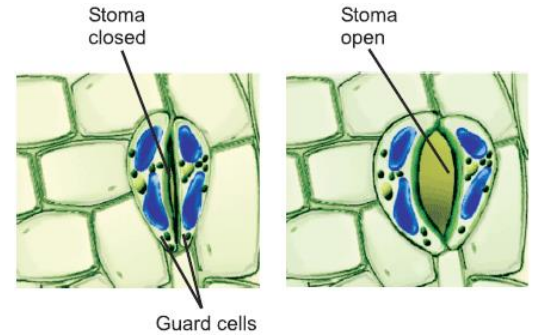


Plants: How much do they have in common with animals?

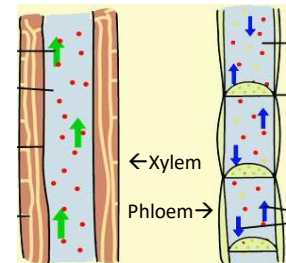
Plants and animals are very different when it comes to classifying the two. But plants and animals also have some characteristics in common. As you read through the following think about what parts of an animal are similar to the parts of the plant being described.

Plants are like animals because both need energy to survive. Plants, however, capture energy from the sun and make their own energy in the form of glucose. Animals can't absorb sunlight to make energy. They need to get their energy from plants. Plants use chloroplasts to convert radiant energy to chemical energy during **photosynthesis**. They take in carbon dioxide through small openings called **stoma** (plural stomata) on the underside of leaves.

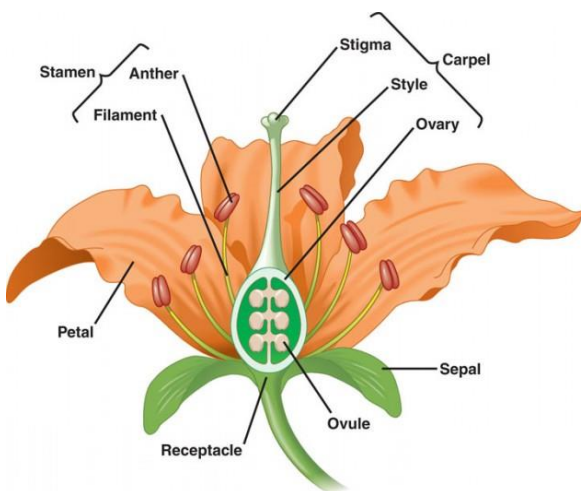
These openings are controlled by two cells on either side called **guard cells**. Their function is to open and close the stomata. Water and oxygen can also leave the plant through these openings if they are open. This loss of water from a plant is called **transpiration**. It's like a plant sweating!



Plants are also like animals because they have a transport system. Plants need to transport water and food. Plants have **vascular tissue** called xylem and phloem. They are tube-like structures that run through the plant. **Xylem** transports water and minerals from the roots up the stems to the leaves. **Phloem** transports food and nutrients from the leaves to the rest of the plant.



Both plants and animals reproduce sexually, this means two gametes combine to form the offspring. In plants, the "male" gamete is the **pollen** and the "female" gamete is an **ovule**. The reproductive organs of a plant are flowers. The flower contains a central structure called a pistil or carpel. This is the female part. (see diagram)



There is a sticky part at the top called a **stigma** that collects the pollen. The pollen then moves down a tube-like structure called a style and into the ovary of the plant. Ovules, made by meiosis, are found in the ovary. The pollen fertilizes the ovules in the ovary to make one embryo or more. Pollen is made through meiosis in the **anther** of the male part of a flower. The male part is called a stamen (see diagram) and consists of a filament stalk that holds the anther up to reach the top of the flower where the pollen can be picked up by an insect or other pollinator. Once the pollen and ovules unite, the embryos become the seeds in a fruit.

Plants also respond to their environment to better survive. An example of response is when a plant grows and bends toward the sun, or roots always growing downward or stems growing upward in response to gravity. Plants have also adapted to their environment. Some of these adaptations are thorns, thick bark, large leaves and even the ability to digest insects for additional minerals and nutrients when they are growing in poor soil.

Vocabulary

Write the bold words found in the article below and define each one.

Term	Definition
1.	
2.	
3.	
4.	
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11.	

Use the article to answer the following questions.

1. How do CO₂ and water enter the plant for photosynthesis?
2. Trace the path of water during transpiration using the following terms: stem, roots, leaves, xylem, stoma.
3. Why would the guard cells open or close stomata?
4. What tissue transports glucose through the plant?
5. How and where are the male and female gametes of a flowering plant made?
6. Trace the path of pollen from anther to ovule in a flower.
7. Why might plants bend toward sunlight?