

The plant life cycle

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Sunflower, *Helianthus annuus*, with a seedling in a ceramic pot. A seedling is a small, young plant. It grows out of the ground and toward the sunlight. Photo: Martin Shields/Science Source

Plants grow in a cycle. The life cycle is all the stages the plant goes through from the beginning of its life until the end. The cycle continues when new plants can begin to grow.

Seeds

The life cycle of flowering plants begins with a seed. The outside of a seed is a shell. Inside is everything needed to start a new plant. There is an embryo, which becomes the new plant. There is also an endosperm, which provides the nutrients for the embryo.

Seeds spread to different places in many ways. The wind blows seeds away, or they float away on water. Birds, bees and other insects carry seeds. Or animals eat seeds and drop them as waste elsewhere. The next phase begins when seeds reach a place where they start growing.

Germination

Seeds need four things to start growing: oxygen, water, sunlight and the right temperature. The seed will begin to sprout when they have enough of these things. This stage is called germination.

First, the roots push through the seed coating. Then, they grow into the soil around them.

Seedlings

A small, young plant called a seedling grows during germination. It grows out of the ground and toward the sunlight because it needs the sun's energy. The chlorophyll that makes leaves green traps that energy. Then, the plant makes food from water and carbon dioxide. This process is called photosynthesis, and it gives plants the energy to grow.

Adult Plant

Seedlings grow into adult plants that have leaves, roots, and a stem. The roots take in nutrients and water from the soil. The stem supports the entire plant. It also carries nutrients from the roots to the rest of the plant.

The flower is the part of a plant that helps continue the life cycle. Flowers make seeds before they spread to grow in their own. The stamen and the pistil are the parts needed to form a seed.

The stamen are long stalks that hold pollen. It is a yellow powder that holds half of the genes needed to create a new plant. The genes from the parent plant control what characteristics a new plant has.

The pistil is usually surrounded by the stamen. The stigma is the top part of the pistil that collects pollen. Ovules are stored inside the pistil. These become the seeds that grow into new plants.

Pollination

Pollination happens when pollen goes into the stigma. Often, insects transport the pollen from one flower to another.

The bright petals on flowers attract bees and butterflies. Insects eat a sweet liquid called nectar from the flowers. They pick up pollen on their legs and body as they crawl around. The insects carry the pollen to other plants.

Pollen has half of the genes a new plant needs. The ovule has the other half. Fertilization is when pollen and the ovule combine. These become seeds, which can grow into a new plant. The cycle continues.

Quiz

- 1 How does the information in the section "Pollination" support the main idea of the article?
 - (A) by highlighting how insects know the difference between nectar and pollen
 - (B) by providing an example of an insect flying to a plant to pollinate it
 - (C) by explaining how pollination is similar to germination
 - (D) by describing the last stage of the plant life cycle before it starts over

- 2 What is the main idea of the article?
 - (A) There are many important parts of an adult plant that allow pollination to happen.
 - (B) Plants go through a life cycle that continues when new plants begin to grow.
 - (C) All living things go through a life cycle.
 - (D) Germination is when a seed begins to sprout.

- 3 How do seeds spread to different places?
 - (A) They reach places where they start growing.
 - (B) They depend on humans to spread them across an area.
 - (C) They rely on wind, water and animals to carry them.
 - (D) They use the sunlight to begin to sprout.

- 4 Which stage of the plant life cycle is caused by insects?
 - (A) germination
 - (B) seedlings
 - (C) adult plant
 - (D) pollination