

## The Life Cycle of a Plant



### New plant life

All living things pass through stages from birth to adult called a life cycle. For many living things, the cycle of life follows the four seasons of the year. For some living things, the cycle of life is short and is completed in just days, months, or a single year. For other living things, the cycle of life continues for many, many years.

### Flowering plants

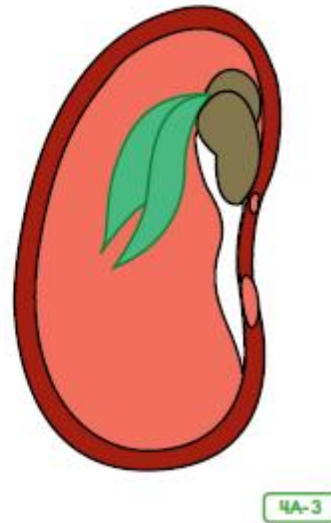
Today you will learn about the life cycle of a flowering plant. Just think about all the flowering plants you see in the parks, yards, gardens, fields, and meadows. Our world is awash with colorful, vibrant flowering plants. How do these plants grow and **reproduce**, or make seeds for new plants? Let's find out.



## Germination

A flowering plant begins its life cycle as a seed. Seeds need special conditions to germinate, or begin to grow. Spring provides seeds with the right conditions to grow. Therefore, the life cycle of a flowering plant begins in spring.

In spring, there is more sunlight and temperatures are warmer. Seeds need just the right amount of light from the sun, nutrients from the soil, and water in order to grow. Once the seed germinates, or sprouts, it grows and develops into a young plant with roots, a stem, and leaves. The first leaves unfold to allow photosynthesis to begin. Photosynthesis is the process by which plants make their own food, as well as oxygen. Plants use sunlight and water to make food in the form of glucose, a type of sugar.



## Interior of flower



In the warmth of spring and summer, plants continue to grow. The young plant is called a seedling. Gradually, a plant's stem will grow taller and true leaves will **emerge**. Once the plant matures, or become an adult plant, flowers appear.

In order for a flowering plant to reproduce, or produce seeds that will make new flowering plants, it must be pollinated. Pollination is when pollen from one flower mixes with the pollen of another flower so that the plant can make seeds. But how is pollen transferred from one place to another? In other words, how does pollination occur? Flowering plants need **pollinators** to help them with pollination. Pollinators are insects, birds, and other animals that are **attracted** to the shape, fragrance, or color of a flower. Without pollinators, most flowering plants would not produce seeds and fruit.

## Insect pollinators



There are many types of pollinators, such as birds and small mammals, but insects are the number-one pollinators of flowering plants. The flowers of a flowering plant are designed to attract various pollinators, especially insects. The shape, fragrance, and color of the flower, as well as the sweet-tasting nectar contained within the flower itself, attract many different kinds of insects. As insects move from flower to flower, the sticky substance called pollen clings to their bodies and is transferred, not only within a flower, but from flower to flower.

Honeybees are the most common pollinators. They carry out more pollination than any other insect. Some scientists think that bees are attracted to bright blue and violet-colored flowers, whereas butterflies like fragrant yellow, pink, red, and orange flowers. Butterflies also like wide petals so that they can settle on them while they drink the sweet nectar.

## Mammal and bird pollinators



Birds are important pollinators, too, especially of wildflowers. For example, hummingbirds have perfectly designed beaks that can reach the nectar inside long, tubular-shaped flowers. There are more than 2,000 different kinds of birds in the world that feed on nectar. Birds have a poor sense of smell and help to pollinate unscented flowering plants because they are attracted by the color and shape of the flowers.

A variety of small mammals pollinate flowering plants. Mice, shrews, and rats—even tree-dwelling animals such as lemurs and small monkeys—can help to transfer pollen. People also help the pollination process. Often, when people are working in their flower gardens, the sticky pollen is accidentally carried from flower to flower.

For some plants, pollination does not just occur during the daytime. Some scented flowers attract nighttime pollinators such as bats and moths.

Although ninety percent of flowering plants are pollinated by animals, especially insects, the wind and even water can play a part, too. Pollen is carried by the wind. Flowering plants that live in water, such as lilies, can be pollinated as the water carries the pollen from one plant to another.

Once pollen has been transferred and reaches the new plant, the flower produces seeds. The next part of the process is called seed dispersal. This is the process of carrying the seeds away from the parent plant so that the flowering plant life cycle can begin all over again.

## Seed dispersal



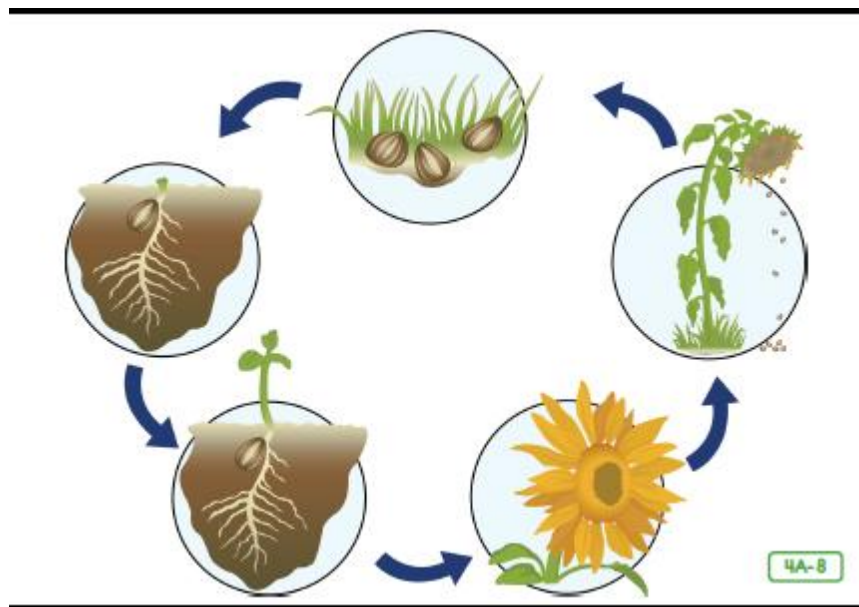
Just like pollination, there are various ways that seeds can be dispersed, or spread apart in different directions. Many flowering plant seeds are carried away from the parent plant by the wind. As the wind blows, the seeds are carried up into the air. Some flowering plants have pods, or capsules, that explode, sending forth a burst of tiny seeds into the air. Other flowering plants drop their seeds into rivers and streams, and the seeds are carried along to their new home.

Sometimes animals carry seeds from place to place without knowing it. Some seeds contained within a **protective** casing can attach themselves to the fur of passing animals. The protective casing will eventually fall off the animal and rest in the soil, ready to begin the life cycle process.

Some seeds are contained within a fruit that animals like to eat. Animals either spit the seeds out, or they eat them, and the seeds reach the earth in the animal droppings that are left behind. Once on the ground, they rest in the soil until the germination process can begin again the following spring.

### Seed to seed

All of this is happening around us in spring, summer, and early autumn. The potential for new life is being created as flowering plants are pollinated and seeds are dispersed. Across the world, the life cycle of flowering plants is renewed, or happens again, each year.



Creative Commons Licensing This work is licensed under a Creative Commons AttributionNonCommercial-ShareAlike 3.0 Unported License. You are free: to Share — to copy, distribute and transmit the work to Remix — to adapt the work Under the following conditions: Attribution — You must attribute the work in the following manner: This work is based on an original work of the Core Knowledge® Foundation made available through licensing under a Creative Commons Attribution-NonCommercialShareAlike 3.0 Unported License. This does not in any way imply that the Core Knowledge Foundation endorses this work. Noncommercial — You may not use this work for commercial purposes. Share Alike — If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one. With the understanding that: For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page: <http://creativecommons.org/licenses/by-nc-sa/3.0/>