

Wildflower Exploration: Directions for Wildflower Life Cycle Activity

Materials: You need colored pencils or crayons for this activity. Also print the [Life Cycle of a Perennial Wildflower](#) activity sheet below.

Teacher directed questions and discussions:

In this activity, we are going to think about a flowering plant, its life cycle stages, and strategies it uses to help it survive in our Northeast climate.

Life Cycle - This is the study of a wildflower life cycle. What do you think of when you hear the words life cycle? Life is something that is living. Cycle you know from bicycle—2 round wheels that cycle around and around. What is the shape of the diagram on your activity sheet?

Dormancy - Move clockwise in your activity sheet to find the next section, **Plant Dormancy**. Do you know what dormancy means? It has the same root as dormitory—a place where students sleep. When a plant is not actively growing, it is said to be dormant or in dormancy. Woodland wildflowers in the Northeast are dormant over the winter season. The underground parts are still alive, and are well-protected in winter. What are they protected from? They are protected from extreme temperature changes and animals like deer that might eat them if they were above ground. This diagram shows our native wildflower called bloodroot with its dormant underground stem that has roots growing from it. This underground structure contains stored food for the plant.

Sprouting - Move clockwise to find **Plant Sprouting** on your activity sheet, the next stage in the life cycle. When warming temperatures start plant growth again in the spring, plants with food stored underground are able to grow rapidly. A plant starting from a seed has a smaller amount of food stored in that seed and therefore does not grow as fast. Many of our Northeast woodland wildflowers use a strategy of storing food underground. Therefore, they can grow quickly in the spring, capturing sunlight before tree leaves shade the wildflowers. What color do you think the new sprout would be?

Leaf Growing - Continue around the circle to find **Leaf Growing**. Green leaves (and stems) can make food using energy from the sun. They use the energy from the sun to make sugars (food) for the plant in a process called photosynthesis.

Flowering - Continue clockwise to find **Flowering**. If a wildflower has enough stored food, it can use energy from this food to make a flower. Why are flowers so important? Flowers develop into a fruit with seeds. These seeds can grow into new plants. Color the bloodroot leaf green so it can make more food for the plant by photosynthesis.

Pollinating - Continue clockwise to find **Pollinating**. Flowering plants produce pollen in the male parts of a flower called stamens. When pollen moves from one flower to another flower of the same kind it is called pollination. In this diagram, a bee is gathering pollen intentionally but will leave some pollen on the next flower by accident. How else can pollen get moved? Pollen can be moved by other insects, birds, bats, mammals, and wind.

Fruit Forming - In the section called **Fruit Forming**, the petals have done their job of attracting pollinators and have fallen off. What is left of the flower is the part called a pistil. The sticky top of the pistil catches pollen grains. The bottom part of the pistil, called an ovary, contains ovules (eggs) that become seeds after fertilization. Fertilization occurs when male cells from pollen travel down tubes to join up with the ovules. After fertilization, the ovary grows and matures into a fruit containing seeds.

Seed Dispersing - In the last section, **Seed Dispersing**, the fruit with seeds inside has matured. If all seeds fall directly underneath their parent plant, there will be lots of competition for light, water, and minerals. Which plant do you think will grow better: a large parent plant or a new little plant? Since plants can't move, they use seed dispersal as a strategy to avoid competition. The movement of seeds away from a parent plant is called seed dispersing or seed dispersal. Any ideas how fruit can help with seed dispersal? A fruit is like a suitcase for seeds, protecting the seeds while moving them away from the parent plant. Bloodroot and many of our wildflowers are dispersed by ants. Their seeds have a special fatty body that attracts ants. When these seeds fall to the ground, ants pick up the seeds and carry them back to the ant colony. The ants eat the fatty body but leave the hard seeds alone. The seeds germinate in the rubbish piles of the ant nests far away from the parent plants. As above ground parts of the parent plant wither, the food and nutrients in them are moved to underground parts that will go dormant until next spring when the cycle begins over again.

Activity: Color in the different parts of the lifecycle as you think about what is happening at each part of the cycle.
Dormancy: Color the underground stem orange and the thin roots white. The soil that protects the plant in the winter can be colored brown.
Sprouting: Color the sprout green and underground stem orange
Leaf growing: Color the leaf and the word "photosynthesis" green.
Flowering: Bloodroot flowers are white but feel free to use any flower color you like.
Pollinating: Color the flower and the bee.
Fruit Forming: Color the bloodroot fruit green and the seeds inside the fruit brown.
Seed Dispersing: Color the withering leaf and seeds brown and the underground food storage structure orange.

Three different lifecycles:

This diagram shows the life cycle of a perennial plant that overwinters as an individual plant over many years. New plants can start from seed, but it might take years before new plants have enough food stored to make a flower. Most of our woodland flowers are perennials. Two other plant growth lifecycles are annual and biennial. Annual plants must start from seeds every year. The annual plant must make a fruit with seeds during one growing season. Seeds start the cycle over again each year. Do you know any annual plants? Biennial plants germinate and grow roots and leaves the first year. Usually in the second year, a biennial plant flowers, makes fruits with seeds inside and then dies.

Name

The Life Cycle of a Perennial Wildflower

