



Here Come the Sunflowers!

Overview

Students will have an opportunity to learn about sunflowers and plant sunflower seeds, a native plant of the North American prairie.

Suggested Grade Level

PreK - 1

Estimated Time

40 minutes; plus daily watering and observation

Objectives

Students will be able to:

1. identify sunflowers, sunflower seeds, some foods made from sunflowers, and other uses of the plant.
2. demonstrate the basic steps in planting a seed.

Materials

1. Purchased sunflower seeds from local hardware store, garden store, or catalog; enough for 2 to 3 seeds for each student. Package labels should indicate whether or not seeds are pretreated with a fungicide or pesticide. **Use untreated seeds only!** Sunflower seeds used for bird food may be used, if fresh.
2. Plastic or paper cups as seed pots with drainage holes punched in bottoms plus waterproof tray on which to set them..
3. Small amount of real soil is preferable; otherwise purchased potting soil.
4. Windowsill to place seed pots, or a bright lamp.
5. Spray bottles with water.
6. Representative food products (oil, snacks, etc.) from grocery store. (optional)

Background

The sunflower (*Helianthus annuus*) is believed to have been domesticated from wild sunflowers around 1000 B.C. in the western United States. The wild sunflower plant is highly branched with small seed heads and small seeds in contrast to the large seed head of the domesticated sunflower. One reason the sunflower is grown so widely is its relatively short growing season, generally

requiring 90 to 100 days from planting to maturity in the north-central United States, and somewhat longer for longer-season varieties grown farther south.

Sunflower heads consist of 1,000 to 2,000 individual flowers joined together by a receptacle at the base. The large petals around the edge of the head are actually individual ray flowers, which do not develop seeds. Pollination and seed development begin at the periphery of the grain head and move toward the center. It usually takes about 30 days from the time the last flower is pollinated to seed maturity.

A well-known sunflower characteristic is that the flowering heads track the sun's movement, a phenomenon known as heliotropism. Most new varieties have heads that droop down to face the ground as the plants mature. This helps reduce damage from birds and from diseases that could occur if water collected in the sunflower heads.

Uses of Sunflowers

Food – Most United States production is devoted to the oilseed sunflower, while a smaller percentage is grown for whole-seed confectionary uses, such as candy, snack food, and baked goods. Vegetable oil is the main use for sunflowers in the United States and worldwide. Sunflower oil is considered premium oil due to its light color, mild flavor, low level of saturated fats, and ability to withstand high cooking temperatures.

Ornamental – Many people grow sunflowers in backyard gardens during the warm growing season, both for food and ornamental purposes. In recent years, the sunflower has become extremely popular with gardening enthusiasts, encouraging seed companies to produce a wide selection of sunflowers with ornamental qualities for cut-flower display, and attraction for birds and wildlife.

Birdseed – Another well-known use of sunflower seed in the United States is for birdseed, most typically mixed with millet and other grains. The black oilseed varieties are also sold separately, and usually are favored by birds over the striped confectionary seeds. The high oil content of sunflower seeds provides an excellent source of energy for birds.

Livestock – Sunflowers are sometimes used as livestock feed and, in recent years, the chopped stalks have been determined to be a reasonable silage crop.

Industrial – Although the sunflower has the potential for many industrial uses, in the United States, it is mostly used for food or feed purposes. Sunflower hulls have a limited market for specialty purposes such as poultry litter, fireplace logs, and other high fiber products. Sunflower oil has been researched as a potential diesel fuel substitute.

Activity

1. Give each student 2 to 3 sunflower seeds in a small container. Have them examine the seeds carefully. Ask what they will need to plant the seeds.
2. Pour a small amount of soil onto each student's desk or into his or her hands. Have students describe the soil. What is it made of? What color is it? How does it smell?
3. Pass out planting containers with drainage holes and have each student write his or her name on the containers. Have students fill the containers almost to the top with dampened soil. Provide spray bottles of water to moisten soil.
4. Have students poke a hole for each seed about one inch deep into the soil, place a seed in each hole and cover it lightly with soil.
5. Place the pots on a tray in a sunny window and water them when soil is dry to the touch. Check containers daily to avoid excessive drying if placed near a heating device or in the hot sun.
6. In 5 to 10 days plants will emerge in each container. If more than one seed germinates, have students carefully cut out all but the healthiest plant.
7. Hand out Activity Sheet A. Have students color the pictures, cut them out, and paste them in the proper order to complete the cycle.
8. Hand out Activity Sheet B. Have students color the pictures, cut them out and use as sequencing cards.

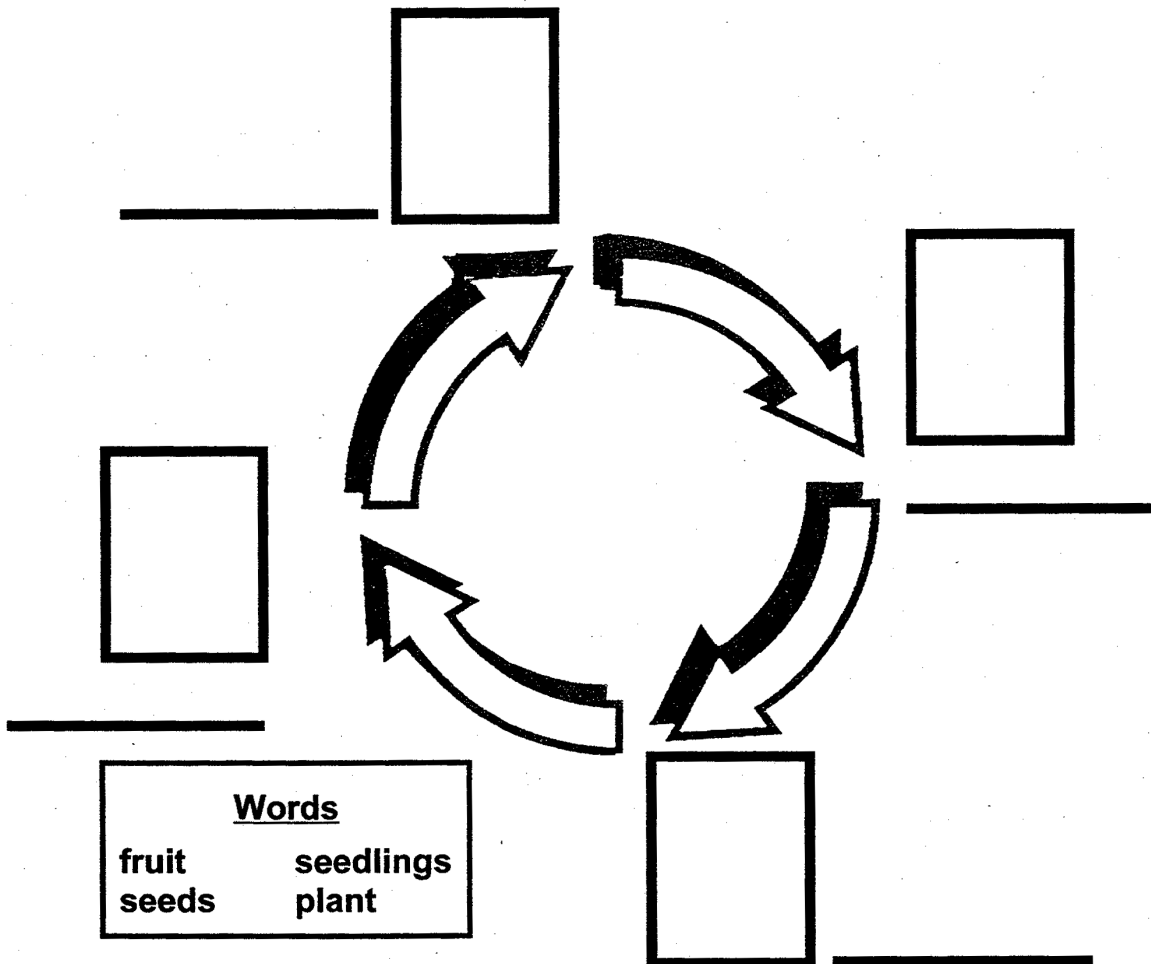
Extensions

1. Shell and eat some sunflower seeds from the grocery store. Remember that seeds for planting may have been treated with pesticides. **Do not eat treated seeds!** Purchase only seeds that have **not** been pretreated.
2. Have students make calendars to keep a record of their plants' development. Take pictures of plants daily, especially during the seed germination period. Show pictures of sunflowers from seed catalogs, magazines, etc.
3. Have students look at home for sunflower products or other seed products they have eaten in the past few days. Examples may be sunflower oil, sunflower seed in packets for cooking or snacks, trail packs containing sunflower seed, cookies or cakes using sunflower seeds. (Teacher may bring in examples of products instead.)
4. Invite a local neighborhood gardener, gardening parent, greenhouse owner, county extension agent, or Master Gardener to visit the class and offer tips for growing healthy plants, including sunflowers.
5. If possible, take a field trip to a greenhouse, farm, or landscape nursery that grows and/or sells sunflowers.

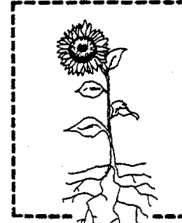
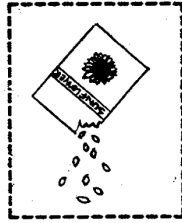
Adapted from Oklahoma Ag in the Classroom, Department of Agricultural Education, Communications and 4-H Youth Development, Oklahoma State University, Stillwater OK 74078

Here Come the Sunflowers!

Cut out the pictures at the bottom of the page. Paste them in order in the boxes to complete the cycle. Then write the correct word in the space provided.



Words
fruit seedlings
seeds plant



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