

A Hidden Beauty

Objective

Students will examine a variety of bulbs, plant and observe a bulb growing and construct a model of a plant that grows from a bulb.

Background

A bulb is a thickened underground stem that stores food for the growth of the plant. An onion is a bulb. All the layers of the onion and other bulbs are leaves that contain food to help the plant grow and flower. Some of our most beautiful springtime flowers grow from bulbs, too. Tulips, daffodils, crocus, and hyacinth are some of the most common ones. After the flower dies, the leaves collect sunlight, which is used to turn nutrients from the soil into food for next year's flowers. The amaryllis bulb is usually grown as a houseplant because it comes from tropical South Africa and cannot survive Oklahoma's cold winters. It grows very quickly and has huge red, pink, white or candy-striped flowers.

Science

1. Read and discuss background and vocabulary.
2. Bring an onion and other common bulbs students might find in their homes and use them to demonstrate the background material.
3. Use a sharp knife to cut the bulbs in half, some crosswise and some lengthwise.
—Students will examine the bulb centers with a hand lens.
4. Grow an amaryllis or some other bulb plant (tulip, crocus, hyacinth, narcissus) in your classroom. Get information about growing them from your garden center.
—Students will predict what will happen to the bulb and record their observations.

Math

1. After planting bulbs, students will use a wooden paint stick to mark the growth of their bulbs, as follows:
—Set the stick next to the bulb's container and use a marker to note the starting date and to indicate the level of the bulb's top.
—When the first growing tip emerges, mark its tallest point with a line of colored pencil, and then color in the block.
—Use a ruler and measure the growth. Use a marker to note the measurement and the date.
—Repeat every two to three days until the bulb blossoms.
—Students will compare the growth of each of their bulbs and discuss possible reasons for differences/similarities in growth.

Oklahoma Academic Standards

PRE-KINDERGARTEN

English Language Arts—1.R.1,2,3,4;
4.R.1; 1.W.2; 3.W; 4.W.1; 2.PA.1,2,4;
2.PC.4,5

KINDERGARTEN

Science—LS1.1; ESS3.1
English Language Arts—1.R.1,2,3,4;
4.R.1; 1.W.2; 3.W; 4.W.1; 2.PA.1,2,3;
PC.4,5; 2.F.2

GRADE 1

Science—LS1.1,2; 3.1
Math—GM.2.1,3,4
English Language Arts—1.R.1,2,3,4;
4.R.1; 1.W.2; 3.W.1,2; 4.W.1; 2.PC.2;
2.PA.3; 2.F.1,2
Visual Art—3.1,2

GRADE 2

Science—LS2.1
Math—GM.2.2
English Language Arts—1.R.1,2,3;
4.R.1; 3.W.1,2; 4.W.1; 2.PC.2;
2.F.1,2
Visual Art—3.1,2

Materials

onion and other common bulbs
sharp knife
hand lens
glue

cotton string or assorted colors of
yarn to represent bulb roots
green construction paper

Vocabulary

bulb—an underground resting stage of a plant (as an onion or tulip) consisting of a short stem base bearing one or more buds enclosed in overlapping leaves

crocus—any of a genus of small herbs that are related to the irises and have showy solitary long-tubed flowers and slender grasslike leaves

daffodil—any of various of herbs that produce long slender leaves and flowers from an overwintering bulb in the spring, especially one with petals whose inner parts are arranged to form a trumpet-shaped tube

hyacinth—a common garden plant that grows from a bulb, is related to the lilies, and is widely grown for its showy dense spikes of fragrant bellshaped flowers

nutrient—a substance that furnishes nourishment

stem—the main stalk of a plant that develops buds and shoots and usually grows above the ground

tulip—any of a genus of eurasian herbs that grow from bulbs, have large lance-shaped leaves, are related to the lilies, and are widely grown for their showy cup-shaped flowers

English Language Arts

1. Review with students what an acrostic poem is and how it is created.
 - Write the word “bulb” lengthwise on the chalkboard.
 - Students will brainstorm words that start with each letter.
 - Students will create their own acrostic poems or create a group poem.

Visual Art

1. Reproduce the line drawing of an amaryllis bulb included with this lesson.
 - Provide one copy for each student.
 - Students will color the bulbs and cut them out. (Amaryllis bulbs are brown, green and white, but allow your students to color them as they wish.)
 - Students will glue cotton string or assorted colors of yarn to represent bulb roots.
 - To complete the plant picture, help students draw between three and five long tongue-like leaves on green construction paper.
 - Students will glue the leaves to the tops of their bulbs.
 - Decorate a bulletin board with your students’ creations.
2. Provide each child with a ball of “Surprise Play dough” (recipe below) with a “secret center.”
 - As students play with their dough, they discover there is color and that the colors are different. Discuss the idea of “hidden beauty inside.”
 - Students will use the dough to create a three-dimensional representation of a plant bulb.

SURPRISE PLAY DOUGH

1 cup flour
1 tablespoon oil
1 cup water
1/4 cup salt
a few drops peppermint flavoring
food coloring
2 t cream of tartar

1. Cook all ingredients except food coloring over medium heat until the mixture pulls away from the side of the pan and reaches the consistency of playdough.
2. Knead until cool.
3. Divide the dough so there is enough for each student.
4. Hide a few drops of food color in the center of each ball but do NOT MIX. Use different amounts and colors of drops so that each child’s dough will be different.
5. As students starts to play with their dough, they discover there is color and that the colors are different.

Extra Reading

Barry, Frances, *Big Yellow Sunflower*, Candlewick, 2009.

Brown, Peter, *The Curious Garden*, Little, Brown, 2009.

Edom, Helen, *Science With Plants*, Usborne, 2007.

Mora, Pat, and Elizabeth Sayles, *The Rainbow Tulip*, Puffin, 2003.

Noyes, Deborah, and Bagram Ibatoulline, *Hana in the Time of Tulips*, Candlewick, 2005.

A Hidden Beauty

Color the bulb and cut it out. Glue string or yarn for roots. To complete the plant picture, glue paper leaves to the top.

