

Beautiful Bulbs

*A lesson from the New Jersey Agricultural Society
Learning Through Gardening Program*

OVERVIEW: In this fall planting lesson, students from grade levels K-5 learn what bulbs are and how to plant them. Younger students can learn which end of a bulb is up while planting them and older students can dissect a bulb to see its various parts. And everyone can anticipate some beautiful spring flowers by planting bulbs in the fall!

GRADE LEVELS: K-5 This lesson can be modified for all grade levels.

OBJECTIVE: The student will be able to:

- Explain that a bulb is a package containing everything needed to grow a new plant - miniature leaves, flower buds, and stem, as well as stored food for the plant to use while it grows.
- Explain the proper way to plant a bulb
- Describe the parts of a bulb. (Older grades)

MATERIALS

Flower bulbs to plant that will bloom the next spring

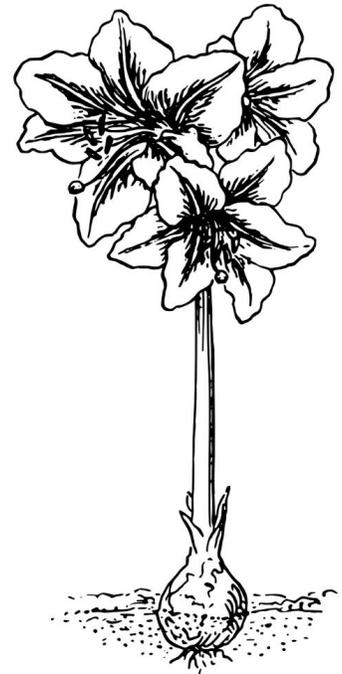
Onions to dissect

Parts of a Bulb worksheet

Optional: the book From Bulbs to Daffodils by Ellen Weiss

INTRODUCTION:

Tell the students that today you are going to plant bulbs so that they will grow into flowers in the spring. Show the students a bulb and pass it around for them to hold. Explain that a bulb contains everything needed to grow a new plant - miniature leaves, flowers, stem, and the food the plant will need while it grows. If your students have studied seeds, compare bulbs to seeds - each contain everything needed to grow a new plant.

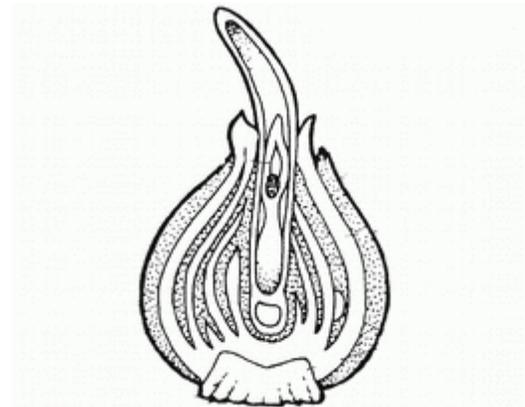


While most new plants grow from seeds, some plants develop bulbs to make new plants. Flowers that come from bulbs include: tulips, daffodils, hyacinths, amaryllis and crocuses. Vegetables that come from bulbs include: onions, garlic, scallions, leeks, and fennel.

Explain that flower bulbs must be planted in the fall or early winter so that they will bloom in spring. That is because the bulbs require a long period of cool temperatures to start the biochemical process that causes them to flower.

PROCEDURE: Explain to students that the pointed top of the bulb is where the stem will grow, and the flat, hairy bottom of the bulb is the place from which the roots will grow. Bulbs must be planted pointed side up in order to grow into a plant.

Separate older students into small groups and give each group an onion or a tulip bulb. Have the students cut the bulb in half vertically and use magnifying glasses to see what the bulb contains. Pass out the Parts of a Bulb worksheet.



Courtesy of www.learner.org

The parts of a bulb are:

Tunic: papery outer covering of the bulb. Not all bulbs have this.

Flower bud and immature leaves: the future flower stored in the middle of the bulb for protection

Scale leaves: the layers around the future flower that hold the stored food for the plant to use while it grows

Basal stem: the thick area at the bottom of the bulb from which the roots grow.

Have your students create a plan showing where they will plant their bulbs. If they are planting large bulbs such as tulips, daffodils, and hyacinths, the bulbs should be planted no more than six inches apart. If they are planting small bulbs such as crocuses, snowdrops, or lilies of the valley, the bulbs should be planted no more than three inches apart.

Planting the bulbs: Throw away any bulbs that are soft. The bulb should feel firm. To plant the bulbs, you can use a bulb planter tool, but it is not necessary. A regular trowel works just as well for planting bulbs. You can dig individual holes for each bulb, or plant several together in a shallow trench. Turn the soil and add organic matter such as compost or peat moss.

The directions that come with the bulbs should tell you how deep to plant them. Or you can use this rule: Plant your bulbs twice as deep as the diameter of the bulb (a two-inch diameter bulb would need to go four inches into the ground). Plant the bulb with the pointed end *up*. Cover the bulbs with soil after planting. Water your new bulb garden when you are finished.

EVALUATION:

The student will be able to explain what a bulb is.

The student will be able to plant a bulb correctly.

The student will be able to identify the different parts of a bulb and explain what each part does. (Older students.)

EXTENSIONS:

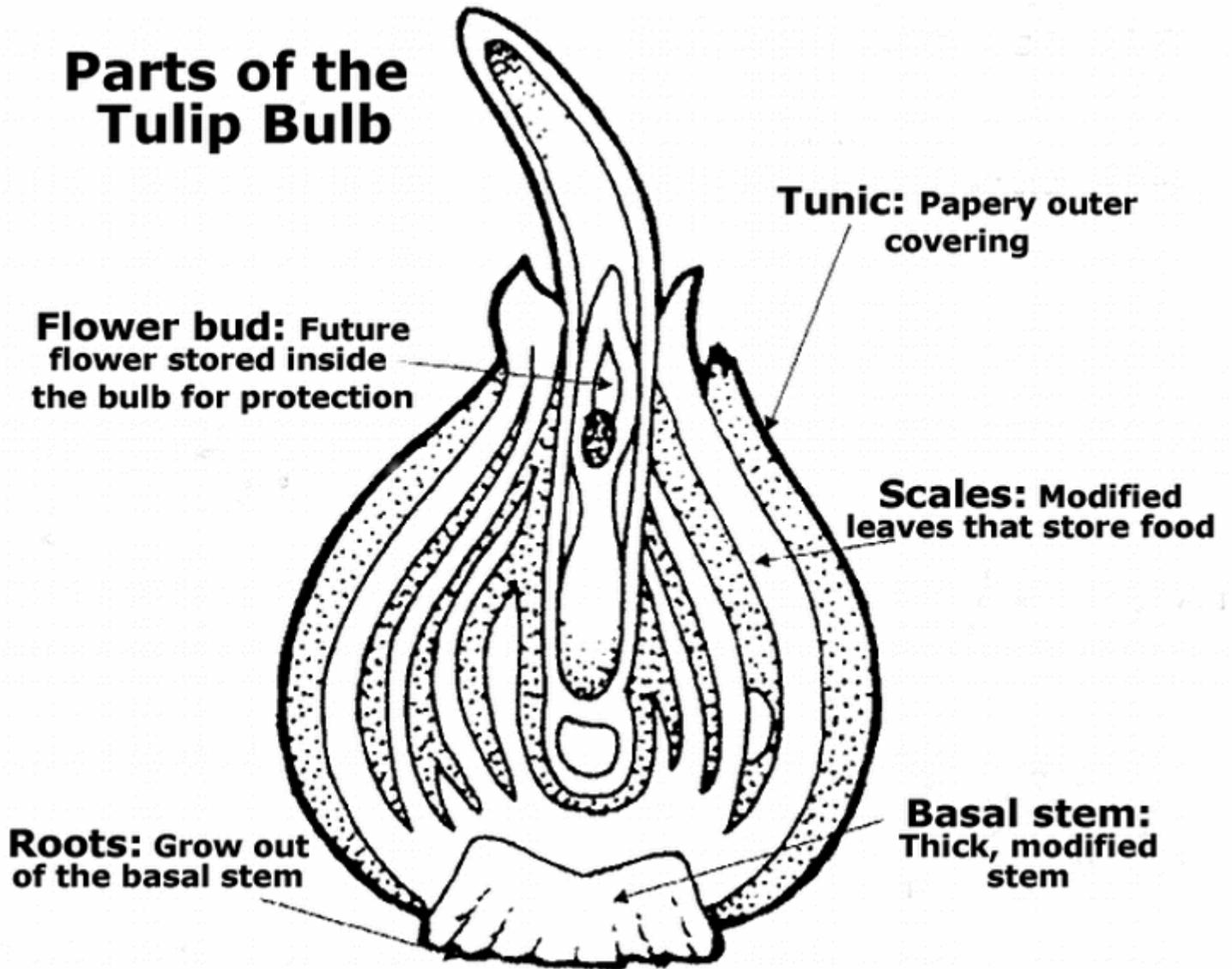
Ask the students to write a paragraph explaining what they have learned about bulbs - what a bulb is and how it should be planted.

Grow an onion in a jar so that your students can watch the bulb develop into a plant.

- Select a firm onion that has a good root system. The root system is located on the bottom of the onion.
- Fill an empty glass jar three-fourths full of water.
- Stick three toothpicks one inch into the middle of the onion. Space the toothpicks evenly around the bulb. The toothpicks will hold the upper part of the onion out of the water.
- Put the onion bottom into the water with the toothpicks resting on the edge of the jar. Place the jar in a warm location near a window where it receives indirect sunlight. Shoots from the top of the onion will appear in approximately five to seven days.

Research the history of tulip growing in Holland and how it became a multi-million-dollar industry.

Parts of the Tulip Bulb



Courtesy of www.learner.org