

Garden Education from the Salmon Center

Seed, Tuber, and Bulb Exploration Activity

Ages 9+ (can be adapted for younger age group if focus is primarily on observation)



Overview: Most students know that plants grow from seeds, but did they know that they also grow from bulbs and tubers? The purpose of this activity is to investigate the differences and similarities between seeds, bulbs, and tubers through the use of observational skills. Students will also learn about the anatomy and function of seeds, bulbs, and tubers.

Essential Questions: What do seeds, tubers, and bulbs have in common? What are their differences? Why does a seed, tuber, or bulb grow when planted, but if a leaf or stem is planted, it decomposes?

Definitions:

<u>Tuber:</u>	A swollen, fleshy, usually underground part of a plant that provides food and bears buds from which a new plant arises (Examples include potatoes, artichokes, jicama, and yams)
<u>Bulb:</u>	A short underground stem surrounded by fleshy leaves, which contain stored food for the embryo inside (Examples include garlic, tulips, daffodils, and lilies)
<u>Bud:</u>	Compact growth on a tuber and inside a bulb that develops into a leaf, flower, or shoot
<u>Seed:</u>	An embryonic plant enclosed in a protective outer layer
<u>Seed coat:</u>	The outer layer that protects the seed/embryo
<u>Embryo:</u>	The baby plant inside a seed. It has only two tiny leaves and the beginnings of a root
<u>Cotyledon:</u>	The part of the plant that provides food for the embryo

Materials:

- Seeds of different shapes and sizes (If using beans, consider soaking beforehand to allow for easier dissection)
- A tuber (a potato is an easy one!)
- A bulb (try garlic or a flower bulb)
- Magnifying glass
- Dissection tools (tweezers, knife, fork, etc.)
- Seed, Tuber, and Bulb Anatomy Guide (included)

Start the Activity:

1. Begin by asking students, “Where does a plant come from?” and “What does a plant need to grow?” to get them thinking about plant life cycles and needs.
2. Gather seeds of different shapes and sizes and allow students to touch, observe, and dissect the seeds. While they do so, have them write down their observations on a piece of paper. Try having students compare and contrast seeds by size, color, feel, and weight.
3. Introduce new parts of the plant—a tuber and a bulb—which in addition to seeds, can grow a new plant. Introduce new vocabulary and discuss any differences or similarities the student observes. Discuss that although tubers, bulbs, and seeds all may look different, their main purpose is to provide food and protection for plant embryos.
4. At the end of the activity, have students draw a diagram of a seed, a bulb, and a tuber to understand the anatomy of each. Label each diagram with new vocabulary terms.

Seed, Tuber, and Bulb Anatomy Guide

