

LITTLE SPROUT

Objective: Students will learn about the parts of a seed and their function.

Illinois State Goals: 12.A.

Top Book Hits:

Oh Say Can You Seed! by Bonnie Worth; **ISBN-13:** 978-0375810954

A Seed in Need by Sam Godwin; **ISBN-13:** 978-0750024976

Materials Needed:

- Backpack
- Rain jacket
- Paper labels for seed parts – Seed Coat, Cotyledon, Root, Leaves, and Embryo
- Snack stashed in main compartment of backpack
- Water bottle with attached straw
- Hat (preferably green)



Procedure:

1. Dress up a student as a well-prepared hiker wearing a backpack and rain jacket. Introduce the student to the class as “Sprout.” Explain that Sprout and seeds have a lot in common.
2. Ask the students what a well-prepared hiker wears to protect him/herself from the wind, rain, and cold. (A coat.) Explain that seeds also have coats for protection. Attach the seed coat label to the coat the volunteer is wearing. Explain that when the conditions change, Sprout can take his/her coat off and enjoy the warm, sunny weather. Similarly, when conditions are right for growth, the seed absorbs water, the seed coat cracks open, and the seed begins to sprout roots and leaves, or germinate. Have the volunteer remove his/her coat and hang it so that the seed coat label is clearly visible.
3. Ask the students what else a well-prepared-hiker brings. (A backpack with supplies.) Let sprout discover the snack in the main compartment of the backpack. (This can be shared at the end of the activity – it can even have some peanuts or other edible seeds inside to dissect!) Explain that seeds also have a supply of stored food. Our hiker’s food is stored in a backpack. A seed stores its food in cotyledons. Attach the cotyledon label to the backpack. Cotyledons provide the plant with the initial energy to germinate and grow. Once the plant has established itself, the cotyledons fall off.
4. Sprout expends a lot of energy hiking and eventually gets thirsty. What else is important to bring along on a hiking trip? (A water bottle.) Have Sprout remove the water bottle from the backpack. Plants also need water and minerals to grow. How do the plants get this water and minerals? (Roots.) Attach the root label to the straw of the water bottle.



Give credit where credit is due....Shelburne Farms, Project Seasons by Debra Parrella.

5. Ask the students what other item is useful to have on a hiking trip, especially on bright and sunny days. (A hat.) Have Sprout remove a hat from the backpack and place it on his/her head. Compare the hat to the first green leaves a seedling puts out to absorb sunlight. Attach the leaves label to the hat. The leaves use sunlight to make food for the plant. This process of making food from sunlight is unique to plants and is called photosynthesis. Soon the cotyledons will fall off and the plant is now able to get energy from the sun. Have the volunteer remove the backpack and place it next to the seed coat.
6. Explain that the leaves and roots grew from a tiny plant inside the seed called the embryo. Place an embryo label around the volunteer's neck showing the connection between these two parts. Review the various parts of the seed and their functions using the props.



Grow Further: Plant mAGic Kit - Science Lesson 1 – Exploring Types of Seeds
Monocots & Dicots available through local Agricultural Literacy Coordinator.