

Seeds We Need

Grades: Early Elementary (K-2)

Key Words and Definitions

ECOSYSTEM	A community of interacting organisms and their physical environment
GERMINATION	The process by which a seed begins to sprout into a plant after acquiring all it needs to grow
RADICLE	The first protrusion to emerge from a seed once it begins to germinate, that will eventually grow into the plant's root
SWEETGUM	A tree variety with star shaped leaves that produces spiky balls containing seeds

Pre-Field Trip Activity: Sprout a Seed!

One 20-minute session; pre-visit

Learning Objective

Students will develop an understanding of the inputs needed for seed germination by executing a practical experiment and drawing conclusions based on observations over time.

Materials

- Dried beans like kidney beans or peas (ideally soaked overnight)
- Plastic Ziploc bags
- Damp paper towels (one for each student)
- Markers and masking tape for labelling

Procedure

1. Select a seed you'd like to sprout with the class. Dried beans from the supermarket work well, such as beans or peas—soak them in water the night before you do the activity.
2. Begin the activity by introducing seeds to your class. We'll be learning more about seeds on the field trip to Wave Hill, but before we do so we'll be sprouting our very own seeds in the classroom! Say that seeds are plants that have not yet germinated, meaning they are waiting to grow. In order to sprout them, we need to supply our seeds with the things they need to survive. Ask the class what plants need and make a list on the board—water, sun, air, soil, and space.
3. Watch the timelapse video under resources as a class if you have a screen available. If not, you can show the class pictures instead or skip this step. Ask the class what they notice happening in the video or picture. Say that when a seed senses its environment is warm and damp enough to grow, it will send out something called a “radicle”, a tiny structure that will eventually become the plant's root.
4. Seeds are packed with nutrients, which is why humans and animals love to eat them. Seeds use the nutrients stored inside to feed the plant as it starts to grow. This is why we can sprout seeds without soil, which is usually the substance providing nutrition to plants—however, once they use up all the nutrients stashed inside the seed, they will need to be planted in soil to get more.
5. Hand out one to two soaked seeds per student, along with a Ziploc bag, a damp paper towel, and a piece of masking tape and marker. Each student should write their name on the masking tape with the marker, then attach that to the Ziploc so they know which seed is theirs.
6. Next, gently wrap the seed in the damp paper towel and put it into the bag. You can leave the bag slightly open at the top, then tape it to the window so it will get lots of sunlight. Take pictures and continue watching the bagged seeds and taking pictures throughout the week to document the changes you see!

Resources:

 [Seed sprouting time lapse video: Seed timelapse - YouTube](#)

Post-Field Trip Activity: Seed Detectives

One 20-minute session; post-visit

Learning Objective

Students will develop observation skills by identifying native seeds, then discuss their first impressions and use new information to reach an understanding of how seeds contribute to the ecosystem.

Procedure

1. Print out the page of different seeds attached under resources and cut out the seeds depicted, enough for each student to have one seed of each variety, then print enough copies of the animal worksheet for everyone.
2. Give students a few minutes to look at the worksheets before handing out seed cutouts. Ask if they can guess what kind of food each animal might eat. Why do they think that?
3. Hand out seed cutouts and glue sticks to each student and give them several minutes to match and glue the seed next to the animal they think eats it.
4. Ask if the class thinks more than one animal might want to eat more than one kind of seed? Amazingly, all the animals on the sheet will eat acorns, pinecones, sweet gum seeds, and sunflower seeds, though they have different methods of going about it. For instance, birds will tear open seeds with their beaks in order to eat them, while squirrels use their sharp teeth to break open nuts.
5. Ask if the class remembers seeing animals at Wave Hill. Which ones did they see? Why do they think those animals are able to survive at Wave Hill? Did they see any of the seeds on the worksheet during the field trip? Animals choose their habitats in part based on what food is available. Wave Hill has lots of different seeds and food sources, which is why it can sustain so many varieties of animal. A seed's job is not just to become a plant, but to feed and fuel the ecosystem!

Materials

- Printed activity sheets (linked under resources)
- Gluesticks
- Scissors

Resources

 [Seed detectives handout](#)



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