

Galena Creek Visitor Center
At-Home Learning Activity

Plant Your Own Seed!



Summary of Activity

In this activity, we will do what nature does best: grow plants! Fortunately for us, all of the things that a plant needs to survive are readily available either within our home, or just outside. Younger students may need help from an adult, though the activity is appropriate for all ages, even adults!

Objective:

Students will learn about the science behind what plants need in order to germinate, as well as the difficulties that plants must overcome in order to survive. Upon completion of the activity, students will be able to witness the growth of a plant from its seed into a seedling.

Discipline or Subject Covered:

Biology

Grade Level:

Appropriate for all ages, 1st-12th grade.

Materials:

Container, soil, seeds, fertilizer (there are many at home options), and water.

Procedure:

- 1) Find a container: egg cartons work the best because you can plant multiple seeds side by side (a small tupperware or box works as well).
- 2) Find soil: Finding the right soil can be difficult, especially since most of the earth that is exposed within the city is found in parking lots and areas that are highly impacted. We want to find soil that is easily dug up, moist, and generally darker in color indicating the presence of nutrients. See the discussion section for a more in depth review on soils.
- 3) Make your own fertilizer: This is not a necessary step, but may help your seedlings grow if you are unable to find fertile soil. Some at home fertilizers include: very finely crushed egg shells, dried coffee grounds, very finely cut orange peels, crushed pine needles, ash from your fireplace, etc. Conversely, if you are able to find healthy soil, fertilizer most likely isn't necessary. Using a large container, mix a small amount of fertilizer into your soil; think "less is more!" since it is easy to add too much. A 90% soil - 10% fertilizer ratio is plenty. See discussion section below.
- 4) Find seeds: The easiest option is to use raw (dry) lentils, beans, or other legumes since these seeds will easily germinate, and can typically be

found inside your home. Another option would be to go for a walk and find as many different seeds as you can - using different types will give the best chance for one of them to sprout into a seedling. See discussion section below.

- 5) Place the fertilized soil into your container along with the seed about an inch below the surface.
- 6) Water your seeds, but not too much! The goal is to maintain "moist" but not "wet" soil. This means you may not have to water them everyday.
- 7) Set them in the sun and see what happens! Depending on what seeds were used, expect to wait a couple weeks before seeing any seedlings sprout.

Discussion:

Soils: If you compare the soil of a healthy forest and that of a dirt parking lot, you will notice some significant differences. Since the parking lot is constantly being compacted by cars, you will notice that forest soil is much easier to dig up. Compaction reduces the amount of air in the soil, and plants need air to survive just as much as we do. You probably already know that we need oxygen to breathe, and emit carbon-dioxide when we exhale. But did you know that plants breathe in carbon-dioxide and emit oxygen? Without plants, the Earth would be an uninhabitable place for humans! Having less air also means less space for roots to grow into.

Fertilizers: Although this can't be seen, healthy forest soils contain a variety of other nutrients that plants need; namely Nitrogen (N), Phosphorous (P), and Potassium (K). Healthy forests naturally cycle these nutrients back into the soil when an organism dies through decomposers, like fungi and bacteria. We add fertilizer for this exact purpose: to supplement the plant with nutrients that otherwise would be naturally occurring.

Seeds: Worthy seeds can also be a tricky find since all seeds require different conditions in order to germinate (the process of the seed sprouting into a plant). [Tip: If you happen to know the species of plant where you found your seed, or are able to identify the plant using an app (iNaturalist), do some quick research to see if the seeds need anything special for them to germinate. Example: pine seeds need at least several weeks of cold exposure, which simulates winter, before they will germinate.]

Other Resources/Further Information:

Although the general process is quite simple, growing different types of plants quickly becomes complicated, especially if you want those plants to continue growing into a mature, fruit or vegetable-bearing adult. If you feel inspired by this activity, we encourage you to research more into what it takes to grow the plants you are most interested in. Most importantly, the best way to learn is to just get your hands dirty and see what works!