

Growing Baby Ferns

Overview: Among some of the earliest land plants to evolve, ferns were an important part of the landscape during the time of the dinosaurs. They are interesting plants for kids to grow because they reproduce by spores rather than by seeds.



Materials:

- fern spores (note: you'll need to collect spores a week or two before launching this activity)
- peat pellets
- a tray
- Petri dishes or foil cupcake liners
- 8-ounce clear plastic cups
- distilled water

Approximate Time to Complete: 10-12 weeks

Location: Indoor

Ages: All ages

Season: Spring or Summer

Instructions:

1. Introduce ferns to your young gardeners and explain that ferns are a type of plant that grew when dinosaurs walked the earth, and they grow differently than many familiar garden plants. Although most ferns reproduce vegetatively by growing from underground stems called rhizomes, they also reproduce via single cells called spores.

2. Collect spores. Fern spores are located on sporangia (clusters of round bumps) on the undersides of fern fronds. Sporangia are most likely to appear on outdoor ferns from spring through summer (houseplant ferns may develop sporangia at different times). Mature spores are dark colored, look firm and slightly fuzzy, and rub off easily onto your fingers. If you don't have ferns in your schoolyard, check in local parks or woodlands, or ask a local garden center if you can collect spores from their houseplant ferns. Sometime you can also find spores on ferns from local florists. Snip a few fronds with ripe spores and wrap them in a folded paper towel. Store in a dry location for 1 to 2 weeks.

3. Soak pellets. After the 1- to 2-week wait for the spores, soak peat pellets in warm distilled water, cut the top netting and place the expanded pellets in foil cupcake liners or Petri dishes. Place on plastic trays. Remove the fronds from the paper towel and gently tap some of the

spores into each peat pellet (a cotton swab is a useful tool for this). Keep the growing medium, containers, and other materials extremely clean to avoid contamination from fungi and other life forms that also thrive in these conditions.

4. Cover and maintain moisture. Cover each peat pellet with an 8-ounce clear plastic cup to create a humid environment. Keep the tray in a warm spot with indirect light. Moisten the pellet if necessary by adding water to the dish or liner where the pellets soak it up from the bottom. Avoid watering from the top to prevent disruption or movement of the spores.

5. Thin young sprouts. In 2 to 4 weeks you should see small moss-like growths on the peat pellets (though spores of some fern species can take as long as a couple of months to sprout). This is the first stage of fern growth. Have your eagle-eyed observers watch carefully, since what they see first may look more like a coat of slime than any familiar plant! The first generation of fern growth is represented by translucent, heart-shaped plants called prothalli. Thin to 2 or 3 prothalli. These remaining ones will produce male and female structures that will unite in the film of water (make sure your little fern "greenhouse" has plenty of moisture available) to produce an embryo that grows into the familiar fern plant.

6. Transplant. In another 6 to 8 weeks the true fern fronds will appear. Once the true fronds are about an inch tall, transplant the baby plants into pots filled with moistened potting soil. Place them in a room with bright light and keep the potting mix evenly moist. To avoid the buildup of dissolved minerals and chemicals harmful to spore growth, water young ferns with distilled water.

***Fun with Ferns – If growing ferns from spores sounds too complicated, you can also explore ferns by collecting leaves from different types of ferns and pressing them to make your own herbarium sheets. Attach a pressed leaf to a sheet and make notes about the plants characteristics such color, habitat, size, shape, and so on. Kids can also use pressed ferns to create artwork such as note cards, bookmarks, and hanging ornaments. And since ferns are plants that date from the Mesozoic Era, they may want to include dinosaurs in their art, too!**