

# Science Challenge

<b>Driving Question</b>	What do plants look like as they grow?
<b>Grade group</b>	Kindergarten through 3rd grade
<b>Safety Considerations</b>	The seeds are small and should not be eaten Plastic bags should not go on anyone's head
<b>Materials</b>	Seeds of choice (can be from a package or from food leftovers) Toothpick (optional) Paper towels Water Plastic bag Permanent marker Journal Potting soil (optional) Egg carton (optional)
<b>Standards:</b>	Observe, ask questions, and explain the differences between the characteristics of living and non-living things. (K.L2U1.8) Observe, describe, and predict life cycles of animals and plants. (1.L1U1.6) Develop and use models about how living things use resources to grow and survive; design and evaluate habitats for organisms using earth materials. (1.L2U2.7) Develop a model representing how life on Earth depends on energy from the Sun and energy from other organisms. (2.L2U1.10)
<b>Vocabulary</b>	<b>Life cycle:</b> the process of growing and becoming part of the environment that a living thing goes through. <b>Germination:</b> sprouting a plant from a seed.

**Lesson Objective:** Students will be able to observe seeds as they germinate over the course of a few weeks. Students will be able to record their observations in a variety of ways, including through words and pictures.

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**Schedule:**

**Day 1:** Start seedlings

**Day 2-infinity:** Continue watching the seedlings and share any updates with Lowell Observatory!

**Instructions:**

1. If you are starting your seeds from a package, skip this step. If you would like to start your seeds from food leftovers, first locate the seeds inside the food. You may need a parent to help you cut the food into smaller pieces. Next, carefully remove the seeds using a toothpick and set them aside.
2. Soak a paper towel in water, then wring it out so it isn't dripping. Fold the paper towel in half.
3. Place seeds of the same type in the paper towel. Leave some space in between the seeds and leave half the paper towel empty. Fold the paper towel over again so the seeds are sandwiched in the middle. Fold the paper towel in half again.
4. Place the folded paper towel inside the plastic bag. Label it with the type of seed and the date you started your seedlings.
5. Repeat steps 2-4 with other seeds you may have.
6. Place all the seeds in a warm spot to sit.
7. Each day, take a peek at your seeds. Make sure the paper towel is still damp, and spray it with water if it is not. You may not need to open the bag to see your seeds, if you can see them through the paper towel.
8. In your journal, draw what your seedlings look like and write a few words to describe them. Make sure to write the date!

**Resources:**

<http://citadel.sjfc.edu/students/scm03254/e-port/vsg/The%20plant%20life%20cycle.htm>

<https://science4fun.info/life-cycle-of-plants/>

<https://az.pbslearningmedia.org/resource/lsp07.sci.life.stru.seedplant/life-cycle-of-a-seed-plant/#.XppfPo6YVpg>

**Taking it Further!** Once your seedlings have sprouted roots and those roots are about an inch long, you can plant them. You will need an egg carton and some potting soil. Fill the small pockets in the carton most of the way up with soil, and then make a small

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indents with your finger in each pocket, just big enough for your seedling. Place the seedling in the soil and cover up any roots with more soil. Give it just a little bit of water every day or two. Continue updating your journal with how your plant is growing! If your plant continues growing, it will eventually need a larger pot or to be planted in the ground.