



Seed Germinator

Watch your garden grow! Observe how seeds can thrive when their basic needs—air, water, nutrients, sunlight, and space—are met.

TEKS:

SCI K.9 B: The student is expected to examine evidence that living organisms have basic needs such as food, water, and shelter for animals and air, water, nutrients, sunlight, and space for plants.

SCI K.10 B: The student is expected to identify basic parts of plants and animals.

SCI K.10 D: The student is expected to observe changes that are part of a simple life cycle of a plant: seed, seedling, plant, flower, and fruit.

SCI 4.10 C: The student is expected to explore, illustrate, and compare life cycles in living organisms such as beetles, crickets, radishes, or lima beans.

Materials:

- Bean seeds (lima, pinto, or mung beans work best)
- Paper towels
- Sandwich-size plastic zipper bag
- Tape
- Water

How To:

1. Optional: Soak bean seeds in water overnight to prepare them to germinate. This will provide faster-growing results.
2. Fold a paper towel so that it fits nicely inside a sandwich-size plastic zipper bag. Add water to the paper towel until it is damp.
3. Place the dampened paper towel into the bag.
4. Place the bean seeds inside the plastic bag, positioning them between the paper towel and the inside of the plastic bag. Make sure to place the beans about one inch apart so they have room to grow!
5. Seal the plastic bag and tape the bag to a sunny window. The side where the beans are visible should face inside so you can watch the seeds grow.

31 Days of STEM FUN!

www.destember.org | [#deSTEMber](https://twitter.com/deSTEMber) | © 2021 by Girlstart www.girlstart.org

DeSTEMber is a trademark of Girlstart

6. Watch the beans grow over the next 2-5 days. You will see your beans sprout, and then, over time, you'll see the formation of roots, stems, and even leaves!



STEM Explanation:

Dried beans are a seed containing a “baby plant,” called an embryo, waiting to grow! Germination is the scientific term for the process of plants growing from a seed. When we plant seeds in soil, we cannot see when the seed first begins to grow. Germinating seeds in a clear bag allows us to see every step of the growing process.

How did the beans grow in a bag, when most plants grow in soil? Plants need to have their basic needs met in order to grow. The basic needs of plants are air, water, nutrients, sunlight, and space. The bag with the wet paper towel provided air, water, and space for the bean seeds. Placing the bag in a sunny window provided sunlight and nutrients that the seeds needed to be healthy. Giving the bean seeds their basic needs sent a signal to the embryos that germination, or growth, could begin! When seeds begin to grow, we see a sprout. This is the small start of the plant. As each day passes, the sprout continues to grow until eventually, we will see roots and a larger sprout that becomes a stem. After a week, leaves may begin to grow as the plant continues to get taller. After 7-14 days, your plant may grow to reach the top of the bag! This is a sign that your plant is ready to be transplanted, or moved, into soil to continue growing.

Career Connection:

Botanists study plants. They understand the anatomy of plants and how these characteristics help the plants survive. Botanists also study plant environments and how plants interact with each other.

Resources:

<https://resources.finalsite.net/images/v1592606316/eton/nvryw2gdztuczbthjmsr/Botany-Projects-3.pdf>

https://www.youtube.com/watch?v=E2_84NnJa3A

31 Days of STEM FUN!

www.destember.org | [#deSTEMber](https://twitter.com/deSTEMber) | © 2021 by Girlstart www.girlstart.org

DeSTEMber is a trademark of Girlstart