

Seed Germination Experiment

Spring into Science: Grow Your Own Garden

Spring is a season full of new beginnings. After a cold winter, spring brings warmer weather and longer daylight hours. Streams and rivers flow stronger because of melting snow and frequent rains. The landscape becomes more and more green as plants begin to grow and bloom. Now is the perfect time to grow things on your own! With this simple setup, it is easy to have fun examining and observing how a seed transforms during germination.

Take some time to think about plants you encounter in everyday life.

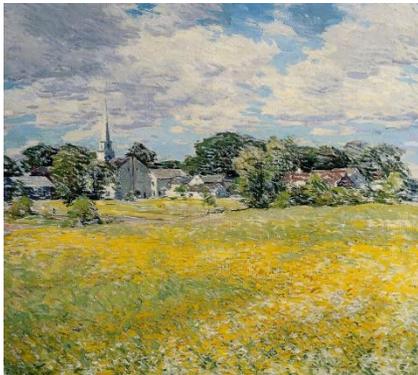
Are there any plants in bloom outside? What plants did you eat during your last meal? Have you eaten any plants with seeds inside? Vegetables? Fruits?

Materials:

Large Glass Jar / Cup
Water

Paper Towels
Dry Seeds (Beans, Peas, Sunflowers, etc.)

These impressionistic paintings of gardens capture new growth seen during spring!



Willard Leroy Metcalf (American, 1858-1925)
Buttercup Time, c. 1920
Oil on canvas, 26 1/4 x 29 in.



George Hitchcock (American, 1850-1913)
Early Spring in Holland, c. 1890-1905
Oil on canvas, 35 7/8 x 51 1/4 in.

Things you might want to try during your experiment:

- Make a small journal to write about your daily observations. Record data such as date, time, sunlight level, and water level. Draw pictures of progress.
- Use multiple seeds and study the differences between them.
- Use the same seed in different jars and expose them to different conditions. Do changes in sunlight or water affect the process of germination?

Let's Get Started!

You can set up multiple jars for different seeds.

- 1. Fill your jar full of paper towels.**
Fold and push them down to the bottom.
- 2. Slowly wet your paper towels with water.**
You want to be careful not to flood your jar!
- 3. Carefully push seeds down into your jar.**
Put seeds between the paper towel and the glass so they are firmly held in place where you can see them.
- 4. Label your jar and place it by a window.**
Now it's time to patiently wait for something to happen. Check on seeds daily and record any changes you see.



Image credit: Little Bins for Little Hands

Questions to ask during your experiment:

- Have you seen a root pop out the side of any seeds?
- Have you noticed the root pushing down into your jar?
- Have you noticed the growth of any root hairs yet?
- Is the seed pushing up as the roots push down?
- Has it sprouted? Are there stems coming up yet?
- How tall has it grown? How long has it been growing?

Experiment Vocabulary

Spring – The season of the year between winter and summer when it starts to warm up and temperatures begin to rise. After the winter rest, spring is the time for new growth. Plants and animals become active again and start new life.

Seed – The part of a seed plant that can grow into a new plant.

Seed Coat – A protective outer layer of a seed to keep it safe.

Embryo – The tiny baby plant that can be found inside of a seed.

Endosperm – The food supply inside of a seed that helps the baby plant start growing.

Germination – The magic process that takes place when a seed comes to life and grows.

Roots – The underground part of a plant that holds it in place. Roots help plants bring in food and water from the soil.

Stem – The main part of a plant that holds up the limbs, leaves, and flowers. Stems move food and water between roots and leaves to help plants grow.

Leaves – A thin, flat plant organ that is attached to the stem. They are green and catch the sun to make food.

Flowers – The part of a plant that blossoms and produces seeds that can become new plants.

Fruits – The part of a plant that we usually eat that has seeds inside.

Seedling – A young plant that is grown from a seed.

Photosynthesis – The process that green plants use in order to turn sunlight into food.

Chlorophyll – A chemical that makes plants green. It helps plants absorb sunlight.

Online Resources

TELFAIR MUSEUMS COLLECTION

George Hitchcock - *Early Spring in Holland*

<https://www.telfair.org/artwork/5235/>

Gari Melchers - *The Unpretentious Garden*

<https://www.telfair.org/artwork/5242/>

Frederick Carl Frieseke - *The Garden Umbrella*

<https://collections.telfair.org/objects/5343>

Willard Leroy Metcalf – *Buttercup Time*

<https://collections.telfair.org/objects/5375>

THE GREAT PLANT ESCAPE – an online program for elementary students.

<https://web.extension.illinois.edu/gpe/index.cfm>

Science Videos

SciShow Kids - How Does A Seed Become A Plant?

<https://www.youtube.com/watch?v=tkFPyue5X3Q>

GPhase – Bean Time-Lapse – 25 days | Soil cross section

<https://www.youtube.com/watch?v=w77zPATVTuI>

Clarendon Learning – Photosynthesis for Kids

<https://www.youtube.com/watch?v=lln136eMl4g>

Music and Dance Videos

Harry Kindergarten Music – The Needs of a Plant

<https://www.youtube.com/watch?v=dUBIQ1fTRzI>

Harry Kindergarten Music – The Parts of a Plant

https://www.youtube.com/watch?v=ql6OL7_qFgU

TreeSchool – Photosynthesis

<https://www.youtube.com/watch?v=xuivYRmIACM>

Books and Storytime Videos

Peep and the Big Wide World: Peep Plants a Seed

<https://www.youtube.com/watch?v=Yxs7P7LWzDg>

The Tiny Seed by Eric Carle

https://www.youtube.com/watch?v=l_A_e6h-DhU&t=170s

The Bad Seed by Jory John and Pete Oswald

<https://www.youtube.com/watch?v=6uK-gIuI8DUhe>