



4-H Learn from Home Activity: Seed Germination

Materials Needed:

- CD Case
- Coffee Filter
- Two Rubber Bands
- Ruler
- Permanent Marker
- Six different seeds
- Flat plate or tray
- Water

Instructions:

1. With the hinge of the closed CD case at the top, take your ruler and permanent marker and draw a straight line across the middle of the case to mark where the seeds will be placed.
2. Take your ruler and draw a line 1 centimeter (cm) above and below the middle line. Repeat two times.
3. Mark the section above your seed line as "Shoot Growth" and below the seed line as "Root Growth".
4. Cut a paper coffee filter to fit inside the CD cases and place inside with about 1 cm folded over and hanging out from the bottom of the case.
5. Wet the coffee filter and place 5-6 small seeds of different types on the coffee filter along the seed line you drew on the case. The seeds will stick to the wet filter.
6. Close the CD case and wrap two rubber bands around it to hold it in place. Stand the CD case on end on your tray or plate.
7. Place $\frac{1}{2}$ inch of water in the tray.
8. Choose where the best place is to put the seeds. What are the different variables that need to be taken into consideration? Be sure not to run out of water in the tray during the experiment.
9. Optional: Create a data collection sheet (example below) for each of your seeds. Fill the data out as the seeds grow! Measure both root and shoot growth each day at the same time. Include pictures, written observations, and/or graphs.

Reflective Questions:

Did some seeds germinate faster than others? Why do you think this was?

Extensions of this activity:

Turn this into a science experiment! What is your hypothesis? What are your dependent and independent variables? (Examples: Seeds need light to germinate. Seeds will germinate with Gatorade instead of water. The hotter the temperature it is, the more likely seeds will germinate.)

Important Terms/Vocabulary:

Seed – an embryo or baby plant that can grow into a larger plant

Germination – when a seed sprouts

Variable – anything that can change or be changed

- independent – a variable that you can control (i.e. amount of water)
- dependent – a variable that you observe and measure but don't have any control over (i.e. time it takes your seed to germinate)

Hypothesis – a tentative explanation for an observation, phenomenon, or scientific problem that can be tested by further investigation

EXAMPLE DATA COLLECTION SHEET

Seed: Beet

When it Germinated: June 5, 2020

	Stem Growth (in cm)	Root Growth (in cm)	Notes
Day One (day of germination)	0	$\frac{1}{2}$ cm	<i>I think the root is starting to grow. It has a pointy end.</i>
Day Two			
Day Three			
Day Four			

Day Five			
----------	--	--	--