

RAFT IDEAS

Topics: Botany, plant growth, scientific method

Materials List

- ✓ CD jewel case with inner piece removed
- ✓ Plastic tray
- ✓ Paper coffee filter
- ✓ Two large rubber bands
- ✓ Scissors
- ✓ Ruler (metric)
- ✓ Permanent marker
- ✓ Radish seeds or other fast-growing seeds
- ✓ Water

This Activity can be used to teach (CA Science Standards):

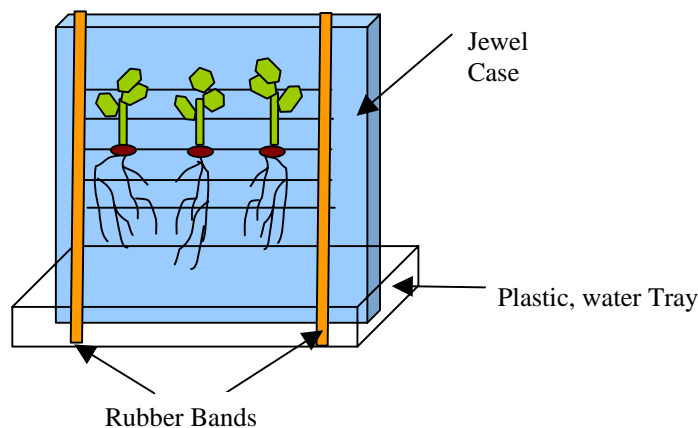
- Plant structures and functions (Grade 3, 3.a; Grade 5, 2.0; Grade 7, 5.0)
- Environments affecting plant development (Grade 2, 2.e; Grade 4, 3.b)
- Scientific experimentation (Grade 5, 6.b – 6.i; and above)



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The GERMINATOR

What a Great Vista, Baby!



Gathering and charting data on root and shoot growth is fun with these quick and easy seed germinators!

To Do and Notice

1. With the hinge of the CD case at the top, take the ruler and permanent marker and draw a straight line across the case to mark where the seeds will be placed.
2. Along one side of the case, start at the line drawn in step 1 and use the ruler and marker to draw a ruler, marking each centimeter above and below the line.
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 case and place inside with about 1 cm folded over and hanging out the bottom of the case.
5. Wet the coffee filter and place 5-6 seeds on the coffee filter along the seed line you drew on the case. The seeds will stick to the wetted filter.
6. Stand the CD case on end inside the plastic tray and use the rubber bands to hold it in place. Place water in the tray.
7. Make a data collection sheet and measure both root and shoot growth each day at the same time. Include pictures, written observations, and/or graphs.

The Science Behind the Activity

Plants produce seeds that are inactive, or dormant, allowing them to survive poor growing conditions. When conditions are right (correct light, water, temperature, etc.), the seed begins to germinate. Germination is the dynamic process by which a seed becomes a young plant. Using the Germinator and seeds that germinate quickly, students can observe this process. During germination the plant embryo within a seed uses nutrients contained in the seed to grow and produce a plant seedling. The seed contains enough nutrients to sustain growth until the plant can begin to produce nutrients via photosynthesis.

Taking it Further

- Have students measure the effects of different variables. For example, salt water, no water, fertilizer in water, different kinds of light (fluorescent, colored, none), different temperatures, different types of seeds, etc.