

## SEED GERMINATION

**A. Question:** *How do seeds germinate?*

**B. Materials Needed:**

- Small seeds (mustard, radish, green beans, etc.)
- Blotting paper or several layers of paper towel.
- A drinking glass or beaker

**C: Procedure:**

1. Cut a rectangular piece of blotting paper as wide as the drinking glass is tall (if a paper towel is used, triple or quadruple the layers).
2. Moisten the paper and place the seeds into it.
3. With the seeds sticking to the moist paper, roll the paper in a cylinder slightly smaller in diameter than the glass and insert the roll into the glass.
4. Let the paper stand against the glass wall and pour some water into the glass to keep the paper moist.
5. Put the glass in a warm place and cover loosely (make sure that some water stays in the glass at all times).

**D: Anticipated Results:**

In three to six days, depending on what type of seeds, the seeds will sprout and send their rootlets in a downward direction.

**E: Thought Questions for Class Discussion:**

1. Which seeds sprouted first? Which last?
2. In which direction did the rootlets grow?
3. How was the paper able to stay moist at all times?
4. Why did the glass have to be loosely covered?
5. What are the conditions for the germination of seeds?

**F: Explanation:**

The seeds positioned closest to the water should sprout first because they are first in line for accessing the water. The rootlets grow towards the direction of the water because of this. The blotting paper stayed moist because the water worked itself up through capillary action in the paper fibers. The glass has to be covered in order to prevent fast evaporation of the water. However, the glass cannot be tightly sealed because the seeds cannot be cut off from the atmospheric air. The ideal conditions for the germination of seeds are: presence of moisture, warm temperatures, and air supply.