

Sumptuous Sprouting Seeds!

Basic description:

This is a two-part activity that encourages students to begin investigating the wonderful and wondrous world of plants. In Part One of this activity, students are introduced to the inside of a seed and learn about the different parts of a seed. During Part Two of this activity, students plant their own seeds, watch them sprout and then eat them!

Sources:

Adapted from:

The Kids Canadian Plant Book by Pamela Hickman, Toronto: Kids Can Press, 1996.

Science Is... by Susan V. Bosak, Scholastic Canada Ltd. and The Communication Project, 2000.

Curriculum connections:

Science and Technology – Life Systems (Grade 3)

Overall Expectations

- Demonstrate an understanding of the similarities and differences in the physical characteristics of different plant species and the changes that take place in different plants as they grow.

Specific Expectations

- Describe, using their observations, the changes that plants undergo in a complete life cycle (e.g., from the germination of a seed to the production of flowers or fruit).
- Describe ways in which humans use plants for food, shelter, and clothing (e.g., trees are used for building houses; cloth is made from cotton).

Preparation Time:

- Seed preparation: Overnight

Duration:

- Part One - Seed investigation: 20 minutes
- Part Two - Planting: 15 minutes
 - Growing period: 3-4 days
 - Final investigation and clean up: 30 minutes

Materials:

- Clear glass or plastic jars - enough for each student/group
- Water
- A small mixing bowl
- Paper towels
- Mung beans – for Part One of this activity, you will need one bean per student; for Part Two, you will need 10-20 beans per group or student.
- Magnifying glasses (optional)

Preparation:

1. Gather all necessary materials.
2. Fill the mixing bowl with water and soak your beans in the bowl overnight to speed up germination.
3. Before beginning the lesson, drain the beans in a colander or strainer.

Procedure:

Part One – Inside Seeds

As you work through this activity, stop along the way to talk about the different parts of a seed and their basic functions.

1. Provide each student with one bean seed.
2. Instruct them to scratch off the outer shell of the seed (the seed coat) with their fingernail. (Q. - Why does a seed need a 'coat'?)
3. Demonstrate to the students how to pry the two parts of the bean apart with their fingers.
4. Using the magnifying glasses (or just good, careful looking!), have the students observe the inside of the bean. (Q. - What do you see?)
5. A tiny, colourless, plant-like structure with two leaves (the embryo) will be stuck to one of the bean parts. (Q. - What do you think this is and what will it become?)
6. (Q. – The embryo is only a small portion of the whole seed. What do you think the rest of the seed is for? Think about how a plant gets its food. Is a seed able to make its own food yet?)
7. As an extension to this activity, you may choose to have your students keep the one portion of the bean seed that contains the embryo and plant it as part of the next activity (Q. - how does the removal of part of the seed's food supply effect the growth of the plant?). Otherwise, when students have finished investigating the inside of their seed, discard the open seeds.

Part 2 – Seed Germination

1. You may wish to have students work individually or in small groups for this activity.
2. Instruct the students to line their jar with paper towels that have been folded in half. Have them place wet, crumpled paper towel into the centre of the jar to hold the other paper towels against the side of the jar.
3. Help each group/student to add a few centimetres of water to the bottom of their jar.
4. Provide each group/student with a number of beans and instruct them to place the beans in the jar between the paper towel and the glass (so that they can see them!).
5. Over the next few days have the students monitor the seeds, adding water as required to ensure that the paper towels are kept damp.
6. Allow time each day for the students to observe their jar, watching for changes in the seeds. What happens to the seeds? Which plant parts appear first?
7. Once the beans have sprouted, instruct each student to choose one sprout from their jar and draw a picture of it, labelling as many plant parts as they can.
8. When you have finished with your sprout investigations, clean up your experiment. The easiest way to get rid of your seeds is to eat them! (Q. - Can you think of other plants that you eat? How many different plants or parts of plants have you eaten so far today?)

Follow-up:

- Introduce the term 'life cycle'. With the help of the class, draw the life cycle of a bean plant.

Resources:

- Starting with Science: Plants by The Ontario Science Centre, Kids Can Press Ltd., 1994.
- Plants: Mind-Boggling Experiments You Can Turn Into Science Fair Projects by Janice VanCleave, John Wiley & Sons, Inc., 1997.
- Science Is... by Susan V. Bosak, Scholastic Canada Ltd. and The Communication Project, 2000.
- Play and Find Out About Nature: Easy Experiments for Young Children by Janice VanCleave, John Wiley & Sons, 1997.
- The Kids Canadian Plant Book by Pamela Hickman, Kids Can Press Ltd., 1996.



Canadian
Heritage

Patrimoine
canadien