Investing in Nature

A Partnership for Plants in Canada
Un partenariat canadien pour les plantes

FOREST IN A JAR

Basic Description:
Through this activity, students are introduced to the process of succession and gain awareness of the changing nature of ecosystems.

Source:
- Project WILD: Activity Guide, The Council for Environmental Education, 1999.

Curriculum Connections:
Science, Grade 10, Academic - Biology: The Sustainability of Ecosystems

Overall Expectations
- Demonstrate an understanding of the dynamic nature of ecosystems, including the relationship between ecological balance and the sustainability of life.
- Investigate factors that affect ecological systems and the consequences of changes in these factors.

Specific Expectations

Understanding Basic Concepts
- Examine the factors (natural and external) that affect the survival and equilibrium of populations in an ecosystem (e.g., resource limits of an ecosystem, competing populations, bioaccumulation, selective decline).
- Examine how abiotic factors affect the survival and geographical location of biotic communities (e.g., explain why deserts exist in different parts of the world).

Monitoring Succession : 3-4 weeks

Summary Activity: 30 minutes

Materials:
- ½ or 1 litre jars - one per student/small group or one for the entire class
- Water
- Soil
- Aquatic plants - one per jar
- 500mL birdseed
- Digital camera – optional

Procedure:
1. Provide each student/group with a jar and instruct them to place approximately 5 cm of soil and 7.5 cm of water in each jar.
2. Instruct your students to place their jar at a window, without a lid and let sit overnight (this will let the contents settle).
3. Plant an aquatic plant in the jar. It should grow well in this environment. If your classroom has no windows, substitute a growlight.
4. Do not replace the water that evaporates from the jar.

5. Once or twice a week, have students add three of four birdseeds to the jar. While there is water in the jar, the seeds should germinate and then rot. Continue adding seeds even after the water evaporates.
6. As the water evaporates down to the soil, the aquatic plant will die. The birdseeds will now find the environment suitable for successful growth. Sunflower seeds, which grow large, can be added to represent forest trees.
7. You will now need to add water, as a substitute for rainfall, to keep the soil damp to keep things growing.

Follow-up/Discussion:
Have each student make a poster, drawing, or other visual representation of what they saw happen to their "pond". Ask them to talk about what they have learned about how environments can change. Introduce the term "succession" to older students.