



**Subject Area(s)** Environments

**Associated Unit** Engineering

**Associated Lesson** NA

**Activity Title** Building an Ecosystem

**Grade Level** 6 (5-7)

**Activity Dependency** NA

**Time Required:** one 1 hour period

**Group Size** ("Divide the class into teams of four or five students each.")

**Expendable Cost per Group** US\$ 9.00

### **Summary**

Plants that commonly grown in terrariums at cool temperatures include mosses, lichens, bloodroot, wood ferns, violets, trailing arbutus, and anemones. In warmer temperatures various begonias, croton, peperomia, creeping fig, selaginella, *Dracaena sanderiana*, Chinese evergreen (*Aglaonema*), maidenhair fern, and other tropical plants are commonly grown. Terrariums are a great way for students to observe changes in an ecosystem and relate it to the world around them. The bottom layer in the plant terrarium usually consists of sand or large pebbles mixed with a small amount of

charcoal; above it is a layer of topsoil 2-3 centimetres (about 1 inch) thick. In this lesson students will act as their own development companies and develop an ecosystem.

### **Engineering Connection**

In an environment there is a large amount of natural engineering that goes on. These natural engineering events include evaporation, condensation, which make up the water cycle. In terms of plants there is photosynthesis. Students will also use their judgment in designing their terrariums, as well as being able to use the scientific method to observe the changes in their terrariums.

**Keywords** terrariums, water cycle

### **Educational Standards**

• Science: • Science: A.1, A.2, E.8, F.3, F.4, F.5, G.1, G.3, E.2, E.1

### **Pre-Req Knowledge**

Students should have limited knowledge of the scientific method, as well as basic environment knowledge.

### **Learning Objectives**

After this activity, students should be able to:

- Describe the changes they observe in their terrariums
- Describe the basic principles of the water cycle
- Describe photosynthesis

### **Materials List**

Each group needs:

- 1 large jar
- some gravel and dirt, as well as plants, all that can be found outside

### **Introduction / Motivation**

Engineers and scientists still have many questions about the world around us.

Specifically what goes on in the environment, as well as the factors that affect it.

In this lesson, students will build terrariums, they will then observe the changes that occur in them over time.

### **Vocabulary / Definitions**

**Water cycle:** The circuit of water movement from the oceans to the atmosphere and to the Earth and return to the atmosphere through various stages or processes

**Terrarium:** .A small enclosure or closed container in which selected living plants and animals live.

### **Procedure**

- Add a layer of pebbles to provide drainage at the bottom of the container.
- Cover the pebbles with about two inches of topsoil.
- Place a few rocks in the terrarium.
- Add branches, moss and small plants.
- Slightly moisten the terrarium with water. (Be careful not to use too much water.)
- Cover the opening with a sheet of plastic.
- Seal the container

### **Before the Activity**

- Gather materials and make copies of the directions.

**With the Students** (suggested subheading)

1. Divide the class into groups of four or five students each.
2. Describe step-by-step procedures.

**Assessment**

The teacher should have students write in their log books the lesson objectives from memory.

**Post-Activity Assessment** (suggested subheading)

*After the lesson the students can make a connection between terrariums and the world around them*

**Owner**

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**Contributors**

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