

## Classroom Activity

# Recycling

### Standards

Science (K-3): Science as Inquiry 1; Properties and Structures of Materials 1, 2; Material Technology 1, 2; Interactions With the World Around Us 3; Technology and Its Influence on the Environment 1

Language Arts: 1

Social Studies: Civics 2, 3, 4; Economics 1, 2; Geography 1

### Skills

Sorting, analyzing, communicating, recording.

### Purpose

The students will learn what items can be recycled in Delaware through the Recycling Center.

The students will learn why all things are not recycled.

### Background

Homework for the night before: have students bring in 2 pieces of trash. If it is possible, plan a field trip to a 'RECYCLE DELAWARE' center. Have students take their trash from their homework assignment with them. Have students place their trash in the correct igloo. If you are not close to a center, set up bags with the same labels as the igloos. The teacher could stop by a "recycle center" on the way home.

### What you need:

Video – DSWA 'RECYCLE DELAWARE'  
Video – National Geographic: Recycling, It's Everybody's Job.  
Articles made from recycled materials.  
Science log sheet.  
Pencil.  
Bags containing trash (from homework assignment).  
Plastic tub (dishpan).

### What You Do

Before leaving for the recycling center, discuss which of the items they brought in might be able to be recycled and why. Which items might not be able to be recycled? Why not?

At the center, read the directions posted on each igloo/container. Have students place their trash in the appropriate igloo as they come to them.

Back in class, list all the kinds of items that could be recycled, and which ones could not. (Cardboard, car parts, classroom paper, Styrofoam, plastic bags, etc.) Stress that some of these items could be recycled but not at the center we visited. Discuss some ideas on what could be done with the items that could not be put into any of the igloos. Why are some items not recyclable? (Nothing can be made from certain items, not enough room for igloos for everything, not enough money for more igloos, etc.) Hopefully, there will be a resource person from the reclamation center who can talk to the class and answer questions. Look at National Geographic's video – Recycling, It's Everybody's Job, and DSWA's video – 'RECYCLE DELAWARE.' Discuss how recycling procedures were the same or different from the students' ideas.

Look at items made from recycled products (rugs, park benches, new cans, bottles, etc.)

Record data and answer questions on science sheets.

# Classroom Activity

## Wormery

### Standards

Science (K-3): Science as Inquiry 1, 2, 3, 4; 6  
Characteristics of Living Things; 6 Requirements for  
Survival.

Language Arts: 1, 3

Math: 5, 9

Social Studies: Economics I

### Purpose

The students will make a wormery following the directions.

The students will make daily observations on the behaviors of the worms and record their data.

The students will make graphs showing the results of their data.

The students will raise the worms to be used in other science activities.

### Background

Wormery is adapted from a Keith Pigdon and Marilyn Woolley book called Earthworms. This can be read to the class before or after the activity. The Wormery is an ongoing project that the students will maintain daily. They can record their observations in the science log. The worms can be used later in the year for other experiences and dissections.

### What you need:

Large empty jar	2 – 3 earthworms
Damp soil	Some leaves
Sand	Black paper
Spade	Sticky tape

### What You Do

Put a layer of damp soil in the jar.

Add a layer of sand.

Fill the jar with damp soil.

Add earthworms and leaves.

Wrap black paper around the jar with tape and leave a few days.

After a few days remove the paper. Observe how worms have mixed the leaves into the soil.

Record your observations.

Add small amounts of water if needed to keep soil moist.

### Assessment

The students can maintain a daily log of the worms' actions. With the information they obtain they can make different graphs and charts to show their results.

### Extensions

Students can write poems about earthworms using some of the characteristics of the worms.

Students can measure the growth of the worms and plot them on a graph.

Students can learn the organs in their digestion system by decorating a cake with the different parts.



## Classroom Activity

# Composting – Worm Activity

### Extension

I Science as Inquiry 1, 2, 3, 4; 2 Changes in Materials, Material Technology 1, 2; 3 Characteristics of Living Things; 7 Evolution 1, 2; 8 Interactions Within the World Around Us 1, 2, 3; Technology and Its Influence on the Environment 1, 2

Language Arts: 1, 3

Social Studies: Civics 3

### Skills

Following directions, observing, classifying, predicting, gathering and recording data, interpreting data, applying and generalizing.

### Integrated Subjects

Language Arts; math.

### Background

Tiny creatures called organisms love to eat garbage in a compost pile. But even they won't eat some things. In this activity the children will predict and discover which types of trash can be placed into a compost pile. They will observe and record data to prove their findings. They will get to see what these creatures can do!

### Objective

The students will learn which objects can be effectively managed in a compost pile. They will observe the decay process and the microorganisms that are beneficial to the composting process.

### What you need:

Four flower pots (transparent plastic containers); natural garbage (apple cores, potato peels, vegetable scraps); unnatural garbage such as plastic, Styrofoam chips, labels for the pots, finished compost from your pile, or a garden store source of soil with tiny garbage eating creatures added (snails, beetle, insects, red worms, bacteria, fungus and molds) sterile potting soil, perculite, or vermiculite from a garden store (soil with no tiny garbage eating creatures).

### What you do:

Fill two pots or containers with compost. Label them "compost."

Fill the other two halfway with sterile soil. Label them "sterile."

Put an apple core in a "compost" pot. Write apple core on the label. Put a plastic bag or Styrofoam chips in the other compost pile. Label the pile. Then fill each pot to the top with compost.

Repeat step 3 with "sterile" pots, and fill to the top with sterile soil.

Add water to the pot so they are damp but not too wet. Check the pots every few days to make sure they are still damp.

After a week, uncover the garbage in each pot. Record your observations.

Check the garbage every week for five or six weeks. Record your observations.

### Assessment

Prepare a report on your findings. Explain what happened in each pot. What was the rate of decay comparing the results in each pot? Write an informative paragraph explaining your findings. What conclusions have you made? Is there another test you would like to make? Explain why.

## Classroom Activity

# RECYCLING VOCABULARY

**CHEMICAL PROPERTIES** – the ability of a substance to go through a change that alters what the material is.

**COMPACTED** – closely and firmly united or packed together.

**CONTAMINATED** – to make impure or unclean by contrast or mixture.

**CULLET** – small pieces of glass prepared for melting to form products.

**FIBERS** – a threadlike object or structure.

**MAGNETIC ATTRACTION** – attraction of a substance to a magnet; most commonly iron.

**MANUFACTURE** – to make or process a raw material into a finished product.

**PHYSICAL PROPERTIES** – things we can observe and measure without changing what the material is.

**PROCESSING** – a series of operations performed in the making or treatment of a product.

**PULP** – a soft, moist mass of fibers used in papermaking.

**RECYCLE** – the process used to make new products from materials that have been previously used.

**REDUCE** – to lower the amount of waste generated.

**REUSE** – to use a material or product over again and again.

**SILICA** – material made almost exclusively from silicon and oxygen (SiO<sub>2</sub>), mainly derived from quartz sand.

**SMELTER** – an apparatus for melting in order to separate the metallic constituents.

**VIRGIN STOCK** – initial raw material from which something is made.

**VOLUME** – the amount of space an object takes up.

