



The Principles Of Composting*

Activity M.t

GRADE LEVELS: 7 - 8

OBJECTIVE:

To introduce students to the principles of composting.

VOCABULARY:

composting, windrows

PROCEDURE:

Explain to students that composting is a process by which plant material is returned to the soil, as it is in the nutrient cycle. the composting process enriches and improves the consistency of the soil while reducing the amount of solid waste requiring disposal.

Have students make and investigate their own compost operation.

1. Place the following or similar food wastes in a plastic bag or outdoors in a marked area: apple peels, leaves, old bread, coffee grounds, green tops of vegetables, potato peels. Meat and grease should not be included.
2. Chop and mix them up with some water and yard waste such as leaves or grass clippings.
3. Twist and tie the bag securely, or cover the mound with earth.
4. Open the bag once a day to allow oxygen inside. Explain that oxygen is needed by the microscopic organisms to break down the materials.

Discuss what is going to happen. (Wastes will begin to decompose, and to grow uniform in color and texture.) Have the students keep a record of the process of decay. Note odors, texture, and other changes. Ask the following questions:

Which materials decay the fastest?

How long does the complete decay process take?

Prepare a wet-mount microscope slide and stain to microscopically examine the organisms involved in the process of decomposition. Ask the following questions:

How many different types of organisms can be found?

What would our landscape look like if these organisms did not exist?

What objects would not decay if placed in our compost pile?

You might want to try using the compost generated to fertilize a garden at the school and monitor its growth.

Ask students if their households have ever kept compost piles of yard or kitchen wastes. Have them discuss their experiences. Tell students that some cities use large composting operations to process a portion of their residential waste. Most often yard waste from the entire community is collected with the local trash pickup and laid out in elongated piles or windrows. The windrows are turned periodically and the compost is used by residents in their yards and gardens, or by landscapers on golf courses, along highways, or in local parks.

Encourage students to start their own compost piles at home with their parents' permission. Photocopy the illustration on the following page and distribute to the class. Go over the simple set of instructions and have students study and discuss the picture.

*Source: U.S. Environmental Protection Agency Let's Reduce and Recycle: Curriculum for Solid Waste Awareness