

Working Worms

Healthy Food from Healthy Soil

Objectives

Student will investigate how earthworms mix and till the soil.

Materials

- 1 gallon plastic milk jug
- plastic plates
- gravel
- Bedding mixture: peat moss, grass clippings, vacuum cleaner bag, debris, leaves, dryer lint, shredded newspaper, etc.
- earthworms
- Worm Adoption Certificate
- chopped (in a blender) fruit and veggie scraps

Time

Activity 1: 30 minutes, plus follow-up time.

Getting Started

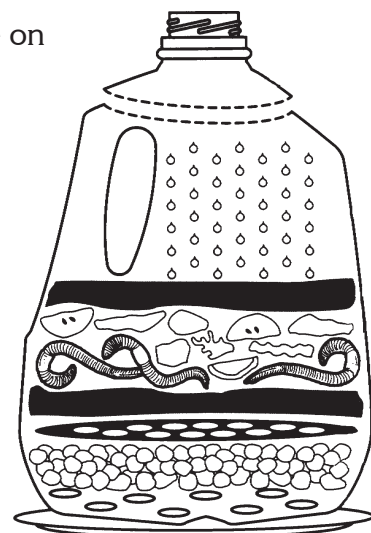
Request that each student bring in a 1 gallon plastic milk jug. Gather the remaining materials, and make the necessary copies. Worms can be ordered via the Internet. Check out these worm farms. Be sure to compare prices. Here is one reputable company, Kazarie Worm Farm, 352-463-7823, <http://www.afn.org/~kazarie>

Procedures

Activity 1 - Worms World

Before you begin have students fill out their Worm Adoption Certificate. It will definitely cut down on creature cruelty, and other discipline problems.

1. Cut the top from a clean clear plastic gallon jug. (You will want to do this for the students)
2. Poke holes for drainage in the bottom of the jug. Make sure you have a plastic plate under the jug to collect excess water.
3. Add 1 inch of gravel for drainage. If you provide shredded newspapers, and carefully watch the moisture content in the worm jug, you can omit the gravel.
4. Poke holes in a plastic lid or plate and place over the gravel.
5. Add 1 inch of bedding mixture on top of the plate.
6. Add a few earthworms.
7. Sprinkle some food scraps on top of the worms.
8. Cover with more bedding material. Sprinkle with water. ***Don't soak!***
9. Stir and observe daily. Record what you see in a daily log. Sprinkle with water and add food as needed.





Discussion

1. Will the population of your worms increase or decrease?
2. Were there certain foods the worms liked better than the others?
3. Do you think you will find worms in a “hot compost” pile? (not until it cools)

Background

Earthworms are found everywhere on the earth’s surface, except the north and south poles, where it is too cold. They can be so tiny you can’t see them without a microscope, or they can be several feet long. They are called by several names, “orchard worm,” “rain worm,” “angleworm,” “red wiggler,” “night crawler,” and “field worm.”

The earthworm has no head, no eyes, no teeth, and no antennae. Its body is made up of many ringlike segments. There is a swollen band, lighter in color than the rest of the body, and the front of the earthworm’s body. Earthworms have both male and female reproductive organs. They lay egg capsules that must be fertilized by another worm. Each egg capsule contains several baby worms, called wormlets. The wormlets come out of the capsules 3 to 4 weeks after the worm deposits the capsule near the soil surface. When they first appear they look like tiny threads, about 1/16th of an inch in length.

The worm is the gardener’s best friend. Night and day worms are burrowing through *acres* of soil, swallowing soil as they go. Inside the soil are tiny bits of plants and animals which they then grind up as they eat. Earthworms actually eat the soil. Through the process of digestion, nutrients that are locked up and unavailable are released in their waste called castings. Worm castings are characteristic lumps and bumps of soil that come out as part of the worm’s waste. Rich in nutrients such as nitrogen, potassium, and phosphorus, worm castings help plants to grow. The average earthworm will produce its weight in casting every 24 hours. One earthworm can digest several tons of soil in one year. Not only do castings add nutrients to the soil, but they also improve the soil’s ability to hold water, another bonus for plants. By tunneling through the soil, worms aerate the soil, providing a looser structure and openings for roots to grow. These tunnels provide channels for water to enter the soil and improve drainage. Worms are like small rototillers and bags of fertilizer in a very small, and somewhat slimy, package.

Vocabulary

acre: the unit of measure for land in the United States, 43,560 square feet. The amount of land a man and beast could plow in a day in the early 1800’s.

Worm Adoption Certificate

Number of worms adopted: _____

Lengths at adoption: _____

As the caretaker of these worms, I promise to:

1. Give these worms a comfortable, cool, moist, home, complete with a fresh air supply and curtains to keep out any harmful light rays.
2. Feed my worms a varied diet of healthy foods.
3. Treat my worms with care and respect, not handling roughly, or harming their tender bodies.

Signed by worm foster parent

Signed by official worm adoption witness

