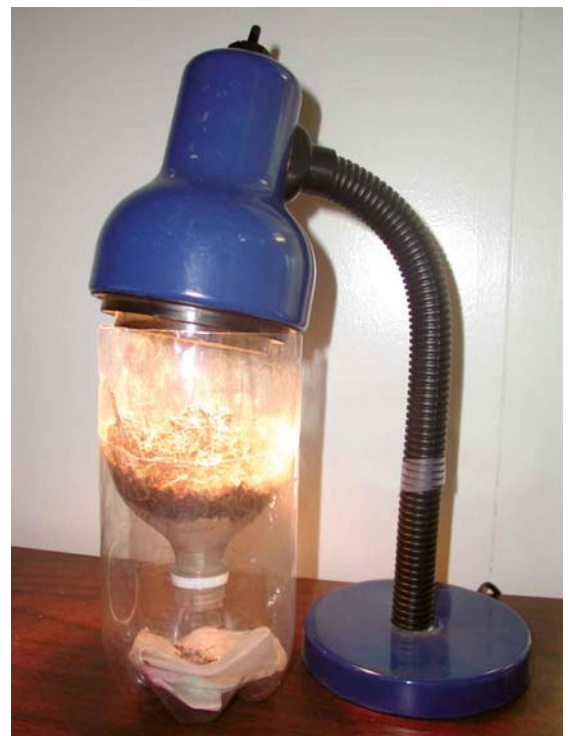
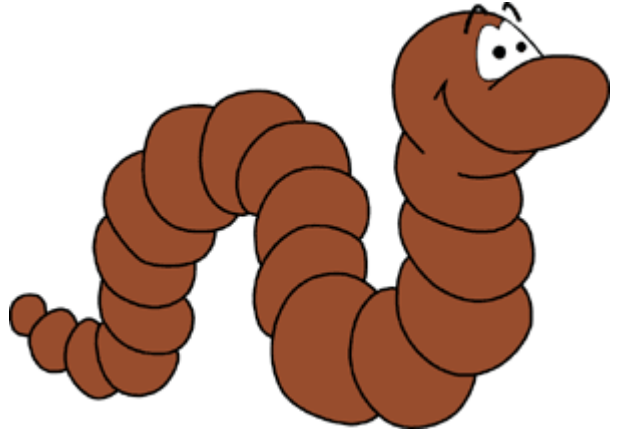


SOIL IS ALIVE... SEE IT WITH A BERLESE FUNNEL

Soil is alive! In fact, a single shovel full of rich garden soil contains more species of organisms than can be found above ground in the entire Amazon rain forest!

Soil organisms, an important part of the underground living system, can be divided into six groups: bacteria, fungi, protozoa, nematodes, arthropods and earthworms. Although most soil organisms are too small to see with the unaided eye, some nematodes, arthropods and earthworms can be easily removed from a soil sample and then observed.

The Berlese (pronounced “bur LAY zee”) funnel is an ingenious trap, based on avoidance behavior, used to remove organisms from the soil. The funnel can be made from a simple desk lamp and plastic pop bottle. Because soil organisms prefer a cold, dark and moist environment, like the conditions in soil, they try to escape when exposed to the heat, light and dryness created when a lamp shines directly on the soil.



A Berlese Funnel can be easily constructed using a desk lamp, 2-liter pop bottle and hardware screen.

Required Materials:

- 1 cup soil with plant litter
- 2-liter plastic drink bottle
- Paper Towel
- Rubbing alcohol or distilled water
- Hardware screen or plastic mesh
- Goose-necked reading lamp
- Hand lens or magnifying glass
- Cheesecloth

Directions:

- Carefully cut a 2-liter bottle in half (see picture).
 - Place a folded paper towel wet with distilled water or methyl alcohol in the bottom.
 - Invert the top half of the bottle into the bottom half to form a funnel.
 - Cut a piece of the screen/mesh, a little bit larger than the neck of the inverted top, and lay inside the bottle.
 - Gather soil from a garden, field or forest floor. Place one cup of it in a single thickness of cheesecloth and place on top of the screen in the funnel.
 - Position the desk lamp closely over the funnel so that the light warms the surface of the soil. To escape the heat and light, the organisms will crawl out of the soil at the bottom and fall into the container below.
- The alcohol in the paper towel will preserve any organisms that fall on it. Count the organisms and try to separate them into like groups such as worms, grubs (any wormlike organism with legs), snails or slugs, insects (3 pairs of legs) or spiders, mites and ticks (4 pairs of legs).