

**Grade Level:** 1-4  
**Science**

**Time:** One class period to set up, plus observation time over the next week.

**Materials:**

- Large wide mouth jar
- Soil
- Peat
- Sand
- Water
- 10-12 worms per jar - to locate worms outside dig in soft, moist soil
- Paper bag
- Dead leaves or other plant material

**Vermiculture** is the raising of worms to make compost.

**Vermicompost** is the mixture of decomposing vegetable or food waste, bedding materials, and pure *vermicast* (known as worm castings, worm humus or worm manure).

**Worm Tea is made by** leaching *vermicompost* in water (just like a tea bag). The resulting liquid after it has steeped for several hours is a tea-colored liquid that can be used to fertilize plants.

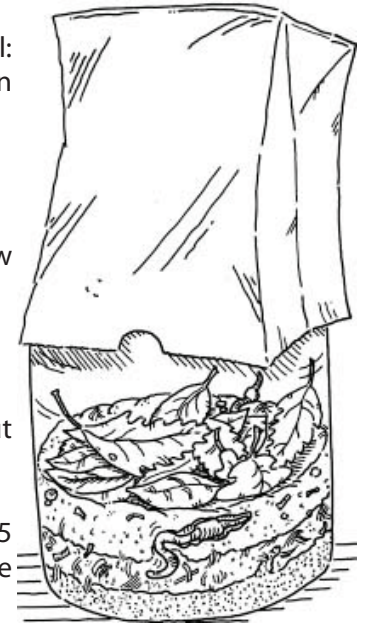
## Build a Mini Worm Bin

**Description:**

Discover why earthworms are considered a gardener's best friend. The mini worm bin, or "wormery", built in this activity allows students to observe the worms as they convert plant material into rich compost. These wormeries are easy enough to build that you may wish to make more than one. Consider having the students feed different types of plant material to the worms in different jars and observe how quickly/slowly worms can break down different material.

**Directions:**

- 1) Take a large wide mouth jar and layer the following material: first a layer soil, next a layer of peat, and then a layer of sand in the jar.
- 2) Water the layers until moist, but not soaking.
- 3) Place worms into the jar. Do not bury the worms, they know where to go.
- 4) Add to the top some dead leaves or other plant material.
- 5) Set a paper bag over the top of the jar. This will keep out light, while still letting in oxygen.
- 6) Worms used in compost systems prefer temperatures of 55 to 70 degrees Fahrenheit (12-21 degrees Celsius). Do not place jars in direct sun light.



**Observe Worms at Work:** Have students draw the jar and the pattern of leaves exactly as they see them. Label this drawing as "Start." Ask students to hypothesize about what will happen in the next week to the worms and the leaves. Have students check the jar daily and draw what they see and date their observations.

**Suggested Questions:** Have any of the leaves disappeared? Do the layers of soil, peat and sand look different? What does it smell like? Worms like to grab leaves and plant material and pull it down into their burrows to eat. Over the course of a week many leaves (or other plant material) will "disappear" and be converted into *vermicompost* by the worms.



**Can you guess why gardeners like earthworms?** When worms digest and pass soil through their bodies, they loosen the soil and mix nutrients. Plants grow better in looser soil with plenty of oxygen.

**Notes:** Worms adapt easily to living on plant waste inside a worm bin. To keep your worms healthy, make sure the wormery is damp (not wet) and keep it in a cool spot out of direct sunlight. When you are done with your wormery, return the worms to the soil outside.