

RECOMMENDED AGES: 2+ ✱ INSIDE/OUTSIDE ✱ ANY SEASON (INSIDE IN COLD AREAS)



A Home for Worms

DESCRIPTION

Creating a worm habitat is an excellent way to recycle food scraps from your classroom. A worm habitat is also a great place for children to observe and explore the wonder of worms.

BACKGROUND

Using worms to compost, or vermicomposting, is a great addition to any outdoor classroom. In a vermicomposting system, decomposition is performed by a type of worm called a red wiggler. Worms eat decaying material and turn it into worm castings, a nutrient-rich organic material that plants love. These worms are capable of eating from 50 percent to 100 percent of their weight in kitchen scraps each day. Students can watch food scraps turn into castings over a period of just a few months. When maintained properly, a worm habitat does not smell bad or cause any problems. Worm habitats work just as well indoors as outdoors, and the worms double as classroom pets! For more information about vermicomposting, see *Let Worms Make Your Compost* (p. 108).

MATERIALS

- ✱ Empty worm bin
- ✱ Bedding material (damp, shredded newspaper or cardboard; hay; coconut pith, etc.)
- ✱ 1 lb red wiggler worms
- ✱ Spray bottle
- ✱ Kitchen scraps
- ✱ (Optional) Burlap sack

PREPARATION

You will need to build a worm bin (see p. 117) or purchase one for this activity. The National Gardening Association offers a number of options at www.gardeningwithkids.org.

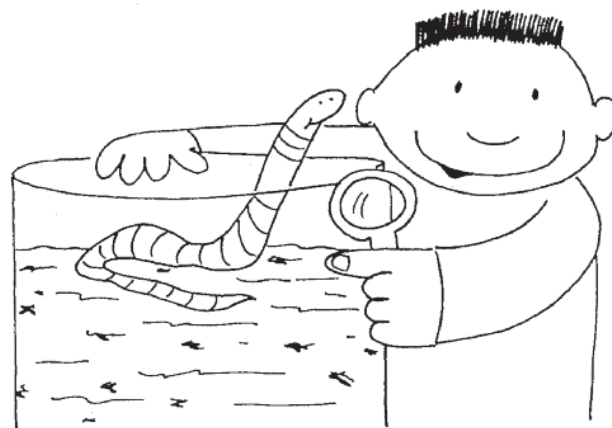
Gather bedding, making sure to use chemical-free material. Pesticides, herbicides, and fertilizers will kill the worms and aren't safe for a children's activity.

If you're using newspaper, choose papers without heavy dyes or gloss. The best choice may be to combine two or three types of bedding material.

Collect one pound of red wiggler worms. Red wigglers are not the earthworms your students will find in your garden soil. Red wigglers are a hardier species of worm that can live in warmer indoor temperatures as well as in the shallow layer of bedding material in your worm habitat. Red wigglers are sold by the pound. You can collect and use worms from someone else's active worm habitat, buy them locally (check at an area nursery), or purchase them online from the National Gardening Association (www.gardeningwithkids.org).

ACTIVITY

Lay out the bedding materials for your worm bin and show the kids the red wigglers. Explain that the worms need a home and the children are going to help you build it. Depending on how many children are in the class, you might need to divide them into pairs or small groups and assign each a separate task.



Explain to the children that worms need something to crawl through in their home and this will be your bedding material. Have each group add several handfuls of bedding to the bin, filling it most of the way. If you're using newspaper, show the children how to shred it into strips. Next, using a spray bottle, have one group dampen the bedding with water. Monitor this step carefully. The bedding should about as moist as a wrung-out sponge.

The habitat is now ready for its guests! Put a red wiggler and some soil in your hand and have the children describe the worm to you. Ask, *Why do you think they call these worms red wigglers?* A healthy, deep-red worm should give the answer away! Let children hold a worm if they'd like to, making sure they also have some dirt in their hands. The dirt helps the worms to retain their body moisture. Have children add all the red wigglers to the bin.

Worms need some time to settle in. After a week, it is time to add food. You can add about one quart of food every two to three days. Feeding appropriate kitchen scraps to your worms is very important. Worms don't do well with a lot of citrus, anything oily, or scraps with high water content. Never feed worms meat or dairy products. In addition to the obvious plant-based food scraps, such as banana peels, bread slices, and apple cores, your worms will also eat coffee grounds, eggshells, tea bags and shredded paper products, such as egg cartons. The smaller the scraps, the sooner they start to rot and the faster the worms can eat them.

After the children feed their worms, they should always cover the new food with more bedding to protect the worms. You can also lay a burlap sack over the top of the food and bedding. It will protect the worms and create a fun opportunity for the children to "tuck in" their worms.

Worms prefer a consistent moisture level in their home — the contents of your worm bin should always be as moist as a wrung-out sponge. Get your class on a regular watering cycle for the worm bin. At first, check the dampness of the bedding material frequently and keep track of how often and how much water you add.

TYING IT TOGETHER

As your worm bin matures, have the children explore it for organisms other than worms. The students should find some bugs they didn't add, such as pill bugs, springtails, or pot worms. Ask, *How do you think these visitors got in? Do you think there might be living things in this bin that we can't see with our eyes?*

Have your students compost leftovers from their lunches on a regular basis. Add "compost" to their regular routine of separating trash from recycling. At the end of every snack or lunch period, review the leftover scraps. Ask, *Would our worms think this plastic bag is yummy? What about this banana peel?* Give positive reinforcement for the love and care the children show for their pet worms. *Perhaps the worms will thank us with castings for our garden!*

DIGGING DEEPER

Try feeding your worms different sizes and types of scraps and compare how quickly they are eaten. *Do worms prefer one kind of food over another?* Ask children to think about why some scraps may have been left behind. *If these scraps are larger than other scraps, could they be taking longer to decompose? Were they added to the bin recently? Maybe worms don't like egg shells as much as they like coffee grounds!* Encourage children to speculate and ponder.

Be sure to involve your students in harvesting your worm castings (next activity)!