



Subject: Food Composting

Lesson: Preparing a Classroom Compost Bin

Standards Addressed: K.1.3, 1.3.9, 1.2.3, 1.3.9, K.LS.1, K.LS.2, K.LS.3, K.ESS.4, K.LS.1, K.LS.2, K.LS.3, K-2.E.1, 1.LS.2, 1.LS.4, 4.ESS.4, 5.LS.1, K.RV.1, 1.RN.1, 1.RV.1, 2.RV.1, 3.RV.1, 4.RV.1, 5.RV.1

Objectives: Students will set up a worm composting system, and learn about the importance of worms in the life cycle and as transformers of garbage

Materials Needed: Worm Bin, Bedding Materials, Handful of Soil, One Pound of Worms, Water, Collection Container, Worms at School Worksheet

Steps:

1. Introduce worm composting by discussing life cycles, the importance of worms in nature, and worm composting as a waste management strategy.
2. Buy, scrounge, or build a worm bin: A worm bin can be made of wood, plastic, or other materials. The size of your classroom worm bin should be at least 1 ½ square feet, and about 16 inches deep. Good ventilation is essential for aerobic decomposition and a healthy environment for worms.
3. Prepare Worm Bedding: Tear newspaper into ½" to 1" wide strips (tear lengthwise, with the grain). Dunk newspaper strips in water and add to bin (or mist dry strips with a water bottle so they are moist but not sopping wet. Add a handful of soil and fluff. Toss everything like a big salad.
4. Add worms and food: Purchase or obtain about 1 pound of red worms (about 500 to 1,000 worms) Gently place your worms in the moist newspaper bedding near the bottom of the bin. Put a handful or so of food waste near the worms and cover well with the moist newspaper bedding. Add more dry shredded news paper to fill the bin, and then a layer of burlap or cloth.
5. Explain that using worms to compost our food scraps makes sense for a lot of reasons:
 - We will reduce the amount of garbage we create.
 - Compost improves the soil and makes it hold water better.
 - Using compost reduces the need for chemical fertilizers, which helps prevent the creation of more pollution.
 - Composting with worms is fun!
6. Let your worm bin rest by not adding additional food for 1-2 weeks. This allows the worms a chance to get acclimated to their new environment and for the food to begin to decompose.
7. For ongoing maintenance, feed every three to seven days, always burying the food under paper. Do not overfeed. Bad smells or large amounts of uneaten food indicate overfeeding. Add more paper as needed to cover food.
8. Harvest castings after three to six months.

Resources: Source: Cindy Nelson, Alameda County Master Composter/LITES Program; Mills College, Oakland, CA

http://www.cvswwmd.org/uploads/6/1/2/6/6126179/do_the_rot_thing_cvswwmd1.pdf

Follow Up Activity: See Appendix A

Notes:

Background Information

Worm composting is a fun, low-maintenance way of recycling your organic kitchen scraps. Worms eat your vegetative food scraps, turning them into a high-quality fertilizer known as worm castings. You provide the living environment for the worms—the bin, bedding, and food—and the worms do the rest. Worm composting can be done inside or outside (depending on climate), requires no turning, is odorless if done correctly, and can be done in small spaces. Worm composting is most appropriate for food scraps. The compostable matter we throw away—such as apple cores, melon rings, and soggy bread—are things that worms like to eat. Redworms eat food scraps and break them down into rich, dark brown, earthy-smelling material called worm castings. Castings, which are nitrogen-rich fertilizer, can be returned to the earth and are good for lawns, gardens, and houseplants.

Management Skills

Since participants will be setting up a worm composting system in the classroom, it is necessary to secure both worms and a steady supply of worm food. Worm bins need regular maintenance. Please be mindful not to overfeed.

Worms at School



HERE ARE JUST A FEW "KITCHEN SCRAP" TYPE THINGS WORMS LOVE TO EAT!

								
APPLE CORES	ORANGE PEELS	EGG SHELLS	SHREDDED PAPER	TORTILLA CHIPS	COFFEE GRINDS	MELON	LETTUCE	BREAD CRUST

- LIKE HUMANS, WORMS NEED _____, _____ & _____ TO LIVE.
- SHREDDED PAPER PROVIDES THE _____ FOR WORMS TO LIVE IN.
- WORMS MAKE _____ THAT CAN BE USED ON PLANTS.

Name: _____ Date: _____