Teva Topsy Turvy Bus Tour Vermicomposting Activity

"Each person should consider himself as a worm, and other creatures his friends in the world."
-Baal Shem Tov

Why Vermicompost?
Composting is nature's way of recycling and replenishing. In nature worms and other invertebrates are constantly munching their way through the soil and breaking down organic matter, leaves, fallen trees and anything else that was once living. Vermicomposting is simply composting with worms (red wigglers to be precise). Worms speed up the process and enhance the finished compost with incredible nutrients and enzymes from their digestive tracts. Vermicompost is one of the richest forms of fertilizer in the world!

Jewish Content:

In the Kabbalistic tradition of Rabbi Isaac Luria, the world was created through God's words, which were held in glass vessels. Unable to contain the power of their possibility, the vessels shattered, and their shards scattered to the corners of an imperfect earth. We are now left as the gatherers of these holy sparks, or klitat ha'nitzot.
(Adapted from Adam Edell, Jewish food blog "The Jew & The Carrot")

What is holy to you? What is holy in the Jewish tradition?

Could your trash by holy? Could you use it to make a positive difference in the world?
With the help of the worms, we can turn our waste into soil to grow food for ourselves and others.

A Bracha turns an event into a moment. When finished with your worm bin, say a blessing: Shehechianu, "v'alchalta, v'savata, uv'rachta" ("If you have eaten and are satisfied, then bless") or make up your own bracha. Feel free to acknowledge the part of this project that is meaningful for you - the amazing process of composting, the origin of the food scraps or the labor of the worms, etc.

Making a Worm Bin

Materials:
- plastic bin sized approximately: 15"h x 2'w x 2'l (to make your own from wood, see link below)
- drill with bits sized 1/8 inch
- ripped up dried leaves or dead plants, shredded newspaper, ground cardboard for bedding
- soil for bedding
- 1 lb red wigglers (to purchase, see links below)
- food scraps, cut into small pieces
- water

Instructions:
Take a plastic or wooden container and turn it into a vermicompost system by drilling air holes in the sides and top. You can either build your own container out of wood in your woodworking *chug* (activity) – see Whatcom.wsu.edu for more info, or you can purchase a plastic container with a lid from a hardware or department store. A bin that is sized: 15"h x 2'w x 2'l is best. Students/campers can drill the holes themselves with careful supervision from an adult. Students/campers can also decorate the bin with paint, colors and Jewish quotes about worms, soil, renewal, etc.

Since worms do not like light, an opaque container is preferable to a translucent one, unless the bin is kept covered with a dark cloth. The larger the container, the more you will be able to compost. A deep bin is preferable to a shallow one.

Once you have acquired a bin, drill holes approximately 3" apart in the sides and cover of the bin. The holes should begin approximately 4" from the bottom of the bin. The diameter of the holes should not be wider than 1/8". Some guides recommend drilling holes in the bottom of the bin for drainage. If you provide drainage holes, you will need a tray to catch excess moisture. If you do not provide drainage holes, you will need to add extra dry material if puddles develop in the bottom. Red worms thrive in a damp environment, but puddled water will make your bin smell.

How do I prepare the bin for the worms?

First, you will need bedding for the worms. The worms eat the bedding as it decomposes, turning it to compost along with the kitchen scraps you add. The bedding should be a high-carbon material, such as fall leaves (best if small or shredded), shredded paper (such as newspaper, paper towels, napkins, paper bags), or ground cardboard. Have your students/campers rip up a pile of newspaper or leaves to line your compost bin. Dampen the bedding (the easiest way to do this is with a spray bottle; feel free to let your campers/students do it) until it is as damp as a wrung out sponge. It is important to keep the bedding this damp or the worms will die. Mix in a few handfuls of soil or finished compost. Fill about 3/4 of the bin with bedding and soil. Now it's time to add the worms! Add 1 pound of red wigglers.

Where to buy Worms

Urban Worm or Uncle Jim's Worm Farm

Feeding time!

To start your compost, feed your worms raw vegetables and fruits, coffee grinds, tea bags and crushed eggshells. Do not feed them meat, dairy, or fish.

Have your students/campers bury the food scraps completely, so that they are always covered by bedding; this prevents stench and fruit flies. As the worms cannot eat the food until it starts to decompose, it is best to chop the food scraps into small pieces. You should aim for a Carbon (leaves, bedding materials)**:** Nitrogen (food scraps) ratio of 25:1 to 30:1.

Troubleshooting: Contact us at **teva@hazon.org** and/or see below

PROBLEM	DIAGNOSIS	TREATMENT
Worm bin smells	Too much food	Stop adding food.
	Not enough air	Gently stir contents.
	Too moist	Ensure proper drainage: check that drainage holes are clear, drill more holes.
		Add more carbon: shredded newspaper or cardboard, ripped dead leaves.
	Too many acidic foods	Cut back on acidic foods (citrus, coffee grounds, etc.)
		Add some ground eggshells.
Fruit flies	Food left exposed	Always bury food. Cover surface of bin with plastic sheet, old carpet or sacking.
	Too much food	Don't overload the bin.

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