Worm Farm

Category	Activities
Advancement	Living with Nature
Time to allocate (mins)	
Outcome	Teach about living with nature, how the different bacteria and bugs in our gardens break and recycle back into the soil
Resources	

So you want to be a Vermiculturist or a Worm Wrangler?

Raising worms can be an exciting activity and a great hobby. Do you have someone in your family that likes to go fishing or loves to garden? As a worm wrangler you can learn how raising worms can add fun to other family hobbies, as a vermicompost gardener you can smile and show off your prized flowers and favorite vegetables and just wait and see how excited the fisherman in your family gets when you show them how much your worms have grown.

Your First Worm Bin!

The easiest-to-build first worm bin is just a plastic or wooden box with air holes. It may be simple to you, but it's a dream home to redworms! For short term worm farms, use old glass bottles and make holes in the lids (old coffee bottles work well)

Are you using the Right Worms?

Earthworms live in many different environments. Some live under the ground, like nightcrawlers. Others live above the soil, wherever there are piles of leaves or animal manure or dead plants. (You'll see them in our compost piles, too). Redworms won't live down in the soil. "So, don't take burrowing worms from your garden soil — they won't live in a worm composting bin."

Redworms Are People, Too!

You need air, water food and warmth to live. Redworms need the same things! They're a lot like people, really. Their needs, one-by-one, are:

Air You breathe through your mouth. Then air and oxygen go into to your lungs, where a moist layer of skin absorbs oxygen. Worms have lungs, too — their skin! The whole surface of their skin absorbs oxygen, it passes through, and enters their blood. Carbon dioxide passes through, toward the outside.

Moisture Worms wiggle and move by squeezing muscles around their bodies. Their bodies are filled with water (even more than ours)! They also need water to breathe through their skin. (Did you know that worms can live in the bottom of a fish tank, if the fish don't get to them? There's plenty of air in the water in a fish tank, for the worms and the fish to breathe.)

Bedding's Not Just For People

Beds Redworms don't sleep in beds, but we set up a worm bin with lots of bedding in it for

redworms to live in. Oh — they'll eat it, too!

Good Beddings:
• white paper
• newspaper (not glossy pages)
• cardboard
• brown leaves
• straw
• coconut husk fiber (coir)
Shred all paper and cardboard into small pieces before using. Mixing types of beddings is great. Make it damp, but not dripping wet, then add it to the bin. (Make it feel like a wrung-out sponge). Feeding Your New Pets - Redworms will eat one-quarter to one-half of their weight per day. Do you eat that much? (I hope not! Feed your worms lightly for the first few weeks, as they get used to their new home. Hint: always mix in some good compost or worm compost in a new bin, if you have it — the bin starts decomposing food waste faster that way. Feed your new pets every day, or just a couple of times a week.

Instructions

Feed worms:
• bread
• spaghetti
• funny-smelling leftovers
• fruit peels and cores
• vegetables
• eggshells
• lots of other foods

Don't feed
• meat
• dairy
• fatty foods
• citrus fruit
Chop up your kitchen food scraps for them. It gets eaten faster that way.Question: How many teeth do redworms have? Answer: None, they have to wait for bacteria and fungi to start eating the food first, and soften it for them.)

Bury Dinner in Their Bed!

When you feed your worms, bury the food in somewhere in the bedding, at least 3" deep. Don't worry, the worms will find it. Change feeding spots each time you feed. After a month or so, it's good to add more bedding, once a week or so. Best Temperature & OK Temperatures A worm bin will eat up the most food waste when the bedding is 70°F-80°F. All the bacteria are happy, and worms are most comfortable. Down at 45°F, the bin slows down, and at 30° worms can freeze. Who Else Lives in the Worm Bin? There's lots of other critters living in a worm bin. Here's the short list:
• bacteria
• fungi
• protozoa
• microarthropods
• Springtails
• Sow bugs
• Fruit flies
• Pseudoscorpions
• mites

All Critters are Good, & Only Live in the Bin!

All these critters work hard at decomposing what you feed your worm bin (the ecosystem). Conditions are good for them there — you kept it warm and their only interest is in decaying organic matter — they won't bother your house or garden plants.

Keeping Worms the Easy Way

Now and then it helps to check for and remove excess moisture that may collect in the bottom of your bin (particularly common in plastic bins). Standing liquid may promote the growth of anaerobes, whose by-products stink and are not good for plants. Wooden bins "breathe" and will tend to experience more drying than plastic bins, particularly in dryer climates, and so may require occasional rewetting. "Stink" in a worm bin is a sign that too little oxygen is reaching part or all of the worm bin system. If you find an area that stinks, where food waste and/or bedding are very wet or compacted, you'll want to mix in more dry bedding and reduce your feeding in the future.

Harvesting the Gold

After operating your bin for three to five months (or even more if you prefer dark, very finished-looking vermicompost), it's time to harvest your bin. Dump out the contents onto a plastic-covered table in daylight or under a bright lamp and form many small piles of material. The worms will dive down, and in a few minutes you can remove a small amount of vermicompost free of worms. Ten minutes later, the worms in each pile will have gone down again and you can continue to remove the vermicompost. When you're finished, re-bed the worms and you're done! The vermicompost you harvest can be used directly in your garden or on your houseplants. It's an excellent fertilizer that you can use sparingly. Because it comes from an earthworm, however, it will not burn plants if you use more. Mixing it with coir (coconut husk fiber), topsoil, compost and vermiculite or perlite in equal amounts creates a good potting soil.

Entry written by Sharon Venn of 1st Randburg