

Worms! Worms! Worms!

Have you ever seen a worm? Used one for fishing? Where do they come from? You can grow worms. Some people make money growing and selling worms or the compost they make.

1. Vermiculture: The raising of worms under controlled conditions. Vermi-wormlike, Vermicelli – kind of thin spaghetti
2. Vermi compost: A mixture of partially decomposed organic waste, bedding, worm castings, worms, cocoons, and other organisms
3. Worm Castings: Worm manure
4. What to use compost for: Use as a soil amendment – makes soil drain better, and hold more water too!
5. Use as a source of nutrients for seedlings to build tissue so they can grow. Supplemental fertilizer for seedlings.
6. Mix with potting soil for houseplants.
7. Red Worms or Red Wigglers – Animal Kingdom, Genus: Eisenia (MAN NAMED Eisen) species: fetida (Fetid means bad smell. They smell foul if handled roughly). So handle them very gently when we give you the chance. HOMO – PRIMATE, SAPIEN - WISE
8. Earthworms or night crawlers– Lumbricus(worm) terrestris (of the earth)
9. First a model, then after you will look at under microscope. Beginning (Anterior) End (Posterior)
10. Red worms have 120-170 segments
11. Setae on each segment are small hair-like features called help worm move. Not really hair, since only mammals have hair. So do worms have hair? **No**, but hair-like setae for moving.

Prostomium—flap over mouth; food filter

12. Worms have no eyes.
13. Cells in front are sensitive to light.
14. Worms breathe through their skin. • Skin must stay wet. – Wet paper towels.
15. Worms eat plant parts that were once living – organic matter and also bacteria, fungi.
16. Food is ground up in gizzard. Add soil as grit, to their bedding to help them grind it up.
17. How many hearts? Count them: 5 hearts. They surround the digestive track.
18. How do they reproduce or make more worms? They hatch from cocoons.
19. Worms have both female & male reproductive organs. They are hermaphrodites, both male and female parts, but the still need two worms.
20. Worms join together at the clitellum and a cocoon is formed. Clitellum forms at 4-6-weeks old.

21. Cocoons are the size of a match-head and lemon-shaped. (See under scopes)
22. One to five worms per cocoon. • Baby worms hatch in 2-3 weeks.
23. **In vermiculture, their home is a bin.** Eisenia fetida or red worms are native to Europe. They do not live in soil, but in the layer of leaves and naturally decaying plant material on the forest floor, and can digest a lot of material, so they are good at eating fruit and vegetable peelings and turning it into compost.
24. Use your recycled newspaper for bedding. • Be sure not to use the glossy newspaper.
25. Tear the newspaper into 1 inch strips.
26. Pack the newspaper down.
27. The newspaper must be moist like a wrung out sponge.
28. Add a handful or two of soil to the bedding and mix it in.
29. Microorganisms in the soil help the worms decompose the food.
30. The soil also helps the worms to digest food.
31. Feed worm only things that were once plant material, NOT animal material, and not glossy paper:

Potato peelings	Orange rinds	Tea bags	<i>NO Salad dressing</i>
Carrots	Grapefruit	<i>But NO</i>	<i>NO Mayonnaise</i>
Lettuce	Cornmeal	<i>NO Animal bones</i>	<i>NO Greasy Foods</i>
Cabbage	Oatmeal	<i>NO Meat, poultry, and fish</i>	<i>NO Glossy colored paper</i>
Celery	Crushed eggshells	<i>NO Cheese</i>	
Apple peelings	Coffee grounds with the filter	<i>NO Butter</i>	
Banana peels			

32. When you feed the worms, be sure to bury the food in the worm bin 3-4 inches under my bedding.
33. One thousand worms (one pound) of worms will eat about one half to one pound of food scraps each day. Little creatures working together can accomplish a LOT!
34. Bedding too dry: add water
35. Bedding too wet: add more newspaper
36. Odors: Check for rotten food and remove
37. Mixing bedding: use a plastic fork
38. Check buried food area weekly
39. After six weeks: add more bedding
40. Manage temperature: 68-72 degrees is ideal – just like your home.