

Worms!

Overview Here we're going to discuss the differences between three types of worms; flatworms, roundworms, and segmented worms. The word "worm" is not, in fact, a scientific name. It's an informal way of classifying animals with long bodies and no appendages (no including snakes). They are bilaterally symmetrical (the right and left sides mirror each other). Worms live in salt and fresh water, on land, and inside other organisms as parasites.

If you're fascinated by worms but frustrated that you can't see them do their work underground, then this worm column is just the ticket for you. By using scrap materials from the recycling bin, you'll be able to create a transparent worm farm.

What to Learn The differences between the three types of worms we will discuss depend on the possession of a body cavity and segments. Flatworms have neither a body cavity nor segments. Roundworms only have a body cavity, and segmented worms have both a body cavity and segments.

Materials

- two 2-liter soda bottles, empty and clean
- one brown paper grocery bag
- 20 red worms
- newspaper, old leaves, peat moss, and/or straw for worm bedding
- last night's dinner, organic scraps, plant material for worm food

Experiment

How to make the worm column:

1. Cut the top off of bottle#1 above the shoulder
2. Poke 8 holes in a ring around the top of bottle#1
3. Poke 8 holes in a ring around the middle of bottle#1
4. Poke 8 holes in a ring around the hip of bottle#1
5. Poke a hole in each of the feet of bottle#1
6. Cut bottle #2 in half
7. Place bottle #1 inside of the bottom of bottle#2
8. Put the top of bottle#2 on the top of bottle#1
9. Measure the paper that you will use to darken your worm farm(roll the whole column in a paper bag and then tape it. Cut the paper column that you now have so that you can see the top of the worm column. Tape the paper column with one piece of tape on top, if you hang the worm column)
10. Put strips of ripped newspaper in bottle #1. You may want to dip them in water first.
11. Put soil in with the newspaper and mix it up a little.
12. Fill bottle #1 about 2/3 with the newspaper and soil mixture.
13. You may add crushed egg shells to the paper/soil mixture as well.
14. Put the column back together.
15. Feed food scraps every 3-4 days.
16. Create a Data Table.

Worm Column Data Table

Attribute	Description
Length?	
Outer layer—hard?segmented?	
Legs?	
Antennae?	
Main similarities?	
Main differences?	

Reading

The differences between the three types of worms we will discuss depend on the possession of a body cavity and segments. Flatworms have neither a body cavity nor segments. Roundworms only have a body cavity, and segmented worms have both a body cavity and segments.

Flatworms (Phylum Platyhelminthes) have incomplete digestive systems. That means that their digestive system has only one opening. The gas exchange occurs on the surface of their bodies. There are no blood vessels or nervous systems in flatworms. Some are non-parasitic, like the Sea flat worm, and some are parasitic, like the tapeworm.

Roundworms (Phylum Nematoda) have body cavities—as contrasted with flatworms which do not. The body cavity allows roundworms to have complete digestive tracts (both a mouth and an anus). The mouth and anus are connected by a gut—where the food is digested. They also have a simple nervous system and brain.

Roundworms can be parasites of plants and animals. In dogs they are often know to cause heart problems. In humans roundworm parasites can sometimes cause a swelling disease called elephantitis.

Annelids or Segmented Worms (Phylum Annalida) the most developed of the three, have both a body cavity and segments. Their body cavity helps give them structure—it serves as a hydroskeleton. By “segmented” it’s meant that they are divided into repeating units. They can be non-parasitic (i.e. earthworms) or parasitic (i.e. leeches). Interestingly, the giant red leech only eats giant earthworms.

Exercises

1. What are three types of worms?
2. What are the characteristics of each?
3. What are the elements of a complete digestive system?
4. What are some benefits of worms in gardening?

Answers to Exercises: Worms!

1. What are three types of worms? (flat, round, segmented)
2. What are the characteristics of each? (flat worms have an incomplete digestive system and no body cavity; round worms have a body cavity and a complete digestive system; and segmented worms have a body cavity and repeating segments)
3. What are the elements of a complete digestive system? (a mouth, an anus, connected by a gut).
4. What are some benefits of worms in gardening? (They churn the soil; they decompose plant matter into fertilizer; they dig tunnels allow roots to plant themselves more easily.)