

Decomposers

1. WATCH & READ

ENGAGE



Dead Stuff: The Secret Ingredient in Our Food Chain

Or type this URL into your browser window: <https://tinyurl.com/y7rord6n>

EARTHWORMS ARTICLE

At first glance, earthworms can seem kind of gross. They're slimy, they live in the dirt, and they wiggle around frantically on the sidewalk after rainstorms.

But earthworms are an extremely important part of our ecosystem. Without them, soil would not be as fertile, and the plants that grow there might not have easy access to nutrients!

Worms eat the organic matter—dead leaves, animal droppings, and stuff like that—that falls on top of dirt. When a worm eats, it breaks large pieces of organic matter into smaller ones. Its digestive system also secretes chemicals which convert this material into rich, fertile soil called **humus**.

Worms also use a special digestive organ, called a **gizzard**, to break down small rocks and large clumps of dirt into smaller particles. This process turns important mineral nutrients, like nitrogen and phosphates, into forms that plants can easily absorb through their roots.

Finally, when earthworms burrow through the soil, they create channels that allow oxygen and nitrogen to flow through. These channels also help water drain deep into the soil, instead of creating puddles on the surface.

For these reasons, earthworms are like farmers' best friends. Fertile cropland may have more than 400 worms burrowing through every square meter of soil. Without a big, healthy worm population, plants won't grow to be big and healthy, either!

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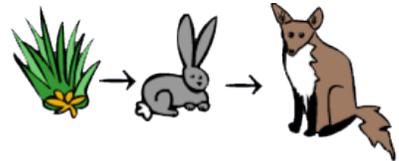
2. Answer: Use the article and video above to answer these 7 questions

1) Are decomposers alive? _____

2) What would be different about our world if there were no decomposers?

3) Draw a simple food chain in the space below:

Example:



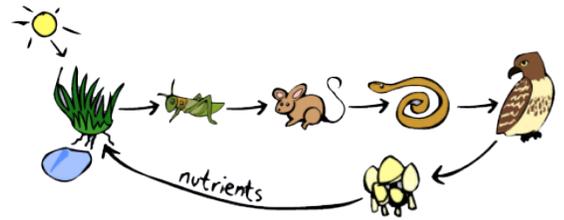
4) Now draw a bigger food chain using 5 forms of energy: Example:



5) What is the green food chain compared to the brown food chain?

6) Can you draw a food chain that uses decomposers?

Example:



7) Think about what you already know about insects. How many legs do they have? How many body parts do they have? Do they have a skeleton?

With that in mind, are earthworms an insect?

List as many reasons as you can to support your answer.

3. Activity: Explore your outdoor space

EXPLORE

1) Gather some examples of the materials that you might find in the top layer of soil like leaves, grass, sand, rocks, and other natural material. Make a pile of these things and use your hands and feet to break them down into the smallest possible parts you can (tear, smash, stomp, shred, etc.).

Is it top soil yet? If not, why?

2) Find a space where you can dig down into the ground to the soil. What does it look like? Smell like? What color is it? Can you find any natural materials in your top soil? Does it look like the top soil you tried to create, or is it more broken down?

3) Find a rock, log, or anything that has been sitting on the ground for a little while. Roll it over. Is there anything living underneath? What do you find? Look carefully. How many insects or worms do you see? How many decomposers other than bugs do you see? Remember fungus and moss counts too!

See if you can find 10 total decomposers in your space. Look in other areas if you need to. Make a list of what you have found in the chart on the next page. You will use this list later.

EXPLAIN

What did you find?	How many did you find?
example: worm	example: 5

Draw a detailed picture of one of the bugs you found. If you didn't find anything, draw a picture of what you think you would have found. Label the characteristics that make what you found interesting. Write down any questions you may have about that bug

Type:

Where I Found It:

Color:

Number of Legs:

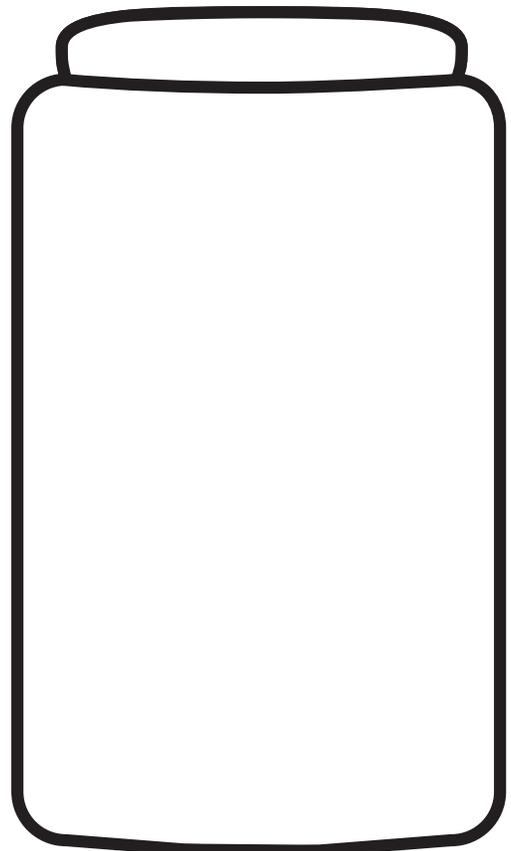
Can it Fly:

Does it pinch or bite:

Observations About My Bug:

1)

2)



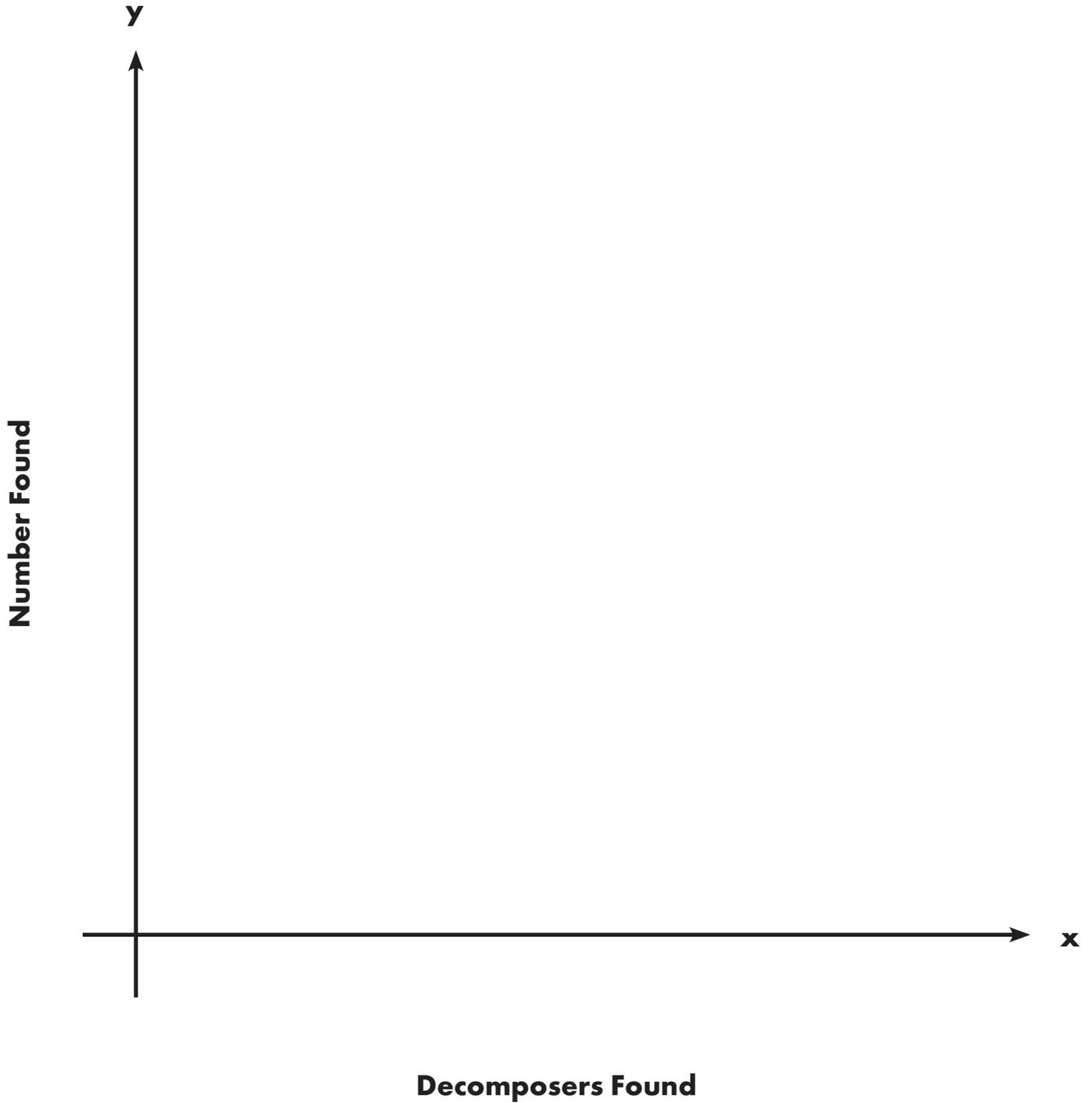
4. Compile Results

EXTEND

As a class complete the following table and graph.

What did you find?	How many did you find?
example: worm	example: 5

Activity: Create a bar graph of the decomposers found by your class



5. Reflect

EVALUATE

Earthworms and other decomposers act as helpers as they help break down organic matter into smaller pieces and nutrients. Those nutrients then become the food or building blocks for other living plants and animals.

Can you identify important helpers in your life? How do they help? What kind of help do they provide to you that is critical to your survival?

How are you a helper to others? Can you think of any other ways you make it easier for someone to do something by offering your services or resources? How can you be a helper to someone today?

Extras:

LINKS IN A FOOD CHAIN

Author Unknown

There once was a flower that grew on the plain. Where the sun helped it grow, and so did the rain -- links in a food chain.

There once was a bug who nibbled on flowers, nibbled on flowers for hours and hours! The bug ate the flower that grew on the plain, where the sun helped it grow, and so did the rain -- links in a food chain.

There once was a bird who gobbled up bugs, and creepies and crawlies, and slimies and slugs. The bird ate the bug, who nibbled on flowers, nibbled on flowers for hours and hours! The bug ate the flower that grew on the plain, where the sun helped it grow, and so did the rain -- links in a food chain.

There once was a snake who often grabbed birds, and swallowed them whole, or so I have heard. The snake ate the bird, who gobbled up bugs, and creepies and crawlies, and slimies and slugs. The bird ate the bug, who nibbled on flowers, nibbled on flowers for hours and hours! The bug ate the flower that grew on the plain, where the sun helped it grow, and so did the rain -- links in a food chain.

There once was a fox, and I'll make a bet: He'd eat anything he could possibly get. The fox ate the snake, who often grabbed birds, and swallowed the whole, or so I have heard. The snake ate the bird, who gobbled up bugs, and creepies and crawlies, and slimies and slugs. The bird ate the bug, who nibbled on flowers, nibbled on flowers for hours and hours! The bug ate the flower that grew on the plain, where the sun helped it grow, and so did the rain -- links in a food chain.

The fox, he grew older and died one spring day, but he made the soil rich, when he rotted away.