

What's Different About These Worms?

Summary

Students observe three different worm models. They will identify what is living and nonliving with the Worm Model Characteristics. After discussing similarities and differences, the students will predict how the three worm models will react when using a flashlight, a heat source (the sun), and water for moisture.

Materials

- *Inchworm And A Half*
- [Worm Model Characteristics](#) pdf
- [I Noticed](#) pdf
- Pencil
- Colored pencils
- Magnifying glass
- Ruler (inches and centimeters)
- Fraction ruler
- Paper towels
- Popsicle stick
- Plastic gloves
- Plastic worm
- Gummy worm
- Live earthworm
- [How do these Worms React?](#) pdf
- 3 bowls
- Light source
- Heat source
- Water

Additional Resources

- Into the forest (into the forest food game) - 2-6 players, age 7 and up. Ampersand Press 1-800-624-4263
- Onto the forest card game - 2-6 players, age 7 and up. Ampersand Press 1-800-624-4263
- Onto the desert card game (game of survival) - 2-6 players, age 7 and up. Ampersand Press 1-800-624-4263
- Predator card game (game of) - 2-6 players, age 7 and up. Ampersand Press 1-800-624-4263

Books

- *How to Eat Fried Worms*
, by Thomas Rockwell ISBN 0440445450
- *Inchworm And A Half*
, by Elinor J. Pinczes ISBN 068311017
- *Interesting Invertebrates*
, by Elaine Landau ISBN 0-531-20036-1 Worms, by Jill Bailey ISBN 157572665-3
- *I Wonder What It's Like to Be an Earthworm*
, by Erin M. Hovanec ISBN 0-8239-5454-4
- *Diary of a Worm*
, by Doreen Cronin and Harry Bliss ISBN 006000150X

- *The Important Book*
, by Margaret Wise Brown ISBN 0-06-443227-0

Media

- *How to Eat Fried Worms*
, by Thomas Rockwell; New Line Cinema: Distributors; Item #42231

Background for Teachers

Earthworms are incredibly useful to our environment. Without the aid of earthworms, every living thing that dies would just keep piling up and we would be trying to push through it. Talk about a recycling problem! Earthworms (often called night crawlers or fish worms) are invertebrates (without a backbone). There are around 4,400 species of worms on our Earth and 2,700 different kinds of earthworms. Earthworms are very important animals that aerate the soil and mix the top rotting materials with the ground below. Earthworms like other living things cannot live without food, water, shelter, and space. They eat soil and the organic material in it such as insect parts and bacteria like e-coli and enrich the soil with their worm castings or worm "poop." They can eat their own body weight each day and their castings make humus, "a moist, dark, nutritious material perfect for plants. Earthworms have no ears, eyes, teeth, or legs, but have a tiny brain and five hearts. Many earthworms can grow new body segments and body parts if they get hurt. Earthworms have muscles and hairy bristles called setae (see tee) that help them move. Earthworms rely on sensory devices near their mouths and sensory receptors in their skin to detect light and feel vibration. Earthworms are hermaphrodites (possess both male and female reproductive organs but it cannot mate with itself). They double their population about every six to eight weeks. Some things that earthworms are found to like are oatmeal, old bread, vegetable scraps, leftovers, shredded newspaper, grass, mulched leaves, ripe fruits, etc. Some things that they try to avoid are: acidic and spicy foods, salt, and vinegar products. Their size ranges from less than an inch to over 22 feet long. The largest earthworms are found in South Africa and Australia.

This activity will allow the students to observe three different worm models. The students will identify what is living and nonliving with the *Worm Model Characteristics*. After discussing similarities and differences, the students will predict how the three worm models will react when using a flashlight, a heat source (the sun), and water for moisture on the second part of this activity. The students will discuss and conclude their findings on the *I Noticed worksheet*.

Intended Learning Outcomes

Science

1. Use science process and thinking skills.
2. Manifest science interests and attitudes.
4. Communicate effectively using science language.

Math

1. Develop a positive learning attitude toward mathematics.
5. Connect mathematical ideas within mathematics, to other disciplines, and to everyday experiences.

Instructional Procedures

Invitation to Learn

Provide a plastic worm, a gummy worm, and a live worm, for each student to observe. Students should use a hand lens (magnifying glass) to observe and illustrate (draw) the three different models. Have the students observe the three models and discuss with their partners all the things that are alike and different. Then pass out *Activity Worm Model Characteristics* and have students complete this worksheet. After giving sufficient time, ask students to turn *Activity Worm Model Characteristics* over to *I Noticed!* and have them list any additional characteristics they noticed.

What's different about these worms? Administer equipment, one for each pair of students unless otherwise indicated.

Instructional Procedures

Compare- The students will share with a partner how the three worm models (plastic worm, gummy earthworm, and live earthworm) are alike and different. Compare, sort, and identify living and nonliving worm models and explain to their partner what makes an organism living or nonliving.

Classify- The students will each draw the three models of worms and write what is alike and different about each of these models using *Worm Model Characteristics worksheet*.

Infer- Using the KW L-- the students will each write what they *know* about worms and what they want to know (on paper or science journal or "Worm Journal").

Predict- Students will predict how all three worm models will react to: a light source (flashlight), a heat source (sun), and to moisture (water) one model at a time. Each student will write his/her prediction to the three sources on his/her paper or journal.

Observe- Students will observe and discuss with their partner the effect of change on the live model.

Record- Each student will record the effect of change that the light source, heat source and moisture had on the live worm model.

Extensions

Research the websites on worms listed in Additional Resources.

Check out books and magazines on the subject.

Make your own worm habitat. (See website in Additional Resources.)

Do a written/oral report about earthworms.

Family Connections

Read, *How To Eat Fried Worms*, by Thomas Rockwell with your family.

Have your family see the movie, *How To Eat Fried Worms*.

Have your family build a worm bin and recycle their leftovers.

Bibliography

Research Basis

Townsend, J., Bunton, K (2006). "Indicators for Inquiry". *Science and Children*, Volume 43 (Number 5), page 37.

A hands-on approach to the observation of simple objects and patterns facilitate children's ability to report their findings. When combined with inquiry it peaks children's natural curiosity and allows them a wide range of investigative and science-process skills. Teachers can enhance this learning with well-placed guiding questions.

Ketch, A. (2005). "Conversation: the Comprehension Connection". *The Reading Teacher*, Vol 59 (Number 1), Page 8.

Engaging students in classroom conversation is a catalyst to reflective thinking. As they seek to understand the world around them, conversations full of thought-provoking questions becomes the connection between their inquiries and their comprehension.

Authors

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