Living Coast Discovery Center
Field Trip Resource Packet

Arthropods All Around

In this packet you will find lessons and resources related to your Living Coast field trip. The first two activities are intended to bookend your trip, followed by additional resources.

Career Focus: Entomologist

I study insects (such as ants, bees, beetles, etc.), their relationships with other animals, their environments, and human beings. I study these through observational, experimental, chemical and genetic techniques.

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Arthropod Adaptations

Lesson Objectives:

- Students will be able to describe two ways that animals (butterflies and crabs) can find food and shelter from their habitat
- Students will be able to define adaptations and name two examples

Standards:

- LS1.A. All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.
- SL.1.1.Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups
- SL1.4. Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly
- L.1.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking
- L.1.6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships
- W.1.8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

Materials:

- Whiteboard or Chart paper

Outline:

Begin the lesson by drawing a three-column chart on the board; each vertical column will represent an animal, and each row will contain a question (listed below). Start by announcing the discovery of a fascinating new animal—then choose a student (who should remain silent during the following class discussion) to represent this new animal. Ask the class to help you learn more about the new animal by answering a few basic questions about its habitat.

Questions:

- What shall we name this new animal? (You can just use the student's name, or have the class come up with a silly "scientific name" for them)
- What is the weather like in this animal's habitat?
- How does this animal find shelter?

- How does this animal find food?
- Does this animal have any predators?
- What behaviors show this animal has "adapted" to its environment? (“Adapted” means something an animal has on its body or that it does to help it find what it needs in its habitat)

In the other two columns, repeat the above process with two different arthropods – a crab and a butterfly. It is not essential that the ideas on the chart are accurate, as long as the answers are tied to the animal’s habitat. For example, if the students suggest a crab lives on the beach, it could find shelter under the sand or a rock but not in a tree or in a building.

After the lesson or as homework, students write about one of the two arthropods on the chart and how that animal is adapted for its habitat. They can use the sentence frame “A _____ lives in a _____ habitat. A _____ is adapted to its habitat. Adapted means _____. _____ is adapted to its habitat because _____.

Invent an Arthropod

Lesson Objectives:

- Students will be able to describe how various body parts (antennae, eyes, legs, mouth, and wings) help an arthropod survive
- Within a category of body parts (ex. Eyes), students will be able to describe the differences between variations of that body part and the abilities of each.

Standards:

- **LS1.A.** All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts that help them survive and grow.
- **LS1.D.** Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs.
- **LS3.B.** Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.
- **ETS1.2.** Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- **W.1.2.** Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure. OR **W.1.3.** Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure. (depending on writing task chosen)
- **W.1.8.** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- **SL.1.1.** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups
- **SL.1.2.** Ask and answer questions about key details in a text read aloud or information presented orally or through other media
- **L.1.6.** Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships

Materials:

- Coloring materials
- construction paper
- glue
- scissors
- printouts of "Invent an Arthropod" worksheet

Outline:

Discuss with the whole class what they remember about their field trip. Ask them about the different insect parts that they learned about during their virtual trip. (They talked about how wings, legs, eyes, antennae, and exoskeletons help an insect survive.) Record their ideas on the board or chart paper and leave it up as a reference for the rest of the lesson. You could record their remembering as a list or as a labeled drawing of an insect.

Let the class know that they will get to build their own arthropod today! Share the body part options with the class, and have them think about what they want their arthropod to be able to do – see with compound eyes? Jump? Fly? Suck nectar? What body parts will let them do those things? Have them discuss with a partner what they'd like their bug to be able to do.

Students can then choose their insect body and body parts and color them in. They can choose how to assemble their insect and glue all the pieces onto construction paper. If students are not able to print the worksheet, have them choose body parts from those pictured and draw their insect.

Extension: Depending on what writing standards your class is addressing, students can complete a short writing piece about their arthropod.

Narrative:

Students write about a "Day in the Life" of their bug. Stories could be written as is, or turned into a short book to keep in the class library.

Sentence Frames/Sample story:

[Bug's Name] woke up in the morning and looked around with his/her _____ eyes. He/she was hungry so he/she went looking for some _____ to eat. [Bug's name] ate their _____ food with their _____ mouth. Then, [Bug's name] got chased by a [predator]! [He/she] had to use his/her _____ legs to _____ away. Finally, [Name] was tired so they curled up their _____ body and went to sleep. Wow, _____!

Informational Text:

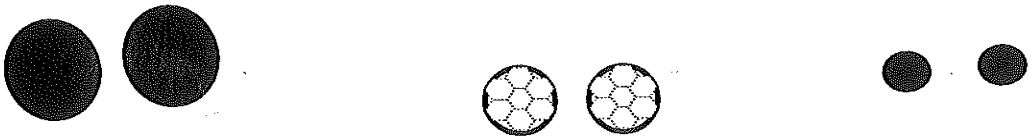
Students write and illustrate a newspaper article describing a new kind of arthropod. Compile all the students' articles into a copy of "All About Arthropods" magazine.

Sentence Frames/Sample story:

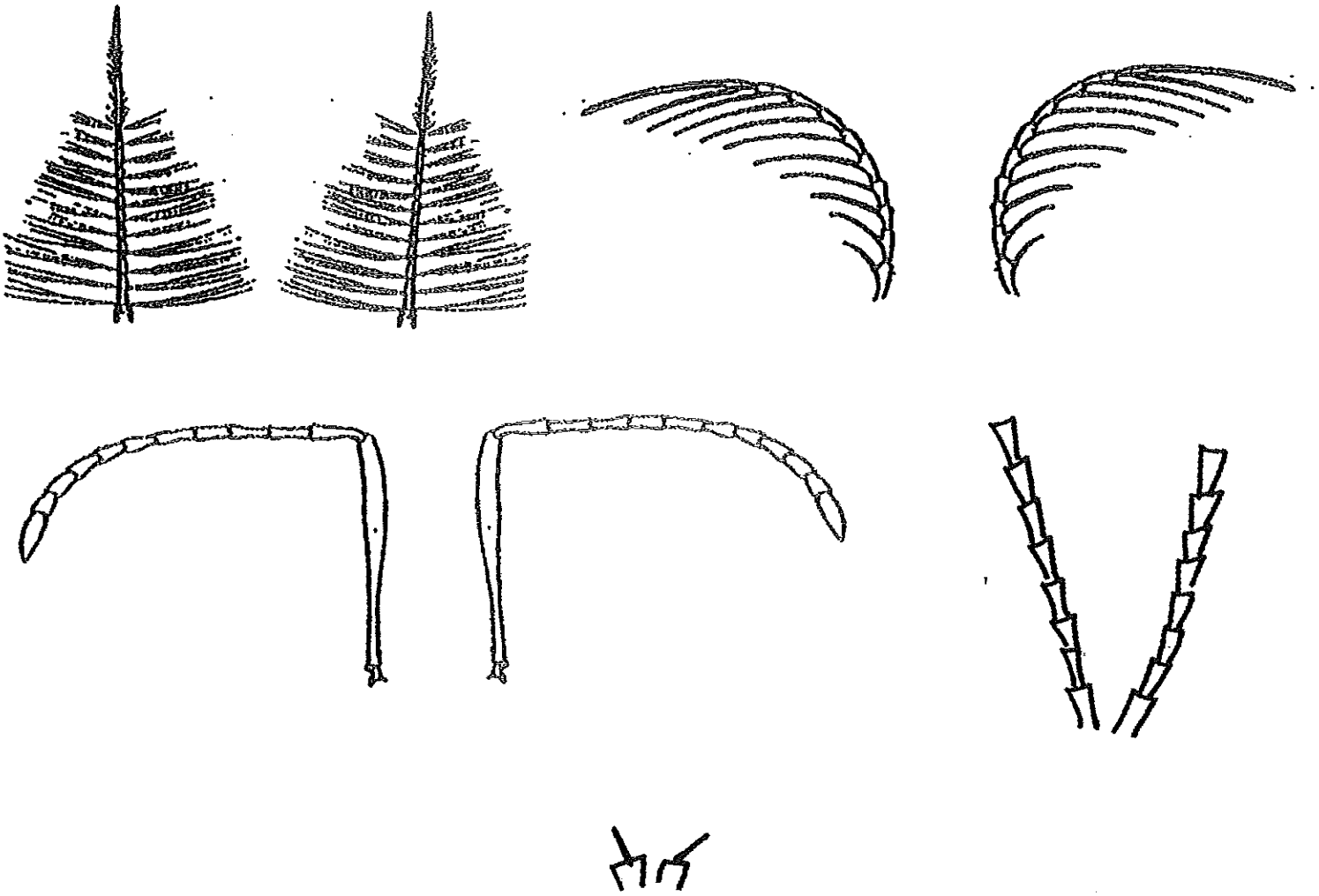
A new kind of arthropod has been discovered by [student]! It is called _____. It is [size] and [colors]. It's _____ eyes help it _____. The _____ has a special _____ mouth that helps it eat _____. If you get too close to the _____, it will get scared and _____ away with its _____ legs. You can recognize _____ by its _____ body shape. If you go to _____, you may be lucky enough to see a _____ there!

Worksheets:

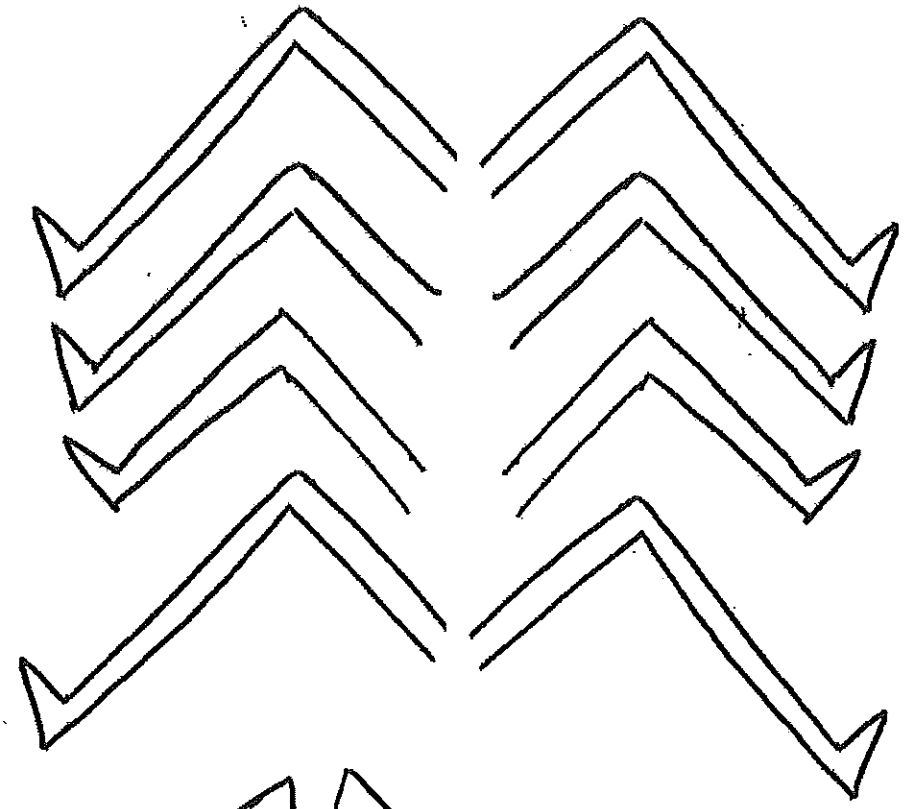
Arthropod Eyes

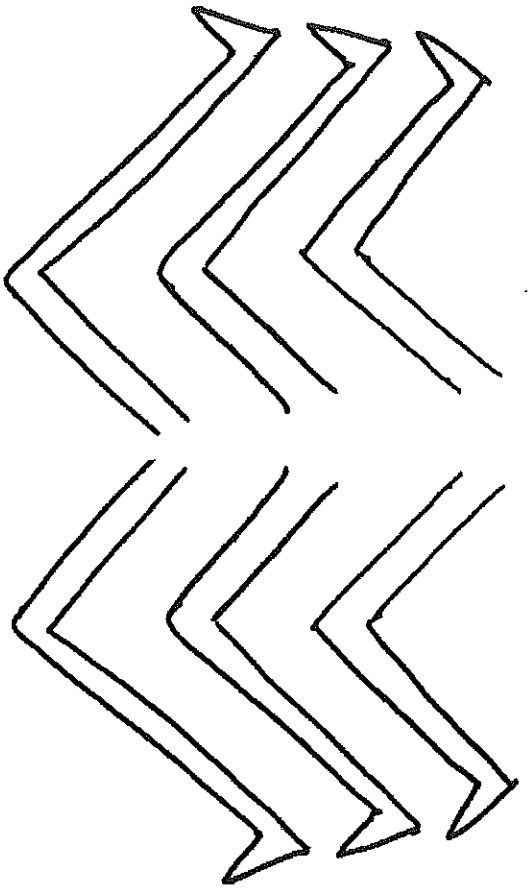


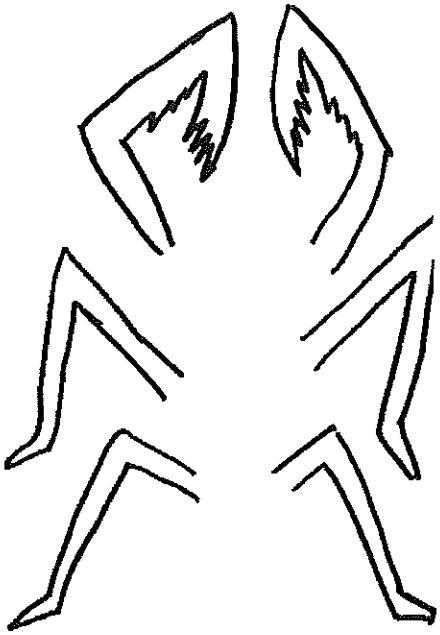
Arthropod Antennae

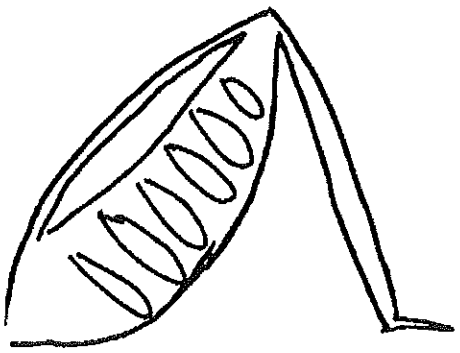


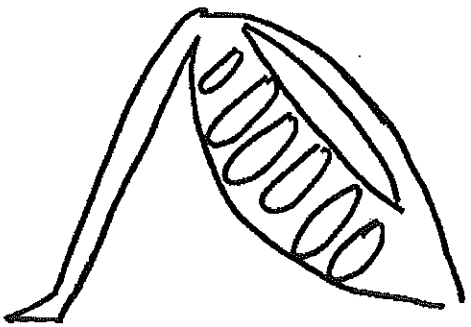
Arthropod Legs
(Remember: Insects have 6 legs and arachnids have 8)



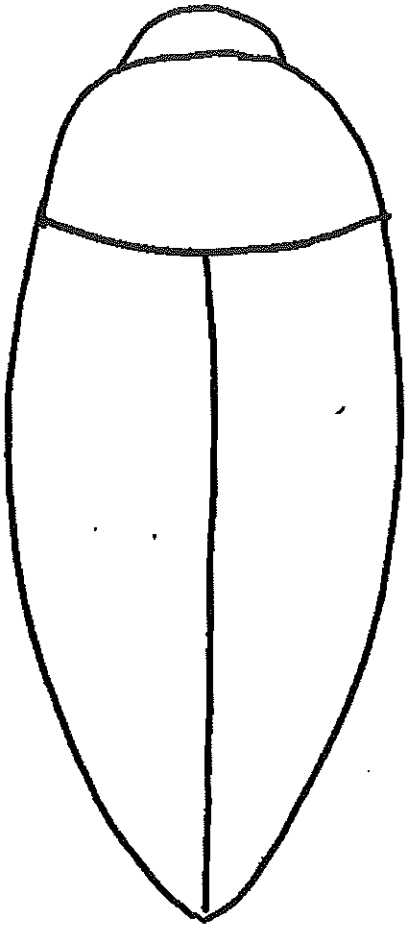


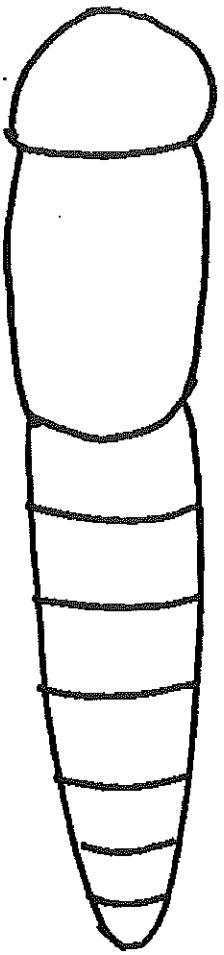


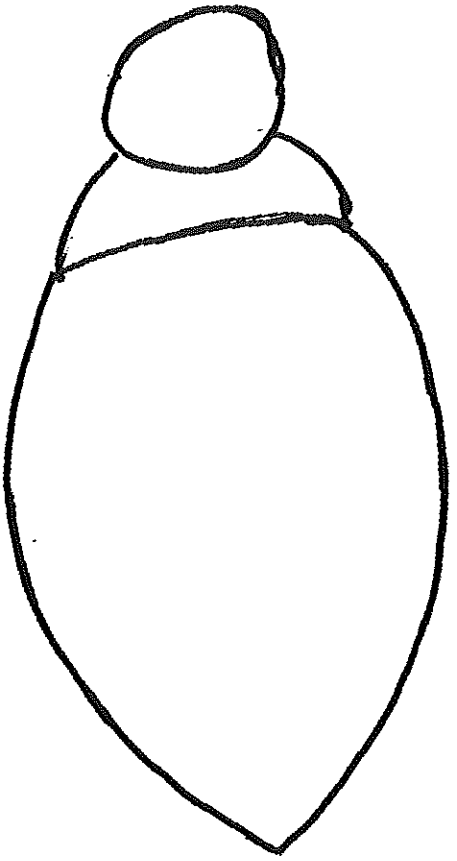


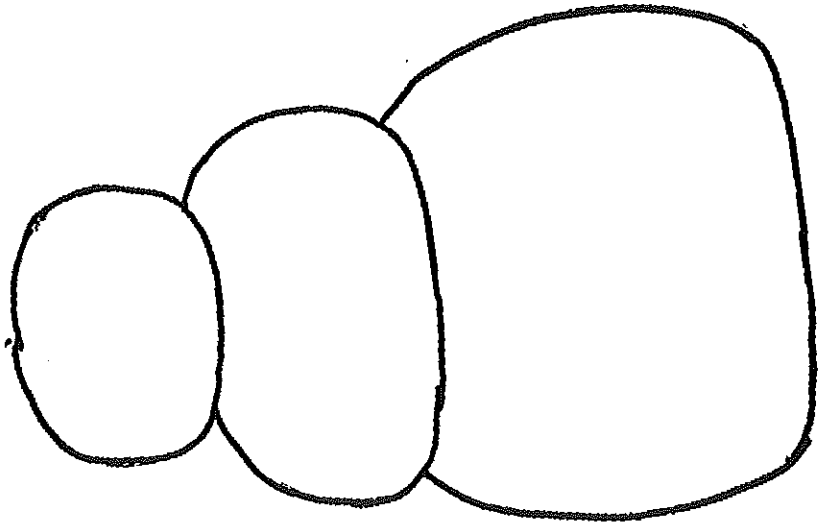


Arthropod Bodies









Ant Observations

Lesson Objectives:

- Students will use descriptive language to describe an ant's behavior
- Students will provide a cause-effect explanation to an ant's response to a stimulus

Standards:

- **LS1.D.** Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs.
- **W.1.8.** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

Materials:

- Ant Observation Sheets
- Access to outside space

Outline:

This activity can be provided to students as a homework activity after their LCDC Virtual Field Trip. You can prep students for the activity by asking them where they might find ants in their neighborhood. What are their habitats? As arthropod scientists, they need to make good observations about their ants. Talk about what makes a good observation. Remind students to be respectful and not hurt any of the arthropods they find.

You can ask parents to print the attached worksheet or have the students answer the questions on a separate piece of paper.

Worksheets:

Go for a walk around your neighborhood and try to find some ants! Make observations about the ants.

What the ant looked like:

_____

_____

_____

_____

What I saw the ant doing

_____

_____

_____

_____

Challenge: Put an obstacle in front of the ant's path. An obstacle can be a small rock, stick or leaf. Be careful not to hurt the ant! Make some observations before and after the obstacle.

My obstacle is a _____.

What I think the ant will do with the obstacle

_____

_____

_____

What I saw the ant doing before the obstacle

_____

_____

_____

What I saw the ant doing after the obstacle

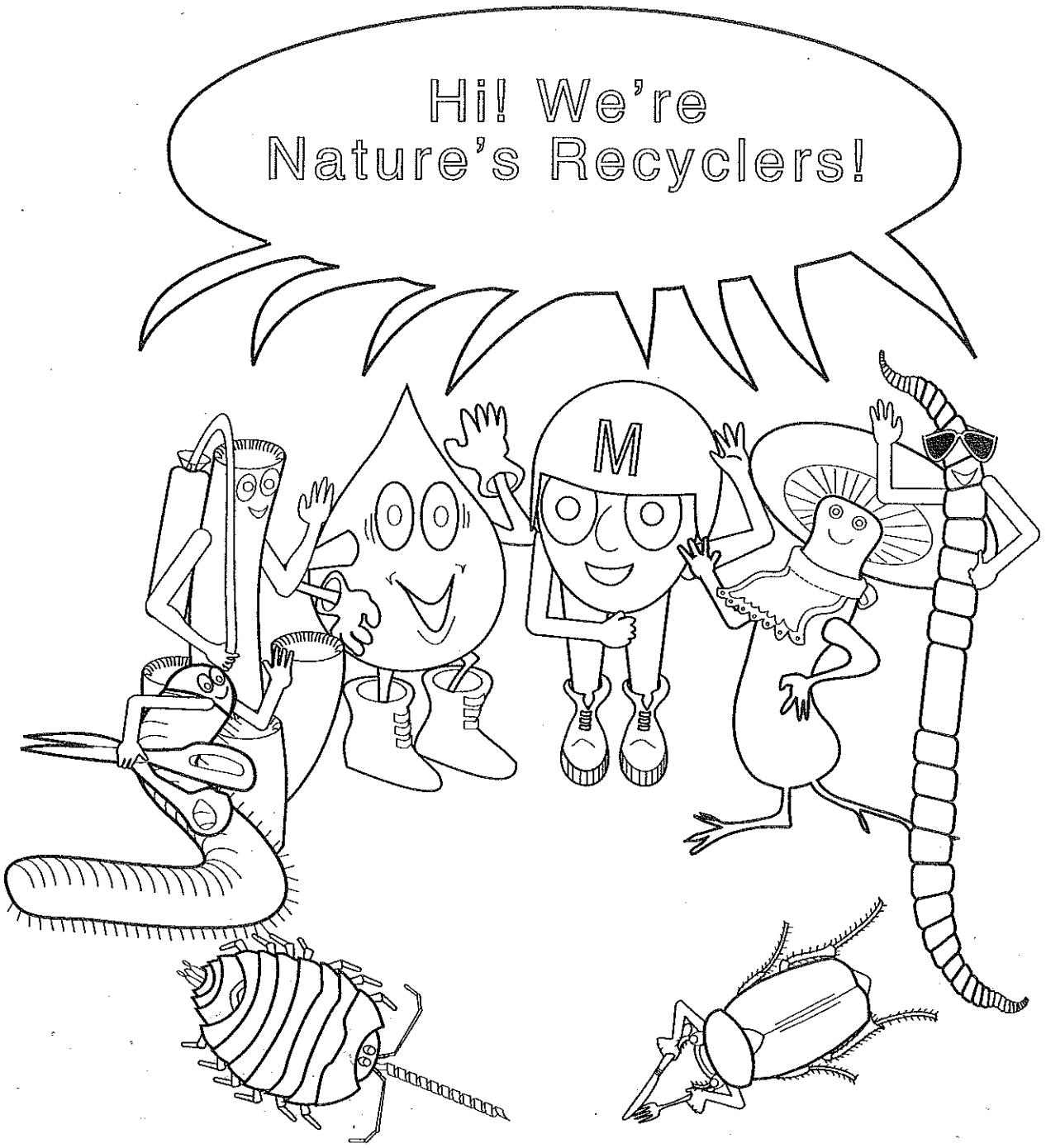
_____

_____

_____

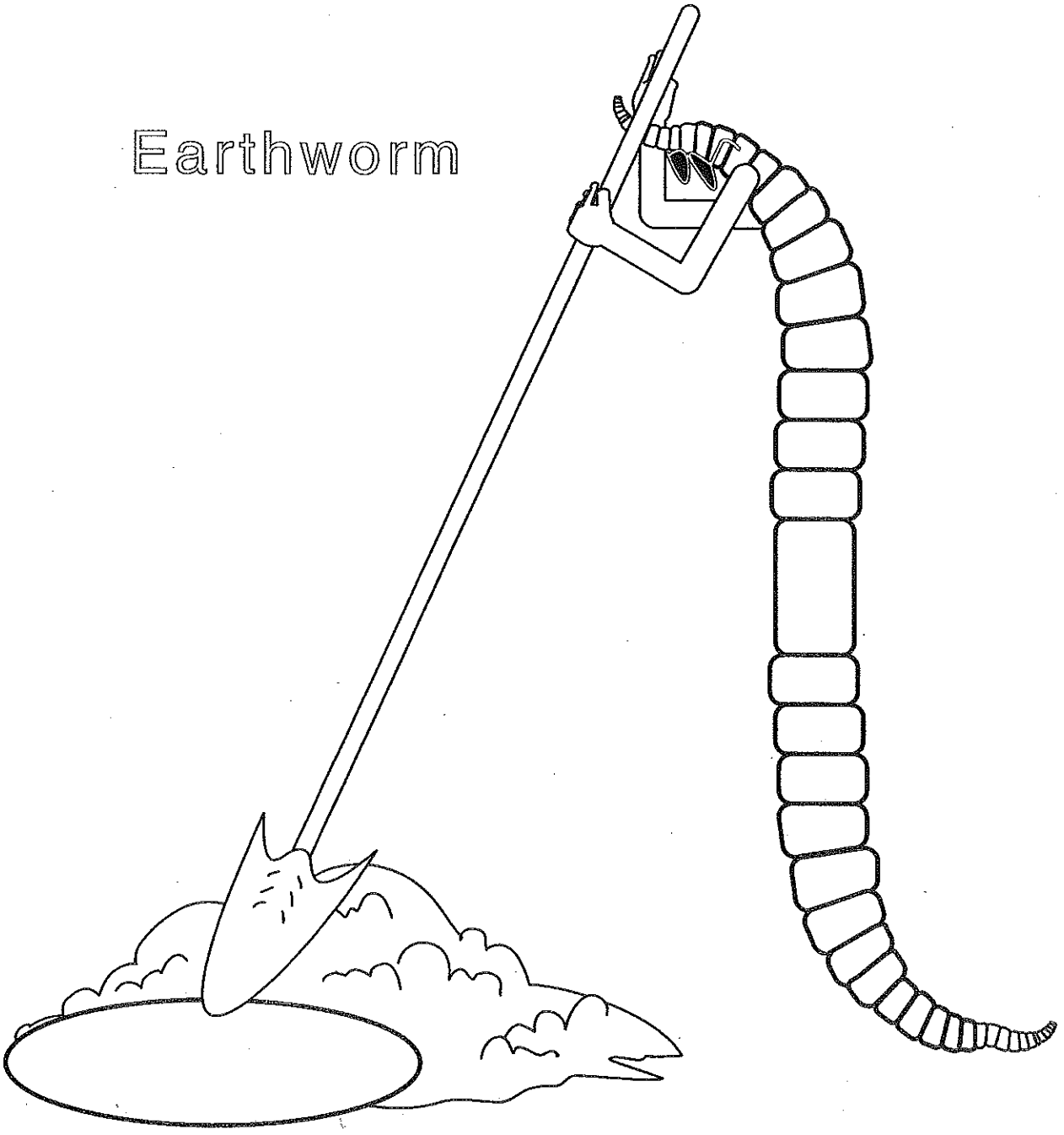
Nature’s Recyclers Coloring Sheets

Coloring sheets with information about arthropods and other animals that recycle natural materials.

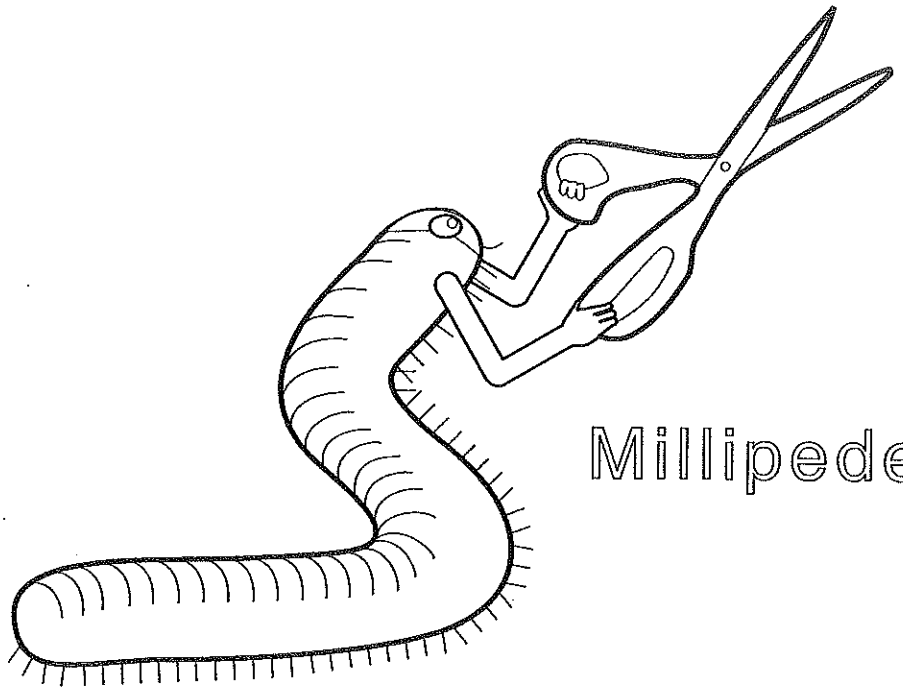


Become a recycler too.

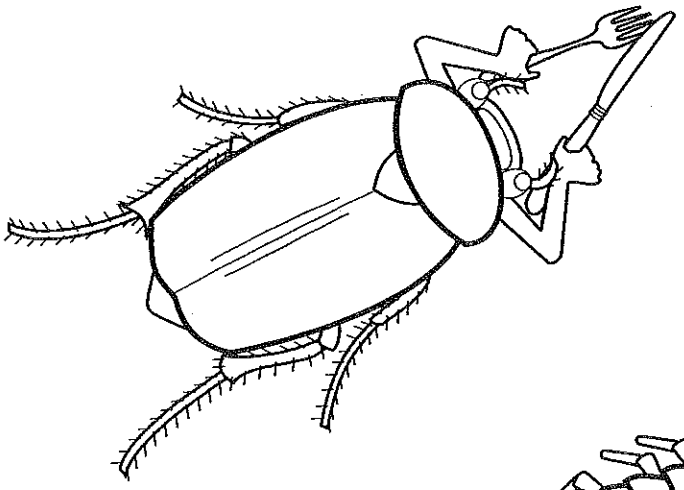
Earthworm



I dig tunnels that let air and water into the ground.

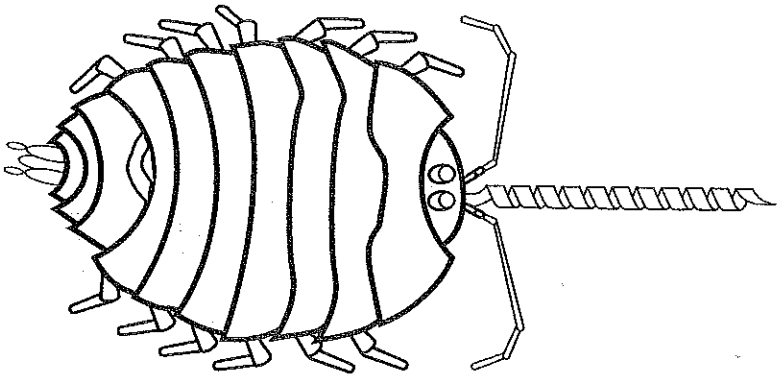


Millipede



Beetle

Sowbug



We break decaying matter into small pieces.

Resources

Learn about some arthropods and other animals that are “Cool, not Creepy” from the San Diego Zoo
https://kids.sandiegozoo.org/stories/cool-not-creepy

Visit the Safari Park’s Butterfly house through their live butterfly cam:
https://www.sdzsafaripark.org/butterfly-cam

Lessons and resources for teaching about tidepool invertebrates from the Monterey Bay Aquarium
https://montereybayaquarium.thinkific.com/courses/tidepool-scientist

App from PBS Kids providing families with challenges to complete outside by exploring nature in their yard or neighborhood.
https://pbskids.org/apps/outdoor-family-fun-with-plum.html