



MINIBEAST PREVISIT MATERIAL

The Minibeasts program is designed to introduce the students to the world of insects, spiders, centipedes, and other small and often misunderstood creatures. Students will learn what characteristics these animals have in common and what sets them apart. Please use the following material to help prepare your class for their visit.

VOCABULARY:

Amphibian – a cold-blooded vertebrate that usually lacks scaly skin, lays jelly-coated eggs in water and produces mucus and /or toxins from special glands in its skin. Most amphibians go through metamorphosis. Examples are frogs & salamanders.

Arthropods – a group of animals that have exoskeletons, jointed legs, and segmented bodies (phylum: Arthropoda). Arthropods include such animals as insects, ticks, spiders, centipede, millipedes, crayfish, lobsters, mites, and scorpions.

Classify – To arrange or put in a class or classes on the basis of resemblances or differences.

Exoskeleton – a hard, protective covering found on insects, spiders, and other arthropods. The outer “skeleton”.

Invertebrate – not vertebrate; lacking a backbone or spinal column (i.e. insects, spiders, and centipedes).

Metamorphosis – the change of an insect (or other animal) from one form to another as it develops into an adult.

Reptile – a cold-blooded, dry skinned vertebrate that usually has scaly skin and typically lays shelled eggs on land. Reptiles do not go through metamorphosis. Lizards, snakes, and turtles are examples of reptiles.

Vertebrate – having a backbone or spinal column (i.e. fishes, birds, reptiles, and mammals).

ACTIVITIES

Classifying

Materials: two glass bottles and two glass jars of different sizes and shapes (one jar containing rice, one jar containing salt or sugar, one bottle containing fruit juice and one bottle containing water)

Show the students the four bottles and jars and ask: How are these objects alike? Ask: How are these objects different from each other? Show the students the two bottles. Ask them to compare these objects and say how they are alike and how they are different from each other. If not already stated by the students, point out that the bottles are alike in that they are both bottles and they both contain liquids. They are different in that they contain liquids of different colors and are different sizes and shapes. Ask a student to come up and smell the contents of each bottle and report whether they are different or the same in smell. Show the students the two jars. Ask: How are these like each other and how are they different? Point out, if not already stated, that they are alike in that they are both jars and both contain something white. They are different in that they are different sizes and shapes and the white substances inside are different. Tell the students that they have been comparing things and putting them in groups according to likeness in size, shape, color and smell. Comparing and organizing things in groups is called classifying and is something scientists do when they look at plants and animals.

Have all the students stand up. Have two students come to the front, and assign them to classify the students in the class – organize them by likenesses- according to shoe color. Help the class to cooperate with the classifiers. When the students have assembled in groups of brown shoes, black shoes, white shoes, etc., point out that the classifiers have grouped them according to the color of their shoes. Ask the students to look around at the other students in their group. Are some of them taller or shorter than others in the group? Are some of them boys and some girls? Do some of them like peanut butter and others do not? Have the children try to classify the group by other characteristics. Adapted from STARS Elementary Science Curriculum

Vertebrate vs. Invertebrate

Materials: string of large wooden beads as a model of vertebrae; turkey or chicken neck bones; picture of human skeleton; sets of cards with pictures* of vertebrates and invertebrates (label picture with name of animal) *Pictures can be clipped from magazines or printed from internet. One good site is www.kidport.com Explain that one way to classify an animal is to look at its bones, its skeleton. The most important part of the skeleton to look at is the backbone. Ask: Do people have backbones? Have the students put their fingers on the backs of their necks. Ask: What do you feel? Do the bumps go down your back? Show the students a picture of the human skeleton and ask one student to come up and point out the backbone.

Ask one of the students to touch his or hers knees and then stand upright. Ask: Do our backbones bend? Demonstrate by twisting left and right at the waist. Ask: If bone is hard, how do you think the backbone bends? Display the string of large wooden beads. Explain that the backbone is made up of many bones called vertebrae lined up and connected like beads on a string. Demonstrate the flexibility of the string. Write *vertebrae* on the board and have the students repeat it. If you have them, show the students vertebrae of a chicken or turkey. Point out the hole in the center through which a string of nerves called the spinal cord passes on its way to the animal's brain.

Tell the students that animals with backbones are called *vertebrates*. Write this word on the board. Point out that the name comes from the name of small bones in backbones. Vertebrates are one group of animals in the animal kingdom. Ask: Are humans vertebrates? Why? Point out that all of the animals with backbones have skeletons on the insides of their bodies. (Insects, crabs, lobsters, spiders, etc.) Explain that these are animals with exoskeletons. Ask: Do you think there are animals with no hard skeletons at all? (Slugs, snails, and worms) Show the students some pictures of invertebrates. Ask: Do you think any of these animals have backbones? Tell the students that this other group of animals in the animal kingdom is called invertebrates because these animals have no backbones. Write *invertebrate* on the board. Ask: Do you think most of the animals in the world are vertebrates or invertebrates? Tell the students that most of the animals on Earth are invertebrates. Vertebrates like us make up only 1/20th of the animal life on Earth.

Divide children into groups and hand out the vertebrate/invertebrate picture cards. Have children work together to determine if animals are vertebrates or invertebrates. Review their answers and discuss. Adapted from STARS Elementary Science Curriculum

Meet a Minibeast

Make a copy of this handout sheet for each student. Discuss ways in which the various small animals are similar. How are they different? Answers to questions: 1.earthworm, 2. Spider, 3. Tick, 4. Snail, 5.millipede, 6. Slug, 7. Sow bug, 8. Centipede

MEET A MINIBEAST

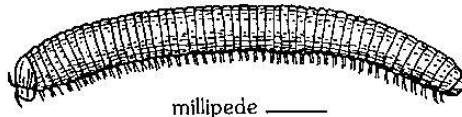
Match each description with the correct picture of the minibeast that it describes. Write the number by the name.

1. I am a legless creature found under the soil and around rotting logs. I help to loosen and aerate the soil, and I eat decaying matter.



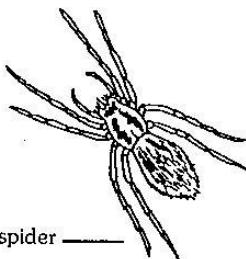
slug —

2. With eight legs and two body parts, the insect family will not accept me! I catch my prey in special webs that I build myself.



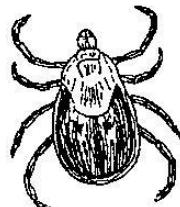
millipede —

3. I am a tiny arachnid that can get attached to dogs. Some in my family cause Lyme disease.



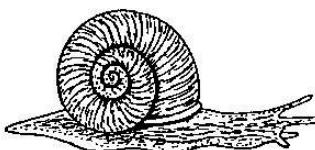
sow bug —

4. I have no backbone, but have a hard shell to protect my soft, moist body.



tick —

5. You can find me in dark, damp places. I often curl up when frightened, eat only decaying plants, and have many legs.

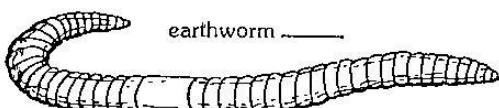


snail —

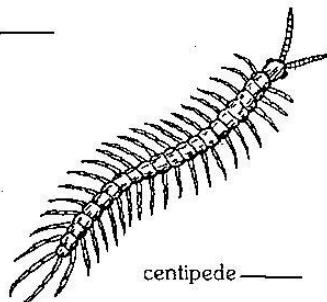
6. I'm often found in gardens. I resemble a snail without its shell and I'm very slimy.

7. I am not really a bug at all, but some people call me that. I am a crustacean, just like a crayfish, and live under rocks and logs. I have 14 legs.

8. I am a very quick predator and have a poisonous sting. My body has many segments, with one pair of legs per segment.



earthworm —



centipede —

Adapted from *Wisconsin Junior Ranger*, Wisconsin Dept. of Natural Resources