



Arthropods

Objectives and State Standards:

- ① Students will describe the differences between the five main groups of arthropods. (Science Standard 3.1)
- ① Students will name three arthropod adaptations and describe how they help the animal survive. (Science Standard 3.1)
- ① Students will illustrate an appropriate arthropod food chain for a given habitat. (Science Standard 3.2)

Activities for before your visit:

- ① **Arthropod Characteristics:** Show students a picture or model of an insect, spider, crustacean, millipede, and centipede. Have students brainstorm the characteristics that make each animal unique. List their observations on the board. Explain that these animals are representatives of the five main classes of arthropods: the insects, arachnids, crustaceans, millipedes, and centipedes. Have students name some other insects, arachnids, and crustaceans. Have students draw a picture of one arthropod with the correct body plan and number of legs. As a follow-up, have the CU Bug Mobile come in and present their arthropod program with live arthropods. Call (303) 492-8640 for more information.
- ① **Food Chains:** Read “Crickwing” by Janell Cannon. This book is all about who eats what and how to keep from being eaten. Discuss the different predators and prey in the book. Note that arthropods can be both predators and prey. The group arthropods, with over 900,000 members, is so huge that it would be impossible to create a food web without them as part of it. Pick a habitat such as the rain forest or the plains of Colorado. Have each student draw a food chain on a strip of paper. The food chains should include a plant (producer), a primary consumer, a secondary consumer, and a tertiary consumer. Have the students randomly tape the food chains up on the board. Now have students take turns connecting different parts of different food chains together with pieces of string. Remind students that organisms connect to things that they eat or things that eat them. Give each student a couple of chances to make connections. Now that the organisms are connected to each other, put some stresses on the habitat such as fire, deforestation, etc. Discuss how stresses on part of the web can affect the whole web.
- ① **Arthropod Observation:** Have students each pick a spot on the school grounds that is about a 4-foot square. Tell students this will be their arthropod observation plot. Give them each a nature journal. (See Nature Journal download.) As a class, go out once a week and give the students about 15 minutes to observe their plots. Students can draw pictures of what they see to later identify it. They can count what they see and make graphs. They can record the weather conditions and record how the weather affects their observations, etc. They can add a board (shelter) or water to their plot and record what effect the addition had on the plot. After a month or two have them share their journals with each other. Why did some study areas have more arthropods than others? Why did some study areas have a greater variety of arthropods than others? What made some days better to observe than others?

Activities for after your visit:

- ① **Adaptations:** Have students brainstorm some animal adaptations they saw during their visit to the Butterfly Pavilion. Then have them choose adaptations from three Butterfly Pavilion animals and create a brand new animal. Have them use craft supplies to create their animal. Now given the animal’s adaptations, have them make a diorama with all the elements their animal would need for its habitat (food, water, shelter, and space). Have them write a paragraph telling about their animal. Have them make sure to give their new animal a name based on its characteristics.
- ① **Rain Forest Newspaper:** Create a class newspaper about life in the rain forest. Each student should write from the perspective of a different arthropod. Students can write editorials, features, sports articles, birth announcements, etc. The students will need to become familiar with the sections of newspapers and do some research so their stories can have some facts. An example of a story could be Harry Hermit Crab’s feature on Barry the bombardier beetle saving the life of Sally cockroach with a 212-degree puff of irritating gas.
- ① **Butterfly Farming:** On a map, put a sticker or pin on all the places where the Butterfly Pavilion could get butterflies or moths. (See Butterfly Farming download.) By supporting farmers that raise butterflies, the Butterfly Pavilion preserves the rain forest. By visiting the Butterfly Pavilion, you also support the rain forest. Write a letter to the Butterfly Pavilion telling us other ways you will help preserve the rain forest.

Resources:

- Meet the Arthropods* by Ellen Doris
- Crickwing* by Janell Cannon
- <http://www.butterflyfarm.co.cr/ed/>
- <http://centralamerica.com/cr/butterfly/bflyart4.htm>
- <http://www.woodlands-junior.kent.sch.uk/homework/habitats.html>