

# PRE-SITE ACTIVITY: THEM VERSUS US



**Grade Level:** First

**Subject Area:** Science

**Activity time:** 30 minutes

**Setting:** Indoors

**Skills:** Inferring, communicating, comparing, classifying, organizing, presenting

## **Vocabulary:**

- **Arthropod:** An invertebrate animal having an exoskeleton, a segmented body, and jointed appendages. Arthropods include the insects, arachnids, crustaceans, and others. They have over a million described species, making up more than 80% of all described living animal species.

- **Invertebrate:** An organism without a backbone.

- **Taxonomy:** The science of classification. All life forms can be classified into Kingdom, Phylum, Class, Order, Family, Genus, Species.

## **Objective:**

As an introduction to the on-site activities, the following information will assist students in distinguishing invertebrates from one another.

## **Materials:**

- Chart paper

## **Background:**

Close to one million invertebrate species have been named and described worldwide. Invertebrates are animals without backbones. A scientist attempting to identify invertebrates would try to classify (sort) an animal based on its characteristics. The broadest classification of any living creature is to determine what Kingdom it falls into. All animals are grouped in the Kingdom Animalia. Even humans belong to this Kingdom. However, insects and spiders are very different from humans. On an elementary level, humans are different from spiders and insects in their size, number of legs, and skeletal make up. Scientifically, a taxonomist would identify characteristics of any species with classification taxonomy. For example, the second character description is to determine to what phylum a species belongs. Animals having a segmented body, paired limbs, a hard outer skin (known as an exoskeleton) with flexible legs and bilateral symmetry (meaning each side of the body is a mirror image of the other) belong to the phylum Arthropoda. This would include spiders and insects, as well as a variety of other invertebrates. Eighty percent of all invertebrates belong to this phylum.

From the Phylum description we can begin to describe orders of animals based on other visible characteristics that students will be searching for on the field trip. The first challenge is for students to understand how insects are different from spiders. The next step is to compare the human body to insects and spiders.

## **Set Up:**

Because they are very closely related, insects and spiders are sometimes confused upon identification. However, an observer can tell them apart by observing several different physical and behavioral characteristics. Ask the students to observe how a creature looks and behaves to determine if it is an insect, a spider, or another member of the phylum arthropoda. Examples of arthropods for this activity can be gathered from numerous internet sites, picture books, or even by collecting specimens from the school yard to be passed around the class in securely closed containers.

As a group, discuss the differences between insects and spiders. Make a list on the board or on a flip chart of all the correct answers. Be sure to encourage answers about behavior and habitat as well as physical characteristics. Then add a third column to the list called “Me”. Ask the students to compare insects and spiders characteristics to those of themselves. See the following page for an example chart.

## **Resources**

National Wildlife Federation.  
“Incredible Insects.” Ranger Rick’s Naturescope (1998)



# PRE-SITE ACTIVITY: THEM VERSUS US (CONTINUED)



| Insects  | Spiders   | Me                                 |
|--|---|------------------------------------|
| 6 legs   | 8 legs  | 2 legs                             |
| 3 main body parts (head, thorax, and abdomen)        | 2 main body parts (cephalothorax and abdomen)   | 2 main body parts?                 |
| live in water and on land                            | usually live on land                            | live on land                       |
| have 2 antennae                                      | have no antennae                                | have no antennae                   |
| eat plants and animals                               | usually eat other animals                       | eat plants and animals             |
| most don't make webs                                 | most make webs or use silk in different ways    | don't make webs but do make houses |
| usually have 2 compound eyes and several simple eyes | usually have 8 simple eyes and no compound eyes | have simple eyes                   |
| usually have two pairs of wings                      | no wings  | no wings                           |
| can bite or sting                                    | can bite; all have poison to catch prey         | can bite & hit; cannot sting       |
| exoskeleton  | exoskeleton                                     | have skeleton on the inside        |

