



## **Insects vs. Spiders: Legs and Body Parts**

Ages 4-10

### Materials

Cardboard cutouts of body parts

Plastic “bugs” (in this document, we’ll refer to insects, spiders, and all little critters related to them as bugs for the sake of simplicity)

### Theme

Insects and spiders are grouped in different classes because they have different characteristics.

### **Introduction**

We often think of bugs as anything creepy-crawly, but there are actually different groups of these small animals. Scientists group animals together by particular features that are alike or different.

### **Body**

Divide children into small groups of no more than 4-5. Give each group a pile of plastic bugs—each pile should contain insects, spiders, and maybe a centipede or scorpion, or a caterpillar.

Have each group divide their “bugs” any way they want. Let them make the decisions as to how to do it.

After a few minutes, ask each group how they divided their bugs and let them share it with the other groups. *Some kids will divide their bugs by color or by size. That’s okay—the idea is that they’re noticing the differences.*

After everyone has explained how they divided their bugs, share that scientists classify all living things. Most kids will know about classes of animals like mammals, reptiles, and amphibians, These are all part of the animal kingdom (as opposed to the plant kingdom), and from there it breaks down into vertebrates and invertebrates. There are probably several different ways that scientists could have divided these piles of bugs, but one of the main things they look at are how many legs and body parts each bug has.

Show the cardboard cutout of an insect first. Ask the students how many body parts they see. Everything that is classified as an insect has three body parts. Review the names of these: head, thorax, and abdomen. Count the legs—each insect has six legs. Sometimes they might have appendages attached near their face, but these are not legs. Where are the legs attached? Note that they are attached to the thorax.

Now show the spider cutout. Count the body parts. Spiders have two body parts—the cephalothorax and the abdomen. How many legs? Spiders have eight legs. Note that all legs are attached to the cephalothorax (*often when children draw spiders they put the legs on the abdomen*).

Have each small group look at their piles again, and redivide them. Are there bugs that don’t seem to fit? Spend a few minutes talking about these:

- Centipedes and millipedes—they have way more legs! Centipedes and millipedes are actually in two separate classes. Centipedes have two legs per body segment (one on each side) and millipedes have four legs per body segment (two on each side).
- Daddy long-legs and scorpions are not spiders, but they are also arachnids (in the same class as spiders). Others that are in this overall group are mites and ticks.
- Pillbugs (or roly pollies) are in the same class with lobsters, crabs, and shrimp.
- Caterpillars have lots of legs, but classifications are decided by the adult phase. What does a caterpillar become? Butterflies are insects, so caterpillars are just an earlier stage of an insect.

### Interesting Facts

- Scientists have identified close to one million species of insects in the world. They estimate there are probably several million more that haven't been identified yet. This compares to about five to six thousand species of mammals—a mere drop in the bucket compared to insect species.
- Spiders number more than 40,000 species in the world.

### **Conclusion**

Not all bugs are alike! Look closely when you see little critters in the grass and see if you can put them in the correct class where they belong.

Follow-up activities:

Use **bug boxes** to look for live insects, spiders, and other creepy crawlies. Remind children that these are living things. We are much bigger than them. Think about being a bug inside a jar and how scary that must be. Handle what they find gently and return them carefully to their homes.

**Build a Bug**—use the build-a-bug box to create insects and spiders with Styrofoam balls, toothpicks, and pipe cleaners.

--Deborah Price, *Education Liaison*, March 2015