



WILD Kids



Arthropod Collecting

One of the best ways to study arthropods is to look at them up close. This way you can see all parts of an arthropod, including multiple eyes and fascinating mouth parts. So how do you go about making a very simple arthropod collection?

First of all you need the right equipment - a collecting jar and net (for many arthropods you do not even need a net, your hands will do just fine). If you decide to use a net, it should be light weight, strong, and have an open mesh so that it can swish through the air easily and insects can be seen through it. You can either purchase a net or make one yourself. If you make one, you will need a broom handle (or similar handle), wire for the rim and netting (see page 2 for directions).

Your collecting jar can be used for viewing arthropods alive or you can make it into a preserving jar. To make an arthropod collection, you will need a preserve a few arthropods. The good type of jar to use is one with a wide opening (mayonnaise jars are great) and tight fitting lid. If you are using a glass jar, reinforce the glass by taping the outside completely, including the bottom (clear strapping tape is good here because it allows you to see the arthropod). This is a good precaution in case you should accidentally drop the jar.

Ethyl acetate is the best killing agent to use. It is safe and readily available (nail polish remover is mostly ethyl acetate). It is the fumes from the ethyl acetate that kills the arthropods, so something absorbent must be put into the collecting jar. You can use cotton balls, a piece of cloth or plaster of paris. Pour a mixture of plaster of paris and water into the bottom of the jar to a depth of about 2 centimeters. Let it set and dry thoroughly before using. When you are ready to use the jar, add a few drops of ethyl acetate to the absorbing material and tightly close the lid. Do not add too much ethyl acetate because wet arthropods do not make good study specimens. Add more ethyl acetate every few days as it is needed. **CAUTION:** *Make absolute*

certain that the specimen is completely dead before removing it from the collecting jar.

Never leave your collecting jar open for longer than it takes to add an arthropod - too much fumes will escape and will no longer be efficient in killing the arthropod. Also it is best to remove the specimens from the jar within a few hours after death. In this manner your specimens will still be soft enough for you to pin them.

The main pin through the body of the arthropod should be done with a special insect pin (long and very thin), but if it is not available a long straight pin will do. After you have placed a pin through the central part of the body, pin your specimen on a piece of cork, balsa wood, styrofoam or other soft material. You can then carefully “pose” the specimen. Uncurl the antenna, legs, claws and/or wings and straighten out the body. Let the specimen dry thoroughly for a few days. You are now ready to take a very close look with a hand lens or dissecting microscope.

When you are out collecting arthropods, remember these few simple rules:

- ✓ If you turn over a rock or board looking for arthropods, put it back the same way you found it. The rock, dead branch, or board is shelter for many different kinds of wildlife. Put it back so they may continue to use it as shelter.
- ✓ Never turn over anything that you cannot put back. For instance, do not turn over a rock if it is going to fall down a steep slope unless you want to go and get it. Remember, that rock is shelter for many different kinds of wildlife. Even though you may not find anything under the rock, the inhabitant may be out hunting for food and will return later.
- ✓ Never overcollect. One or two of a species is good enough. It is a waste to collect everything

you find or see. Be selective in how many and what you collect.

- ✓ If you are going to keep the arthropod alive, make sure you know its requirements for food, water, shelter and space. It is not ethical to let an individual starve to death just because you do not know what to feed it. If you do not know, do not collect it alive.

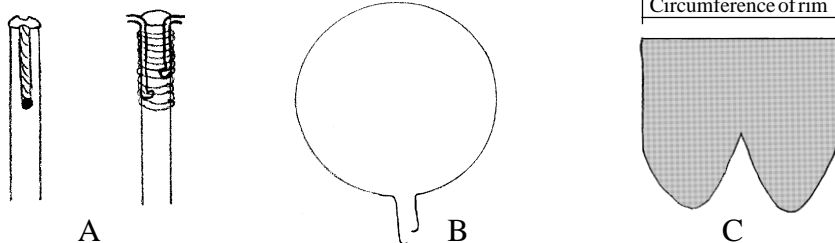
Following these few simple rules will make you a conscientious collector.

Activity I: Making A Collecting Net

Materials that you will need to make an arthropod collecting net are:


- broom handle or similar stick
- heavy gauge wire (#8 is good)
- finer wire or heavy cord for wrapping handle
- netting
- needle and thread
- crayons, markers or paint (optional)

1. Cut two grooves on opposite sides of the handle wide enough for the wire to fit in. Make one 7.5 centimeters long and the other 5 centimeters. (A)
2. Drill a hole at the bottom of each groove about half way through the handle. Make the hole just wide enough for the wire to fit snugly.
3. Bend the wire so that it looks like the picture. Insert the two ends into the holes in the handle and wrap with fine wire or cording. (B)
4. Cut the netting for the bag as shown in the picture. (This would be the time to decorate you bag if you like. Use crayons, markers or even paint.) Hand stitch the netting with heavy thread (button thread works great) into a bag. (C)
5. Place the netting on the outside of the wire rim and extend it above the rim about 2 centimeters. Fold over the netting, enclosing the wire. Hand stitch closed.




Activity II: Arthropod Collection


Below are the major characteristics of the 5 main groups of arthropods. Collect and preserve alive or dead **one** representative from each group. Your collection should have only five individuals.

 **Arachnids** (spiders, scorpions, mites, ticks, daddy long-legs)


- * 1 or 2 body regions
- * 4 pairs of walking legs
- * no antennae

 **Crustaceans** (crabs, lobsters, sowbugs, fairy shrimp, tadpole shrimp)


- * 2 body regions
- * 5 or more pairs of legs
- * 2 pairs of antennae

 **Millipedes**

- * 2 pairs of legs per segment
- * 1 pair of antennae

 **Centipedes**

- * 1 pair of legs per segment
- * 1 pair of antennae

 **Insects** (beetles, crickets, butterflies, ants, bees, etc.)

- * 3 body regions
- * 3 pairs of legs
- * 1 pair of antennae