

**Topics:** Arthropods,  
Observation,  
Classification

## Materials List

- ✓ Portion cup and lid, 2 oz size or equal
- ✓ Flex straws, 2
- ✓ Clear plastic wrap or bag
- ✓ Filter material (cheese cloth, gauze, nylon stocking, fine netting)
- ✓ Single hole punch or leather punch
- ✓ Scissors
- ✓ Tape, if needed
- ✓ Pencil, pen, or equal if needed
- ✓ Optional: magnifier
- ✓ Optional: bug-sized “practice object” (e.g., piece of straw or paper, grain of rice)

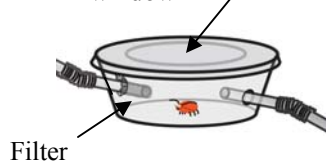
This activity can be used to teach:

- Observe Insects (CA Science Standards: Grade K, 2.a)
- Decomposers (CA Science Standards: Grade 4, 2.c)
- Classify insects (CA Science Standards: Grade 7, 3.d)

# Bug Pooter

A safe, humane way to collect and observe small creatures

Cutout with plastic wrap window



Create a pooter, or “bug vac” to gently collect and study small creepy crawlies.

## Assembly

1. Punch 2 holes in the portion cup on opposite sides, 1 cm ( $\frac{3}{8}$ ”) from the edge.
2. Insert the mouth end of a flex straw into a hole. If the straw does not make a tight fit into the hole, then wrap tape around the end of the straw and reinsert into the hole. If the hole is too small for the straw then carefully widen the hole with a pointed pencil, pen, or other suitably sized and tapered object.
3. Cover the mouth end of another flex straw with pieces of filter material (see materials list). Overlap several layers, if needed, to create a filter that will allow air to pass through but not the creatures to be studied. Widen the other hole, as needed (see step 2), and wedge the covered end of the straw into the hole.
4. Cut out the center of a portion cup lid such that a 1 cm ( $\frac{3}{8}$ ”) outer rim is left.
5. Stretch a 10 cm (4”) square of clear plastic wrap over the portion cup’s mouth, put on the cut lid rim from step 4, and snap the lid into place on the portion cup.
6. Pull on the plastic wrap or redo to make the surface more transparent, if needed.

## To Do and Notice

1. Locate a suitable specimen (or “practice object”) to collect and study.
2. Position the filter-less straw so the end is very near the selected specimen.
3. Breathe in suddenly through the open end of the **covered (filtered) straw**.
4. Repeat step 3, as needed, until specimen is transferred into pooter.
5. Observe the specimen through the pooter’s clear top. Use a magnifier if available. (Note: Use caution using a magnifier outdoors or in a strong light.)
6. When done observing, remove the lid of the portion cup and gently release the specimen into a suitable habitat.

## The Science Behind the Activity

The term “bugs” is commonly used to describe small arthropods (e.g., insects, spiders, sow bugs). Of the known animal species, more than 80% are arthropods! A pooter is a device used to collect small objects and creatures. Breathing in through the straw/filter creates a low pressure area in the portion cup and the other straw. Outside air, that is at a high pressure, moves toward the area of lower pressure, moving the selected specimen through the other straw and into the portion cup.

## Taking It Further

Place collected specimens in a terrarium for further study before releasing them.

**Web Resources** (Visit [www.raft.net/more](http://www.raft.net/more) for how-to videos and more ideas!)

- Arthropods – [www.ucmp.berkeley.edu/arthropoda/arthropoda.html](http://www.ucmp.berkeley.edu/arthropoda/arthropoda.html)
- Insects and more; pictures and descriptions – [www.insects.org](http://www.insects.org)
- Insect information and resources – [www.42explore.com/insects.htm](http://www.42explore.com/insects.htm)