

# Bug Sucker

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## **Standards of Learning**

Science K.1, K.2, K.4, 1.1, 2.1, 2.5, 3.1, 3.4, 3.5, 3.6, 4.1, 4.5, 5.1, LS.1, LS.9

Math 3.17, 3.19, 4.14

## **Objective**

Students will:

- Get up close and personal with some of nature's smallest creatures – bugs!
- Construct a simple aspirator to be used to collect small insects for observation. Insects are excellent subjects to observe in order to give your students more practice in science investigation and processing.

## **Materials**

- Small transparent container with lid (film canisters, butter tubs and plastic spice bottles are examples of containers that work well)
- Two pieces of flexible plastic tubing or flexible straws
- Sterile gauze (the kind that is found in first aid kits – a 2” square per bug catcher will be ample)
- Modeling clay – 2 small pinches
- Tape – masking or clear
- Instrument to punch small holes into the containers (hand-held hole-punch, awl, ice pick, or drill – for adult use only)
- Shredded scrap paper
- Magnifying lenses for students to use to observe bugs

## **Background Knowledge**

Insects can provide an endless source of observations for students. Insects can be safely caught in a variety of ways. Nets work well for large insects, including butterflies and lightning bugs, but tiny insects often go unnoticed. One way to catch these small insects is with a bug sucker, also called a “pooter” or an aspirator. While this bug sucker is easy to make, you will probably need to practice making and using one ahead of time before constructing them with your students.

It may be appropriate to discuss “respect for life” with your students before undertaking “bug capture”. It is possible to capture, observe, and then release insects without harming them. Field biologists who study living creatures in their natural environment follow strict rules that prohibit them from disturbing the creatures. We want our students to follow these rules also during this activity.

Teacher Preparation:

Each film canister needs two holes punched into the sides of the canister – one hole on either side on the canister - before distributing to the students. Each hole should be large enough for the tubing or straws to fit through without pinching them shut.

## **Procedure**

1. Distribute gauze, tape and plastic tubing to the students. Instruct students to tape the gauze over one end of one piece of their tubing. The gauze prevents insects from being sucked into your mouth.



2. Distribute containers to the students. Instruct students to insert the tubing through one of the holes in the container so that the gauze end is down in the container and the uncovered end is sticking out of the top.
3. Now have students insert their other piece of tubing through the other hole.
4. Distribute the modeling clay and instruct students to seal both holes without pinching shut the tubing.
5. Substituting the shredded paper for insects, allow students time to practice “capturing” the paper.
6. Journey outside with your students to begin “bug capture”! Once caught, insects can be observed either outside or inside the classroom.
7. Wrap up this activity with a discussion that includes the following questions –
  - a. How many different insects did you capture?
  - b. Where did you locate the most insects? Hypothesize why.
  - c. Describe some common features among the insects.
  - d. Describe some differences.
  - e. What were the insects doing when captured?
  - f. Which captured bugs are true insects? Why? Which captured creatures are not true insects? Why not?
8. In order to be called an insect, a bug must have certain physical characteristics. These include a body that is divided into three parts, an exoskeleton (a hard outer shell), three pairs of jointed legs, compound eyes, and a pair of antennae. The word “insect” is Latin for segmented – so named for the segmented body. The three parts of an insect’s body are the head, thorax and abdomen. Insects are invertebrates – they lack a backbone so they must have a protective covering – hence the exoskeleton. Some common insects include butterflies, bees, ants, beetles, dragonflies, crickets, grasshoppers, ladybugs, and fireflies.

### **Extension**

For printable coloring sheets and diagrams of insects (including their life cycles) visit Enchanted Learning at [www.enchantedlearning.com/subjects/insects/printouts.shtml](http://www.enchantedlearning.com/subjects/insects/printouts.shtml).

Make a sketch of each of the bugs that you captured and then attempt to identify the bugs. For an excellent field guide on identifying Virginia insects go to “Agriculture and Natural Resources Numbered Extension Publications” at [www.ext.vt.edu/resources/anrpublications.html](http://www.ext.vt.edu/resources/anrpublications.html). Choose “Insects” under “Entomology” from this list. This site is produced by Virginia Cooperative Extension. Here you will find written descriptions, drawings and color photos of common Virginia insects, especially those that impact agriculture. Be careful – not all of the bugs listed here are true insects! This informative guide will also assist you with completing the next two activities.

Use the bug catchers in different areas of the school grounds, such as a wooded area versus a grassy area. Compare and contrast the types of bugs captured in each area. When making sketches of the captured bugs, include a sketch of its environment. Be sure to include the things that your bug needs to survive – food, covering and shelter. Is your bug a predator or prey?

After classifying the captured bugs, graph the results of the class. Hypothesize why one type of bug may exist in greater numbers than others.

Did you know that Virginia has a state insect? It’s the Tiger Swallowtail Butterfly. To learn about this butterfly’s life cycle, diet and habitat and to view beautiful illustrations, go to [www.enchantedlearning.com/subjects/butterfly/species/Tigersw.shtml](http://www.enchantedlearning.com/subjects/butterfly/species/Tigersw.shtml).



For information about other state insects go to  
[www.netstate.com/states/tables/state\\_insects.htm](http://www.netstate.com/states/tables/state_insects.htm).

**References**

This activity was adapted from the Junior Master Gardener Program – [www.jmgkids.com](http://www.jmgkids.com).

