

# Build A "Bug"

NR/WQ/2005-02

**GRADE LEVEL:**  
K- 6

**SUBJECT AREAS:**  
Science

**DURATION:**  
15-20 minutes

**SETTING:**  
Classroom  
Outdoors

**LINK TO THE UTAH CORE CURRICULUM:**  
Science –

Kindergarten:  
Standard 2,3

First Grade:  
Standard 1, 2

Second Grade:  
Standard 3

Third Grade:  
Standard 2

Fourth Grade:  
Standard 5

Fifth Grade:  
Standard 5

**PURPOSE:** To introduce students to macroinvertebrates and the adaptations they have which allow them to live in an aquatic environment.

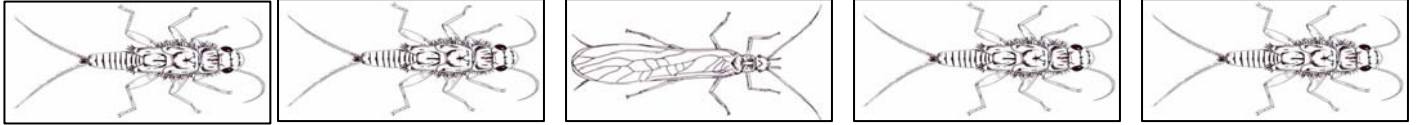
**SUMMARY:** By watching a presentation where one of their classmates is dressed up in a bug costume, students will learn what adaptations macroinvertebrates have in order to live in an aquatic environment.

**BACKGROUND:** The small animals that live in water are called aquatic macroinvertebrates. These macroinvertebrates include many types of insects as well as other animals such as worms, mollusks and tiny crustaceans.

Most aquatic macroinvertebrates make their home in rocks, leaves and the sediment of streambeds. These organisms have many special adaptations, allowing them to live in demanding environments. Macroinvertebrates that live in riffles and fast-moving water may have features that help them hold on to rocky or hard substrates, such as hooked feet, suction cups, and flat bodies. Macroinvertebrates that house themselves deep in muddy substrates may have adaptations for a low oxygen environment. See the "Adaptations" column of the following chart for more examples.

Adaptations	Items Representing Adaptations
Legs / claws	Water noodle with hooks on the ends
Tails	Garland or rope
Compound Eyes	Sunglasses with craft eyes glued on
Sensory hairs on head	Wig or furry hat
Gills	Feather boa
Antennae	Store bought or homemade antennae
Air bubble (Plastron)	Balloon
Air tube	Straw
Specialized mouth parts	Fake vampire teeth
Net for catching food	Fishing net

**MATERIALS:** Items contained in the "Items Representing Adaptations"



### PROCEDURE:

1. Ask the students to brainstorm different adaptations a bug would need to live in an aquatic environment. (For younger students you may want to start out with what an adaptation is.)
2. Choose a volunteer from the class. Explain you will be preparing the students to live as an aquatic macroinvertebrate.
3. Ask the students to tell you adaptations the volunteer would need in order to live in water.
4. As the students tell you adaptation ideas, dress the volunteer in the items from the table above that represent the adaptations.
5. Discuss the adaptations as you go along. Why would a macroinvertebrate need them? How do they help the macroinvertebrate survive?
6. A good way to end this activity is with a photo. "Does our volunteer need anything else? I think he/she needs his/her picture taken!"

**NOTE:** An individual macroinvertebrate may not have all of the adaptations listed on the table. Your volunteer "bug" will have features found on many different types of macroinvertebrates.

**WRAP-UP:** Discuss the importance of macroinvertebrates. Do fish need them? Do we need them? How do they help us?



**EXTENSIONS:** Follow this activity with...

- Macroinvertebrate Mix and Match
- Macroinvertebrate Simon Says
- Macroinvertebrate Research