Build-A-Bug Library Facilitation Guide

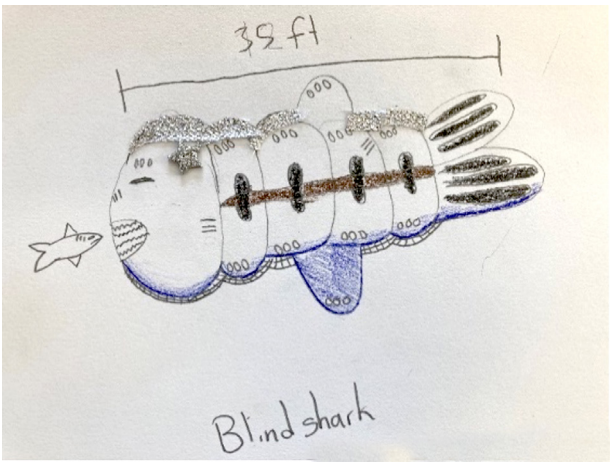
This guide was modified from USU Extension's water quality activity: Build-A-Bug

Activity Time: 10-30 minutes

Age Group: Ages 4 and up

What's the Point?

- Adaptations are unique characteristics that plants and animals have that help them survive in their environment.
- Aquatic animals have many different types of adaptations depending on how deep or shallow the water is where they live, how fast the water flows, what they eat, and how they can defend themselves against predators or other environmental hazards.
- Aquatic macroinvertebrates are small animals (*such as insects, mollusks, and worms*) that live in water.
- Some macroinvertebrates, such as leeches and snails, are very tolerant of pollution in water. Others, such as mayflies and stoneflies, are very sensitive to pollution and may move away or die from such waters. Identifying which species of macroinvertebrates are present in a body of water can help us understand if the water quality is poor or healthy.



Materials:

- Make a Macro-invertebrate Table Sign
- Photos of macroinvertebrates (pages 4-6 of Build-A-Bug)
- (*Optional*): your own model of a macroinvertebrate with three adaptations

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Materials (continued):

Various craft supplies, such as:

- Chenille sticks
- Googly eyes
- Toothpicks
- Straws
- Feathers
- Beads
- Colored tissue paper
- Puff balls
- Craft sticks
- Markers
- Pencils
- Glue
- Tape
- Drawing paper

Preparation:

- Set up a space with a table and chairs for patrons to engage in a craft activity
- Print the photos of macroinvertebrates and the table sign to display on the table. Consider laminating or using sheet protectors to make them more durable.
- Lay out craft supplies on the table.
- (*Optional*) Create your own macroinvertebrate with the materials and display on the table as an example.

Facilitation tips:

- Ask patrons: What types of creatures do you see at a river, lake, or pond?
    - ☼ Explain: Macroinvertebrates are small animals, such as insects, worms, and snails, that live in water. "Macro" means they are big enough to see without a microscope; "invertebrate" means they don't have a backbone.
    - ☼ Why are macroinvertebrates important? Macroinvertebrates can help tell us if the water is polluted or not. Some species (like leeches and snails) are able to live in polluted water, while others (such as mayflies, dragonflies, and stoneflies) are very sensitive to pollutants and cannot live in dirty water.
- Ask patrons: What adaptations would a macroinvertebrate need to live in a lake or river?
    - ☼ Encourage them to look through the examples of aquatic macroinvertebrates. What adaptations do they have to survive?
    - ☼ Examples: The ***Blackfly larva*** has a net on its head for collecting food; the ***Cranefly larva*** has tiny hairs and suction cups so it can hold onto water in fast flowing water.

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Facilitation tips (continued):

- Invite patrons to create their own macroinvertebrate that has three special adaptations to survive in an aquatic environment, using the craft materials on the table.
- When they are finished, invite patrons to share their creations. Can others guess what the adaptations are? Ask them: How does your macroinvertebrate's adaptations help it survive?

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Make a Macroinvertebrate!

1: Identify *three* adaptations that your macroinvertebrate has to help it live in water. Check out the pictures for ideas!

2: Use the art supplies to build your macroinvertebrate.

3: Give your macroinvertebrate a name.

¡Crea un macroinvertebrado!

1: Identifique *tres* adaptaciones que tiene el macroinvertebrado para ayudarlo a vivir en el agua. ¡Echa un vistazo a las imágenes para obtener ideas!

2: Usa los materiales de arte para crear tu macroinvertebrado.

3: Nombra a tu macroinvertebrado.