

Build A Bug - Bugs Don't Bug Me

Summary

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

Main Core Tie

Science - Kindergarten

[Standard 1 Objective 1](#)

Additional Core Ties

Science - 1st Grade

[Standard 1 Objective 1](#)

Science - 1st Grade

[Standard 1 Objective 2](#)

Science - 1st Grade

[Standard 1 Objective 3](#)

Science - 1st Grade

[Standard 4 Objective 1](#)

Science - 1st Grade

[Standard 4 Objective 2](#)

Science - 2nd Grade

[Standard 1 Objective 1](#)

Science - 2nd Grade

[Standard 1 Objective 2](#)

Science - 2nd Grade

[Standard 1 Objective 3](#)

Science - 2nd Grade

[Standard 4 Objective 1](#)

Science - 2nd Grade

[Standard 4 Objective 2](#)

Science - 3rd Grade

[Standard 2 Objective 1:](#)

Science - 5th Grade

[Standard 5 Objective 1](#)

Science - 5th Grade

[Standard 5 Objective 2](#)

Science - Kindergarten

[Standard 1 Objective 2](#)

Science - Kindergarten

[Standard 1 Objective 3](#)

Science - Kindergarten

[Standard 4 Objective 1](#)

Science - Kindergarten

[Standard 4 Objective 2](#)

Time Frame

1 class periods of 15 minutes each

Materials

Items contained in the "Items Representing Adaptations for Build A Bug" column in [Appendix C](#) (pdf). Use your imagination! Bright colors and silly items work well.

Background for Teachers

PURPOSE:

To introduce students to aquatic macroinvertebrates and their unique adaptations.

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 crustaceans. Most aquatic macroinvertebrates make their home in rocks, leaves, and the sediment of streambeds. These organisms have many special adaptations that allow 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 or suction cups; or flat, streamlined bodies that can handle high water velocity. Macroinvertebrates that house themselves deep in muddy substrates may have different sets of adaptations for low oxygen environments, such as air tubes or oxygen trapping red hemoglobin in their tissue. See the "Adaptations" column in [Appendix C](#) (pdf) for more examples.

Instructional Procedures

PROCEDURE:

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 with what an adaptation is.)

As students give you ideas, show pictures of invertebrates with these adaptations (see [Appendix B](#) (pdf)).

Choose a volunteer from the class. Explain that you will be preparing the student to live as an aquatic macroinvertebrate.

Ask the students to recall adaptations the volunteer needs in order to live in water.

As students give you ideas, dress the volunteer in the items from the table in [Appendix C](#) (pdf) that represent the adaptations.

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.

Discuss the adaptations as you go along. Why would a macroinvertebrate need them? How do they help the macroinvertebrate survive?

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!"

OPTIONAL ART ACTIVITY:

You can enhance this lesson with the following art activity (use the materials listed in the table in Appendix C).

Tell your students that they will be making an aquatic macroinvertebrate of their own.

Show the students the materials listed in the adaptations table of Appendix C, (or substitute other materials to represent adaptations as you see fit).

Ask them to recall adaptations they saw during the lesson and show them what materials might represent that adaptation (a feather might represent gills, bendaroos might represent legs and/or

tails, etc.).

Have students use the materials to create their own macroinvertebrate

Have each student share his or her macroinvertebrate with the class and explain the adaptations.

Extensions

This lesson can be followed with Macroinvertebrate Simon Says to teach about specific feeding adaptations. You can also follow this lesson with Macroinvertebrate Mix and Match to teach the three parts of a bug.

Bibliography

This lesson plan was developed by the Utah State University Water Quality Extension.

Authors

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