



DIY
LAKE SCIENCE

THE SCOOP ON HABITAT

WHAT KINDS OF HABITAT DO AQUATIC ORGANISMS LIVE IN?

ACTIVITY DESCRIPTION

Some aquatic organisms live in open water, while some live in soil at the bottom of a body of water. In this activity, you will build a scoop to observe creatures living in soil, and to create a new habitat for aquatic life.

Age: 7 and up

Preparation: 5 minutes

Activity: 30 minutes + data collection

Cleanup: 10 minutes

ACTIVITY MATERIALS

- Large plastic bottle, with a handle and a lid that closes
- Dark permanent/waterproof marker
- Utility knife
- 0.5 kg (1 pound) of rocks
- Rope or string
- Tarp or wax paper
- Waterproof boots or shoes (optional)
- Magnifying glass (optional)



MATERIALS NOTE

Choose an empty bottle that has never contained toxic chemicals (like bleach). Large vinegar, milk, or juice bottles are a good choice.

SAFETY I

Be careful when using a knife to cut your container. Get an adult to help you cut the bottle. Exploring watersheds is fun! But it's important to be safe and respectful when doing science in or near a body of water.

- If necessary, go with an adult.
- Only enter a body of water if it is safe and legal to do so.
- Rinse off equipment with clean water after using it.
- Wear appropriate footwear and clothing when working in or near a body of water.
- Follow the “leave no trace” and “pack it in, pack it out” principles.
- Check to see if the water and/or the creatures in it are protected by environmental regulations. Some sensitive ecosystems need to be left alone in order to recover from damage or overuse.

STEP 1

Rinse out your bottle. Mark the section you will cut away, as shown in the picture.



STEP 2

Carefully cut out the portion of the bottle you don't want. Cut slowly and away from your body. Get an adult to help you with this step. Once you have finished cutting and cleaned off the edges of the cut, your sampling scoop is ready to go!



STEP 3

Visit a nearby body of water (lake, stream, river, pond, or ocean) and wear waterproof foot gear if necessary. Remember the safety code for working in or near a body of water.



STEP 4

Make sure your scoop's lid is closed. Scoop a sample of mud, gravel, sand, or whatever type of sediment is on the bottom of your body of water. Slowly pour your sample onto your tarp or wax paper. Are there any creatures hiding in the sediment? What do they look like? If you have a magnifying glass, use it to see if there are any tiny organisms in your sample. Draw pictures of the creatures you find and make notes about your observations. Remember to return the sediment to the water within 10 minutes of observation.



STEP 5

Scoop a sample from another location and pour it out onto your tarp or wax paper. Did you find any new creatures? Draw or make notes about your observations.



STEP 6

You can also use your scoop to create habitat for aquatic organisms. Spread a variety of rocks and sediment inside the scoop so that it sinks. Open the scoop lid, so water can flow through when you submerge the bottle. Write a note about your experiment on your scoop, so others don't remove it. Carefully lower the scoop into the water in a place where it won't be disturbed by other people, waves, or currents. If necessary, tie a piece of string from the scoop to a tree, rock, pier, or dock on the shore so the scoop doesn't float away.



STEP 7

Leave the scoop in the water for at least two weeks so living things have time to find and inhabit it. When you return, make careful observations about any changes that occurred inside or around the scoop. You may want to photograph or draw a picture, and count and describe any organisms you see. You can also carefully pour the contents of the scoop onto a tarp or wax paper, to see what might have been hiding in the sediment. When you're done, return the sediment and anything in it to the water, being careful not to harm any animals.



WHAT'S GOING ON?

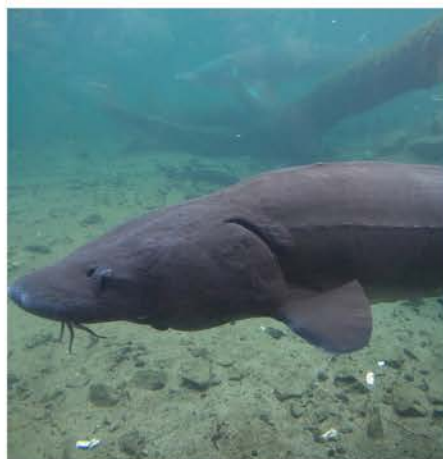
Habitat is the home or natural environment of a living thing. One area can contain many smaller habitats within it. In addition to the open water, the ground at the bottom of a body of water is important habitat for aquatic plants and animals. For example, crayfish (crawdads) and other organisms bury themselves in sediment at the bottom of a body of water for protection. Did you find any creatures living in sediment you examined? Some animals can't dig into soil; instead they protect themselves by living between rocks or among underwater plants. Did you find anything living in your scoop after it was under water for a few weeks?



There are many habitats around a body of water, including the ground at the bottom.

THE SCOOP ON LAKE LIFE

Scientists use samplers like your scoop to find out what's living at the bottom of bodies of water. For example, scientists recently used samplers to discover several new types of leeches (a kind of worm) and algae (a plant-like organism) in Russia's Lake Baikal. In some lakes and rivers where the habitat has been damaged, scientists build artificial habitat where aquatic creatures can live and protect themselves from



predators and extreme weather. Scientists have created artificial habitat (like the scoop you filled with rocks) to help an endangered fish called a sturgeon recover from years of overfishing.

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LawrenceHallofScience.org/do_science_now/diy_lake_science

CREDITS |

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This activity from the DIY Lake Science app allows families to investigate and learn about lakes and bodies of water at home or on the go! The app features twelve hands-on investigations, as well as videos and a lake simulation.

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