watch Ms. Sam's video by clicking the image below to start!



What did Ms. Sam say a Macroinvertebrate was? Let's break down the word:



Ιn

Vertebrate

'Macro' in Biology means you can see it with just your eyes

The prefix 'In' means without

'Vertebrate' in biology means backbone. (We're vertebrates)

Put that all together and you have...

Something you can see with your eyes, that is without a backbone. Just like Ms. Sam said!

Test your Animal Knowledge

Which of the animals pictured below are macroinvertebrates?











Life in a Stream Food web Activity

Background Information:

Herbivore: An animal that only eats plants

Omnivore: An animal that eats both plants and other animals

Carnivore: An animal that only eats other animals

Scavenger: An animal that eats dead animals and rarely hunts or eats living plants

Decomposer: An animal or plant that breaks down dead materials, scavengers can be considered a type of

decomposer.

Instructions

You will need

- 2-3 sheets of paper
- Markers, pencils, or anything else to write with
- Scissors
- Tape or glue
- Printer (optional

<u>Steps</u>

- 1. Either print and cut-out the animals on the next page OR cut a sheet of paper into 10 pieces and label each one according to the pictures.
- 2. Draw an image of a stream, it doesn't have to be perfect, just what you imagine a stream in a forest looks like. You can spend as little or as much time on the stream as you'd like
- 3. Place the animals on the drawing where you think they'd be, use tape or glue to hold them in place.
- 4. Draw lines or arrows between animals or food sources if they eat each other! This is how you build the food web. (We made a simple food web for your reference at the back of this packet if you want to check yours for accuracy)
- 5. Enjoy your art and the food web you made!

Example Food Web:





Food Web Activity



Dead material and dead plants/animals. When the leaves fall off the trees or an animal dies without being eaten, they end up here. Eaten by **Decomposers** and sometimes **scavengers.** To **decompose** something means to break it down. Animals and plants that are **decomposers** take dead or spent materials (like fallen leaves, or poop) and break it down by digesting it. Without **decomposers** fall leaves would pile up and never go away!



Living plants in the streams. This includes the tiniest plants called phytoplankton to the largest like rushes and sedges. It also includes algae and moss on the rocks. **Herbivores** eat these



Great Blue Herons are large wading birds. They are **carnivores** and mostly hunt for fish and other large animals that live in or near the water.



Crayfish are **scavengers**; they will eat anything they can find on the bottom of the stream or under rocks. They rarely hunt or attack living animals.



Dragonfly nymphs (baby dragonflies) begin their life underwater. Like their parents flying in the air, baby dragonflies are **carnivores**. They will hunt and eat small tadpoles, fish, and other aquatic insects. When they are hunting, dragonfly nymphs will walk very slowly in the water to sneak up on their prey. As they get closer they will use jet propulsion to swim quickly and catch their meal in their strong jaws. These insects have a very special ability to hold a lot of water in their abdomen. When they are ready to speed through the river, they will push the water out of their anus!

Food Web Activity



Leeches are mainly **parasitic**; they feed on the blood of other animals. Most leeches only like to drink blood from specific animals, and don't like human blood! They will often attach to animals like fish and frogs. Some leeches are **scavengers**, and will eat dead animals or plants!



Scuds are a type of small macroinvertebrate that like to live in slow-moving water. They have 7 pairs of legs; 4 more pairs than an insect! They are very similar to the pill bugs you find under rocks on land. Scuds are **omnivorous**; they like to eat algae, fungus, and other animals. Sometimes they will act as a **scavenger** and eat dead plants and animals.



Adult sunfish are **carnivores**. It will eat whatever small animals it can fit in its mouth! They have small teeth that they can use to rip larger prey apart, but have a hard time eating animals with a hard shell. When sunfish are babies, they will filter feed on plankton.



Mayfly nymphs are mostly **herbivores**; they will eat whatever plants or algae they can find while walking along the rocky bottom of the stream. Some mayflies are filter feeders, and will catch small pieces of plants or algae as they float along in the water. Mayflies have frilly gills along their abdomen, and need to live in clean, fast-moving water with a lot of oxygen.



Snails are usually **herbivores and decomposers** and will eat all kinds of vegetation in the stream. They like to munch on algae, dead leaves and plants.

Make your own Macroinvertebrate

Instructions

<u>You will need</u>

- Paper
- Markers, pencils, or anything else to draw with, you can even use paint or make a collage!

<u>Steps</u>

- Think about the macroinvertebrates Ms. Sam caught and think about what type of macroinvertebrate you would like to make.
- Consider these questions:
 - What does your macroinvertebrate eat?
 - What eats your macroinvertebrate ?
 - How does your macroinvertebrate move around?
 - How does your macroinvertebrate protect itself?
- You can choose to include some of these parts or all of these parts depending on what type of macroinvertebrate you're making.
 - Gills Mouth
 - Antenna
 Legs
 - Eyes
- Make your critter! Since you know everything you want to include and how this macroinvertebrate lives, create it.

Ms. Sam's Macroinvertebrate



Life in a Stream: Simple Food Web

What's missing from this food web is all the animals returning to the 'dead materials' photo. If any of the animals were to die they would be eaten by scavengers and decomposers. You can add this to your food web by putting a dotted arrow from each animal back to the dead materials.

