



Water Quality Activities

Agape Center for Environmental
Education

Water Quality: Stream Superheroes (K-8)












This activity focuses on some of the main adaptations of the animals that you may find on your field trip. Requires gathering some materials, but feel free to alter as you see fit.

Supplies Needed:

- Sleeping bag
- Feather boa
- Squirt bottle
- Hooks of some kind/suction cups
- Glasses with googly eyes all over them
 - Balloon
 - Straw
 - Net
- Foam board/something that floats on the water

Directions:

- Ask for a student to be your stream superhero.
- Dress up your student with the supplies that represent the adaptations of the macroinvertebrates.
 - Talk about/show pictures of the macroinvertebrate while dressing the student.
- Use the items to review at the end.

| Item | Macroinvertebrate | Adaptation |
|---------------------------------|--|--|
| Sleeping bag | Caddisfly larvae  | Build homes out of different materials for protection. |
| Feather boa | Mayfly nymph Stonefly nymph Damselfly nymph    | Gills. Feather-like structure increases surface area to gather more oxygen. |
| Squirt Bottle | Dragonfly nymph  | Squirts water out of abdomen to propel oneself. |
| Hooks of some kind/suction cups | Stonefly nymph  | Tiny hook-like structures on feet to grip rocks and leaves in fast moving water. |
| Glasses with googly eyes | Most macroinvertebrates | Compound eyes- used to sense movement. |
| Balloon | Water bugs/beetles  | Grab air from the surface and carry it around with them. |
| Straw | Water scorpion  | Breathing tube. |
| Net | Caddisfly larvae  | Sometimes build nets to catch their prey |
| Foam board/item that floats | Water strider/fishing spider   | Hair-like projections that allow them to float on the water and not break the surface tension. |

Water Quality

Guess Who?: Mystery Macros (5-8)

This activity focuses on the appearance of macroinvertebrates and how to identify them.

Supplies Needed:

- Print out provided flashcards
- Cardboard (optional)
 - Glue/tape
 - Paper Clips

Directions:

- Create teams based on your discretion and materials (partners, split the class into two teams, etc.)
- Play the game “Guess Who?” with macroinvertebrates instead of people.
 - Directions for “Guess Who?”:
 - For two people playing: each person picks one macroinvertebrate to be their mystery macro.
 - Your objective is to ask your partner one question each turn to eliminate any macroinvertebrate that they have not chosen.
 - Do this by asking questions that characterize the macros. For example, does the macro have more than one tail?
 - Continue taking turns asking questions until the first mystery macro is discovered. Who ever figures out their opponents first, wins!



Water Quality

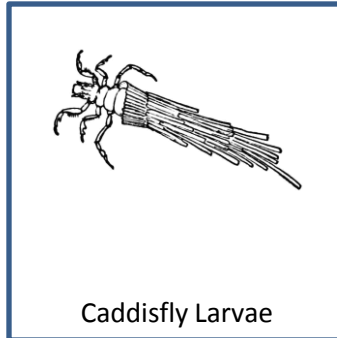
Guess Who?: Mystery Macros Continued



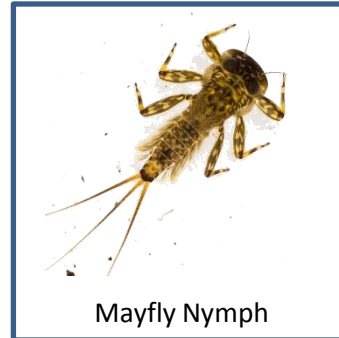
Damselfly Nymph



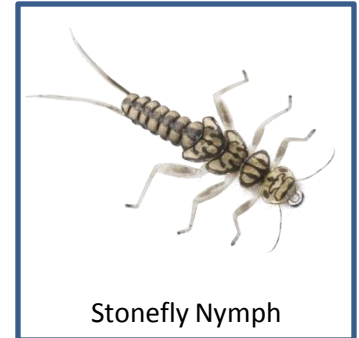
Damselfly Nymph



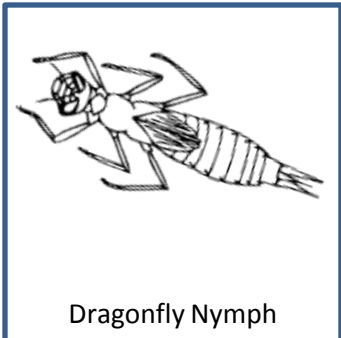
Caddisfly Larvae



Mayfly Nymph



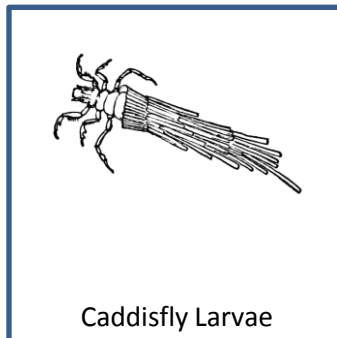
Stonefly Nymph



Dragonfly Nymph



Dragonfly Nymph



Caddisfly Larvae



Midge Larvae



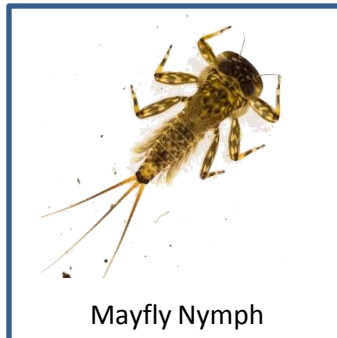
Dobsonfly Larvae



Water Scorpion



Water Scorpion



Mayfly Nymph



Midge Larvae



Dobsonfly Larvae

Water Quality

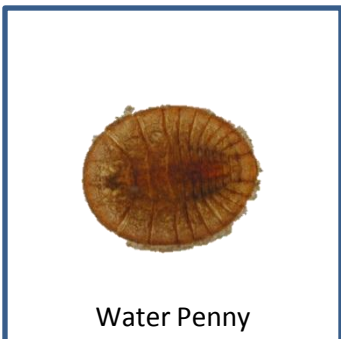
Guess Who?: Mystery Macros Continued



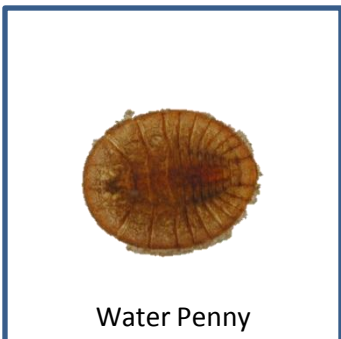
Cranefly Larvae



Cranefly Larvae



Water Penny



Water Penny



Riffle Beetle Larvae



Whirligig Beetle



Whirligig Beetle



Predacious Diving Beetle



Predacious Diving Beetle



Riffle Beetle Larvae



Mosquito Larvae



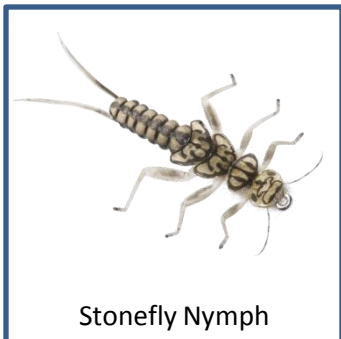
Mosquito Larvae



Riffle Beetle



Riffle Beetle



Stonefly Nymph

Water Quality: Macro Mix-up (K-5)

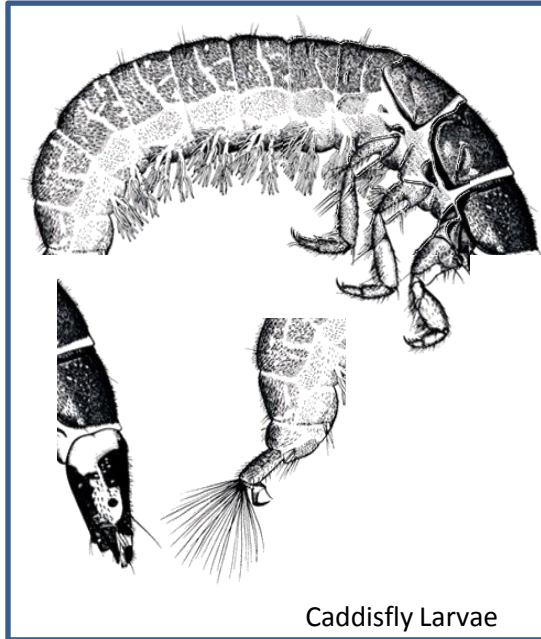
This activity focuses on the appearance of macroinvertebrates and their body parts.

Supplies:

- Print outs provided
- Tape (optional)

Directions:

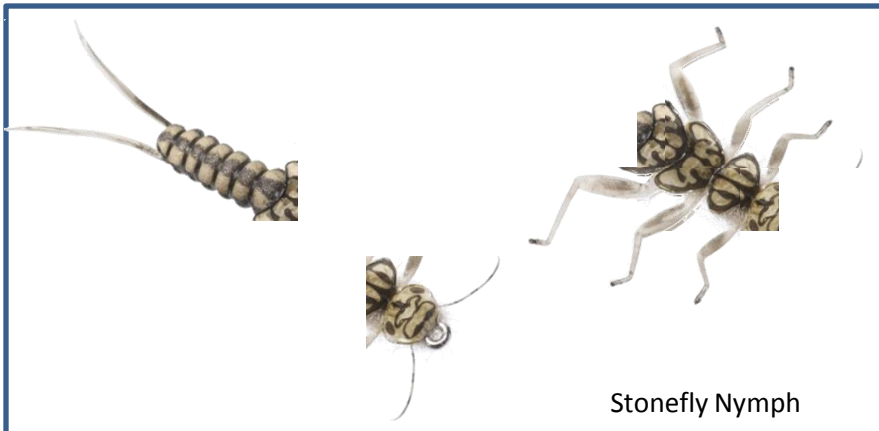
- Cut out the pieces of each macroinvertebrate that is provided.
- Mix up the pieces
- Have students match the head, thorax, and abdomen to the appropriate organism. (Tape together if desired).



Caddisfly Larvae



Mayfly Nymph



Stonefly Nymph



Damselfly Nymph