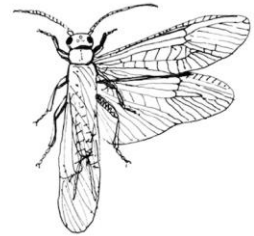
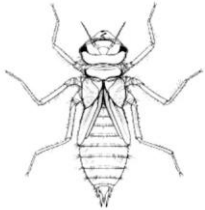




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Match the macroinvertebrate nymph to its adult stage!

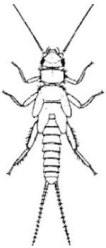
1. Dragonfly nymph



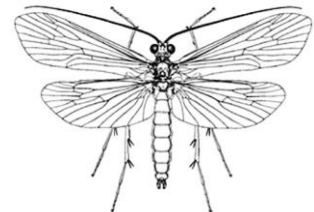
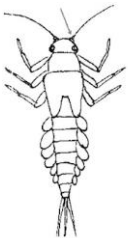
2. Damselfly nymph



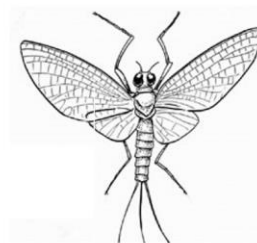
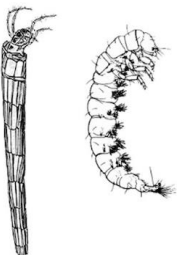
3. Stonefly nymph



4. Mayfly nymph



5. Caddisfly nymph





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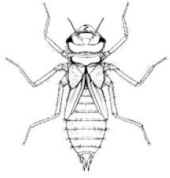
Test your knowledge!

1. What is a macroinvertebrate?
2. What is an indicator species? What do they indicate about our stream?
3. Why are macroinvertebrates important?
4. Based on what we found, do you think Ward Creek is healthy or unhealthy?
5. What can YOU do to help your local streams?



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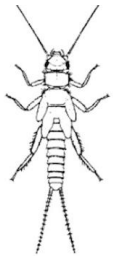
Answer Key:



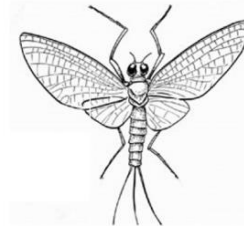
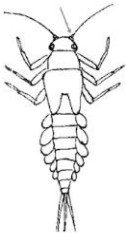
Dragonfly: Dragonflies spend their nymph stage in the water using gills to breathe before becoming adults. Adults spend all of their time out of the water and breathe with tracheae, tube-like structures on the outside of their skin.



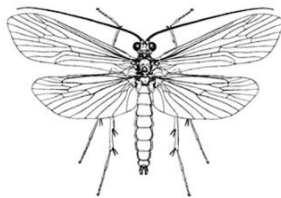
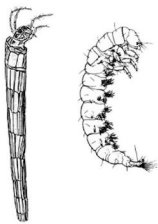
Damselfly: Damselflies and dragonflies can easily be confused but whenever they are in resting position, a damselfly's wings lay parallel to their body and a dragonfly's wings lay perpendicular to their body.



Stonefly: Stoneflies are sensitive indicator species and can only live in clean unpolluted water. They spend 3 years as nymphs before moving out of the water, molting, and becoming adults.



Mayfly: Mayflies spend 2-3 years in the nymph stage where they breathe underwater using gills. Once they become adults, they only live for one day! Long enough to reproduce and lay eggs.



Caddisfly: Caddisflies undergo complete metamorphosis. They are caterpillar-like in their nymph stage, develop hard shells in their pupa stage, and have wings like moths in their adult stage.



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1. What is a macroinvertebrate?

A macroinvertebrate is an organism that is lacking a backbone (invertebrate) and is large enough to see with the unaided eye (macro).

2. What is an indicator species? What do they indicate about our stream?

An indicator species is an organism whose absence or presence indicates how much pollution is in an environment. Because Ward Creek has several different indicator species living in it, we can infer that it does not have much pollution!

3. Why are macroinvertebrates important?

The presence of macroinvertebrates in our stream indicate how healthy and clean our stream is. Macroinvertebrates are also extremely important to the food chain of the stream because many other larger organisms feed off of them and would not survive without them.

4. Based on what we found, do you think Ward Creek is healthy or unhealthy?

Based on the number of macroinvertebrates and indicator species we found, Ward Creek is very healthy!

5. What can YOU do to help your local streams?

You can help protect your local streams by keeping the environment clean! Don't throw trash in your streams or on the ground (it will eventually end up in the waterways). If you have to use plastics like water bottles and grocery bags make sure you recycle them instead of throwing them away, or better yet, use reusable plastics instead of single-use plastics! Reusable water bottles and reusable grocery bags easy switches that help the environment around you!

Resources:

<https://droso4schools.files.wordpress.com/2018/09/fig6b-aquaticinsects.jpg>

<https://droso4schools.wordpress.com/l6-lifecycle/>