

A Picture of Health

Time: 5 -10 minutes

Activity Overview:

- Students will pretend to 'fish' in the Credit River and learn about tolerant and sensitive species. By using wooden fishing rods, students will 'fish' over a blue tarp and try to catch laminated fish. You will be running this activity with someone from Credit Valley Conservation.

Objectives:

- Students will learn about tolerant and sensitive fish species and learn about how water quality affects fish species.

Setup:

- This activity is set up before the water festival.

Safety:

- Watch fishing poles to ensure students do not hit anyone. If students get their "hooks" snagged on each other, they should carefully untangle them and not pull.

Material:

- 10+ wooden fishing rods
- Large blue tarp (acts as river)
- Rocks from around location (use tent pegs if possible)
- Laminated fish (variety)
- Tape
- 2 Large posters on wooden stakes
- Pylons (2) for creating entrance to activity
- Person Counter

Vocabulary:

Sensitive fish - fish that can only live in healthy water which is cool in temperature, has lots of oxygen and shade.

Tolerant fish - fish that can live in less healthy water where there are warmer temperatures, less oxygen and less shade.

Background Information:

Sensitive Fish Species: Brook Trout, Mottled Sculpin

Tolerant Fish Species: Brown Bullhead Catfish, Brook Stickleback

What will I be doing? (Procedure):

Before you start your presentation check with the teacher or chaperone that the entire group is present and ready to start.

Introduction: * Have the group line up at the entrance to the activity

- Welcome to the Credit River. Today you are going to have a chance to fish in the Credit River. Once you catch a fish, look at the posters and find out what you caught! You can then find out what this fish needs in order to survive.
- The fish we find in our river can act as clues to how healthy the river is. Some fish need very healthy water to survive while other can handle less healthy environments. Let's go fishing to find out if we have a healthy river.

- Hand out rods.
- After students have caught a fish, have them bring the fish to you. You will be standing beside the two big posters. Ask them what they have caught
- Identify the types of fish caught – Brook Trout, Mottled Sculpin, Brown Bullhead, Brook Stickleback
- Use the pictures to ask the students what type of area they live in and what they need in order to survive.
- Does this mean that they are sensitive (need clean, cool water, shade and high oxygen levels) or tolerant (can live in more polluted waters, warmer temperature, less shade and less oxygen levels)?
- Once the student has identified which fish they caught, they can drop their fish back into the river (this is called 'catch and release')
- If there are still students fishing tell the students who are finished to cheer on their friends. When they are done have them wrap the string around the pole to prevent tangling and tape rope to the pole.
- Once all the students are finished do a quick conclusion.

Conclusion: (have all rods already collected)

- One of the things we do at Credit Valley Conservation is clean up areas like this unhealthy one. If we monitor fish species and start to see more sensitive fish using the area, we know that there is an improvement in the health of the river.
- How many people caught a Tolerant fish? How many people caught a sensitive fish?
 - Based on the number of each you can decide if this round was a healthy or not healthy environment (ie: more tolerant fish means NOT healthy, more sensitive means healthy)
- How does pollution negatively affect fish populations in the Credit River? (**mention 2-3** based on time)
 - **(Include this point every time) Climate change has many impacts on the Credit River. With longer dryer seasons, we can experience rising water temperatures and droughts. We can also experience flooding during extreme rain events. All of these can negatively impact a variety of fish species.**
 - Increased levels of pollution can lead to the malfunction of different organs within the fish
 - The food chain can be damaged, altering the ecosystem
 - Human food sources can become contaminated
 - There can be a change in the temperature of the water, altering the species composition and chemical components of the water body
 - Sewage plants are point sources of nutrients – phosphates and other nutrients have the potential to negatively affect the Credit River by causing excess plant growth, which leads to lower levels of dissolved oxygen.
 - There are waste treatment plants in Acton, Orangeville, and Georgetown, all which connect to the Credit River.
 - Stormwater run-off – increases in sedimentation / erosion

Specific Reminders for Students:

- The main things to remember are:
 1. Different fish have different needs
 2. The health of the river is very important
 3. The fish we find can tell us a lot about the health of the river.
 4. Fish communities, and the aquatic environments in which they live, can be affected by both temperature and precipitation changes.
 5. Climate change can influence the Credit River and have negative effects
 6. Be safe! Don't swing fishing poles