



Biomagnification Tag Game

Organizational Info:

Title: Biomagnification Tag Game

Summary: Students play a tag game that visually demonstrates how microplastics, toxins, and mercury accumulate in fish and humans, and illustrates the interconnectedness of living things.

Inquiry Question: Inquiry Question 4: How do Contaminants Threaten Water?

Duration: 30 min

Learning Environment: Classroom, outdoor

Season: All

Materials:

- Biomag Tag Game Instructions.pdf
- Approximately 100 beans or other small items that can be used to represent POPs
- Three different coloured arm bands
- Paper, cloth, or plastic bags for putting beans in

Meta Data:

Content Type: Activity

Bundle: Water

Theme: Contaminants in the Environment

Subject Area: Biology, Environmental Education, Geography, Health, Outdoor Education, Physical Education, Science, Social Studies

Curriculum Focus: 8

Curriculum Links:

Science and Technology: B1.2, C1.2, E1.1, E1.2, E1.3, E2.3, E2.6

This activity is a hands-on activity that visually demonstrates how microplastics, toxins, and mercury accumulate in fish and humans, and illustrates the interconnectedness of living things. The toxins in the lakes/oceans are consumed by small fish and stored in their flesh and fat. Bigger fish who rely on fish lower in the food chain accumulate these toxins, which are then eaten by humans. Over time, excess amounts of toxins increase risk of cancers and can decrease mental function.

Both Indigenous and non-Indigenous communities are affected by this. For example, only one walleye (pickerel) per year is recommended to eat near Hiawatha/Rice Lake because of biomagnification of toxins. Some safer local fish to eat are perch because they are vegetarian, therefore, there is less biomagnification.

Instructions for Biomagnification Tag can be found in **Biomag Tag Game Instructions.pdf** adapted from the following lesson plan:

<http://ecolearninghive.org/sites/default/files/Lesson%20Plan%20-%20Bio%0Mag%20Tag.pdf>.