STUDENT NAME: **CLASS:** **DATE:**

Circle your Ecosystem: River / Lake

Ali Shakoor needs your help! Fisheries biologists have discovered that walleyes migrate between rivers and lakes for spawning, foraging, and overwintering habitat each year. To understand what walleyes need in their biotic communities to survive, Ali has assembled a team of fisheries biologists to decode the food webs of these two aquatic ecosystems. And you are part of the team!

You ready, **investigator**? Your expertise in biomass will help Ali and your group track the flow of energy in the food web. **Biomass** is the amount of organic matter inside plants and animals that is used for energy production. When an organism consumes this organic material, they receive energy, but only a sliver of it … 10%. Therefore, you know that the biomass will decrease the further it goes … from plant to plankton to herbivores to carnivores. That is why there are higher quantities or biomass of plants than all organisms in an ecosystem. Therefore, a healthy food web will have an abundance of plants, many herbivores, some omnivores, and very few carnivores.

Consider investingating the following:

- What is a food chain?
- How does one sketch the flow of energy in a food chain? Sketch below:

- The predator expert will decode which organisms consume what. Sketch the flow of biomass between the organisms. Be sure to draw the energy flowing into the predator.
- What are trophic levels? Consult with your trophic specialist.
- Does your trophic pyramid accurately represent the decrease of biomass with each trophic level?

Record your findings on a separate sheet of paper or computer document. Then, share your findings with your team members. As a group, design a food web and trophic pyramid on two large sheets of paper.

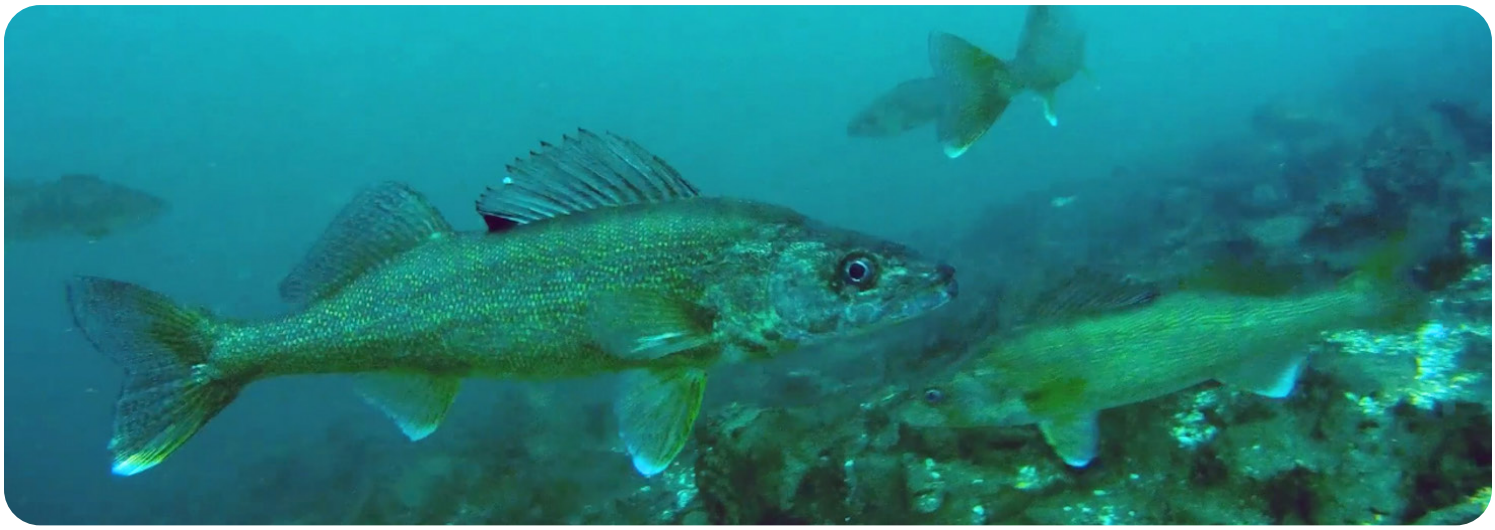
The **food web** must have:

- **Background:** The entire poster should have a drawing or painting of the ecosystem.
- **Organisms:** Place drawings or printed pictures of all the organisms where they live in the ecosystem.
- **Labels:** List the names of the organisms beneath the drawing of the organisms. The labels must be color-coded to the organisms' trophic levels.
- **Arrows:** Organisms are connected with arrows to show the flow of biomass. The arrows must be color-coded to the trophic level transferring the energy.

The **trophic pyramid** must have:

- **Pyramid:** Draw a large outline of the trophic pyramid and its levels.
- **Color:** Color in each trophic level to their designated color.
- **Organisms:** Place drawings or printed pictures of all the organisms into their correct trophic levels.
- **Labels:** Write labels for the trophic levels and the organisms.

Let your creativity go wild when building your posters. You may paint, sketch, cut construction paper, or glue in natural resources like sticks, pebbles, sand, moss, or grasses. You will present your food web and trophic pyramid to your class with supporting research. Use your diagrams to highlight what prey sources you conclude are important to the walleye in your ecosystem.



The Walleye Food Web