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!

Okay, **predator expert**. Your role is vital in building the food web. You know that without energy from food, all life on earth would be extinct. That's why you are skilled in identifying the natural resources that organisms depend on for survival. Your job is to determine who consumes who or what in the ecosystem. Really, you are helping to decode the many food chains in the ecosystem. A **food chain** is one possible path that energy may take: from plant to plankton to herbivores to carnivores.

Consider researching the following:

- What is in a walleye's main diet?
- Of the walleye's prey, which of those organisms live in your ecosystem?
- Walleyes are apex predators. What does this mean?
- Where do biologists place apex predators in the food web? Discuss with your trophic specialist.
- Are there other apex predators in the ecosystem?
- What do the prey of walleyes consume?
- Keep researching what every species consumes. Relay this information to your trophic specialist and biomass researcher.
- What plants are a part of the food chain? Consult your environmental manager for help.
- Is fishing permitted on your lake or river? Where would you put humans in your food web?

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.