

**WATER QUALITY AWARENESS IN URBAN ENVIRONMENTS**

**LESSON 3  
WATER WEB OF LIFE**



# LESSON 1: Water Web of Life

**Subject Overview:** John Muir once wrote that, “If you tug at a single part of nature, you’ll find it’s connected to the rest of the world.” This concept is easily understood when looking at food webs where resources are shared and a “web of life” is formed. Animals occupy different levels of food webs, with herbivores at the bottom and carnivores at the top.

All organisms in nature need food energy to survive. Plants are **producer organisms**; they make their own food through a process called photosynthesis that uses energy from the sun. Animals are **consumers**; they cannot produce their own food, and therefore must acquire it from some outside source. Some animals eat only plants for food (**herbivores**); some animals eat only animals (**carnivores**); and other animals eat both plants and animals (**omnivores**). Typically, animals do not have a single food source; resources are shared among consumers. In nature, producers and consumers are intertwined in **webs of life** where different organisms feed upon others to meet their energy needs and different parts of an ecosystem depend on each other.

**Activity Concepts:** Food webs; webs of life; interdependency.

**Subject Links:** Science; Art.

**Vocabulary:** Food web; producers; consumers; herbivore; omnivore; carnivore; interdependency.

**Purpose of activities:** Youth will have the opportunity to explore how food resources are shared in a food web/web of life.

**Overview of activities:** Youth will explore food webs/webs of life through a hands-on activity.

**Time Required:** 40-60 minutes

### Getting Ready:

- Make certain the yarn is rolled into balls.
- Print the Water Web of Life clues and images (**see Appendix A and B**).
- Divide the youth into pairs/small groups (depending on the number of youth, they may work as individuals or pairs within the main group).
- Provide each individual/pair with one “**water web of life image**.” Make certain that all 35 images are handed out randomly to the youth. If you have less than 35 youth, each individual/pair will receive more than one image.
- Have the pairs/small groups of youth stand in a circle; each individual/pair should be one least arm’s length from the next.

#### Materials Needed:

- Two balls of yarn; different colors
- **Printout** - 35 “water web of life images” (**see Appendix A**)
- **Printout** - 35 “water web of life” clues (**see Appendix B**)
- Large open space (playground; gymnasium; multipurpose room)

### Opening Questions:

**Ask the youth the questions listed below. Ask them to discuss and explain their thoughts and record them on the flip chart and butcher paper provided.**

- How and where do they get the food they eat?
- How and where do they think wild animals get their food?
- Do wild animals obtain their food the same way people do? Why, or why not?

# Activity

## Exploration (Procedure):

- Begin the activity with the facilitator reading the water **web of life clues in order 1-35**. **Note:** Provide the youth with opportunities to “guess” what the answers to the clues are. Make certain they explain the reasoning behind their “guesses.”
- When the correct answer is determined, have the youth connect the two points by passing the ball of yarn. For example:

Clue 1. I am the sun. Plants use my energy to make food. Even tiny microscopic plants like.....Guess what?

### **Algae**

In this situation, the person who is in possession of the picture of the sun will hold the end of the string of yarn. The ball of yarn is then taken across the room to the person holding the picture of algae.

- Continue this process through all 35 clues and images. This allows the youth to see the interdependencies within a water web of life.
- The activity is finished when all water web of life options have been connected.

## Sharing, Processing, & Generalizing:

- Ask the youth to explain, using their words, what happened in the activity. **Ask them to record their thoughts on the butcher paper or flip chart provided.**
- Ask the youth to look at the water web of life carefully and imagine if something were removed (e.g., sun; algae). How might this affect other parts of the web? **Ask them to record their thoughts on the butcher paper or flip chart provided.**

If necessary, use more targeted questions as prompts to get to specific points. Additional questions might include:

- Ask the youth to explain the different types of connections that they observed in the activity.
- Have the youth draw a chart of all of the different foods that were available to different animals in this water web of life.

### **Concept and Term Introduction:**

At this point, teachers/facilitators need to ensure that the concepts and terms web of life, producer, consumer, herbivore, omnivore, and carnivore have been introduced.

**Note:** The goal is to have the youth develop these concepts through their exploration and define the terms using their own words.

### **Concept Application (Optional Extension Exercise):**

- Take a field trip to a lake, pond, stream, or coastal area. Have the youth observe the different plants and animals. Identify whether the animals they observe are herbivores, omnivores, or carnivores.
- Have the youth predict how a food web would be affected if one part of it were eliminated for one reason or another (e.g., habitat destruction; pollution).

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