

Phytoplankton Lesson Plans

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Lesson 5 approx. 60 minutes

Materials: Digital device & materials to create a model of a lake's food chain and food web

Essential Question: What is the difference between a food chain and a food web?

Goal: To understand the differences between a food chain and a food web.

Tasks:

1) View [Our Environment Part-2 | CBSE Class 10 Science \(Biology\) Explanation | Food chains & Food Web | NCERT](#)

and/or [Difference between Food Chain and Food Web | Ecosystem | Ecology](#)

2) Discuss videos. Then, break into small groups or work independently to create a model of a lake's food chain and food web intended to explain the similarities and differences between them.

3) Lead the Predator-Prey game outlined in [Planktivities: Plankton/Aquatic Organism Activities](#)

Answers:

A food chain outlines who eats whom. It follows a simple, linear series of steps of energy from the producer to the consumers that eat it.

A food web is all of the food chains in an ecosystem. A food web's flow of energy doesn't just follow a simple line, it moves and loops. Therefore, it becomes convoluted easily. However, food webs break down how animals and trophic levels interconnect. Each organism in an ecosystem occupies a specific trophic level or position in the food chain or web.

Lesson 6 approx. 60 minutes

Materials: Plastic bottle & cap, pantyhose or similar material, hole puncher, string, duct tape, scissors.
Teacher reads the [valuable teacher resource](#) before the lesson begins

Essential Question: How do I build a plankton net catcher?

Goal: To build a plankton net for use in lesson 7.

Task:

1) Make a plankton net catcher following the directions in [Planktivities: Plankton/Aquatic Organism Activities](#)

Lesson 7 approx. 60 minutes

Materials: A nearby lake or pond, plankton net catchers, microscopes, glass slides, coloring pencils & a table set on a flat surface

Essential Question: What does plankton look like under a microscope?

Goal: Examine and identify different types of plankton.

Tasks:

- 1) Use the plankton net catcher to collect plankton from a nearby pond or lake as described in step 4 of [Planktivities: Plankton/Aquatic Organism Activities](#).
- 2) Place each water sample on an individual glass slide for microscope examination. Identify the different types of plankton using the plankton identification guide in the [valuable teacher resource](#) (pg. 7 & 8).
- 3) Refer to the [Plankton Classifying](#) page to classify and color different types of plankton. Refer to *Our Scrumptious Lake PHYTOTASTIC!* chapters' pages to recognize how wildly different and vibrant plankton can be.

Further enrichment: View [The Invisible Watery World of Plankton](#)

Answers:

Responses will vary e.g.; irregular shapes, spikes, coiled shells, jointed appendages, delicately woven chains, blobs, etc.

Lesson 8 approx. 60 minutes

Materials: Digital device, blank note cards & coloring pencils

Essential Question: How important is phytoplankton to your existence?

Goal: Create an understanding and appreciation of how significant phytoplankton is to one's very existence.

Tasks:

- 1) View [Five Reasons To Thank Plankton](#)
- 2) Facilitate discussion relevant to; How important is phytoplankton to one's existence?
- 3) Students write a thank you note to phytoplankton from either themselves or from one of the story's characters.
- 4) Distribute students' written responses from lesson 2. Ask students to reflect on and respond in writing to; Throughout lessons, I made or did not make growth in my understanding of phytoplanktons' significance and impact on the aquatic food chain. Give 3 or more reasons.
- 5) Further enrichment: View [Why We Owe Our Lives to Phytoplankton](#)

Answers:

Students demonstrate knowledge and understanding that phytoplankton: forms the foundation of the aquatic food chain and food web, are responsible for half of the photosynthetic activity on earth, making them important to both their local and the global ecosystems.

Also, phytoplanktons importance in carbon-dioxide sequestration which makes them a target for controlling carbon dioxide in the atmosphere.