

Details



Completion Time: About one period

Permission: Download, Share, and Remix

Plankton Parade

Overview

This lesson came out of a desire to connect the plankton research that I did during the 0902 Healy cruise with my young “researchers” back in Washington, DC. I wanted them to understand that plankton not only feed the Arctic but that much of the world relies on these little critters that come to life for us when we look through a microscope and into a drop of water.

Objectives

- Students will understand the role that plankton plays in ecosystems both in the Arctic and locally.
- Students will be able to explain the process of collecting a plankton sample.
- Students will be able to identify and describe one microorganism in their water sample.

Lesson Preparation

- To make plankton nets, make metal pipe fittings and sew a ten inch long section of old stocking around the ring so that it looks like a sleeve with the ring inside the top. The kids will attach the vials to the bottom with a rubber band. You can also use a pre-fabricated net.
- Print out plankton field guides.
- Gather a sample of “creek water”.
- Cut cardstock into postcard-sized pieces.
- Copy postcard template.
- Prepare cards with local animals on them for food chains that can be linked to plankton.

Procedure

1. Hook: Look at PowerPoint slides of various types of plankton. What are these mystery organisms? Where do you think they are found?
2. Link: We can’t understand what we see on land without understanding what goes on in the water. In the Arctic, scientists study small organisms that live in the

Materials

- Freshwater samples from a natural source
- Microscopes
- Stockings
- Circular pipe fittings
- Rubber bands
- Plastic vials
- Postcard template
- Plankton field guide
- Droppers
- Card Stock
- Plankton PowerPoint (attached)

water- plankton. Life in the Arctic depends on plankton. Show PowerPoint slide of plankton food web.

3. Connection: Is that true here? Let's look at some of the animals that depend on plankton for life in our local creek/bay/stream. Play "Fantastic Food Web". Pass out cards representing organisms that can be found in your local ecosystem. Ask students to find something that the animal on their card eats and link arms with that organism. All students should end up connected to the phytoplankton stationed in the middle of the rug. (Explain: Our ecosystem has a greater variety of food to offer than the Arctic does and many of these animals are omnivores but plankton is important nonetheless).

4. Understanding the Action: If these guys are so important- how do we study them? Show PowerPoint slide of scientists capturing plankton.

Option One: Go to park for sampling.

or

Option Two: Stations

5. Action: Try it!

Station One: Make a plankton net. Attach the vial to the stocking with a rubber band.

Station Two: Capture a sample from a container of creek water. Using the dropper, take a sample from the vial and make a slide.

Station Three: Examine the sample under the microscope and identify your organism.

Station Four: Draw your organism on postcard-sized card stock.

Station Five: Early finishers can read independently "Spectacular Sponges" and "Wonderous Walruses" from Ranger Rick.

6. Share: Introduce your organism and dance like your plankton moves.

7. Wrap Up: SpongeBob video clip "Plankton Song". <http://spongebob.nick.com/videos/play/plankton-song-music-video/>

8. Assessment: Share your discovery! Have students write a short letter to a friend or parent describing their methods and discoveries. Glue it to the back of the card stock and mail a "Plankton Postcard" to a friend.

Extension

Design your own imaginary plankton. What does it eat? How does it move? What eats it? Why is it important to its imaginary food web?

Resources

Good plankton guide: <http://www.msnuceus.org/watersheds/mission/plankton.pdf>

Plankton Photographs courtesy of Celia Gelfman, University of Rhode Island

Planktonic Food Web Carin Asjian, Woods Hole Oceanographic Institute

Arctic Food Web, Katrin Iken, University of Alaska, Fairbanks

Assessment

Student understanding of the activity and the organisms that they observed is evaluated through the explanation that they include in the postcard to a parent.

Did they understand the process?



Can they explain what they saw?

Are they able to tell why plankton is important in the food chain?

Credits

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National Science Education Standards (NSES):

Content Standards, Grades K-4

Content Standard A: Science As Inquiry

- a. Abilities necessary to do scientific inquiry
- b. Understandings about scientific inquiry

Content Standard C: Life Science

- a. Characteristics of organisms
- b. Life cycles of organisms
- c. Organisms and environments

Date: _____

Dear _____,

What are these mystery creatures?

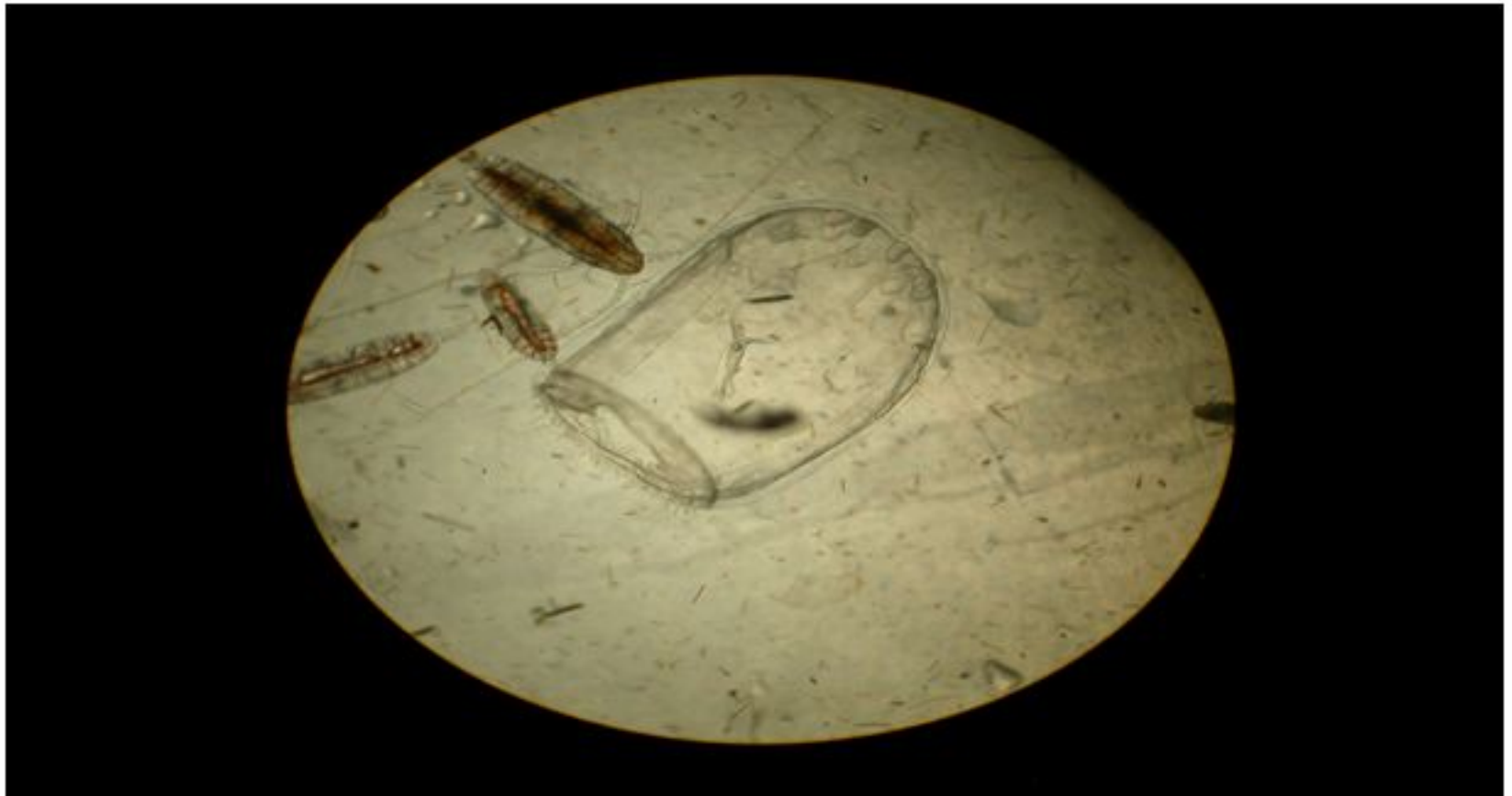


Photo courtesy of Celia Gelfman, University of Rhode Island

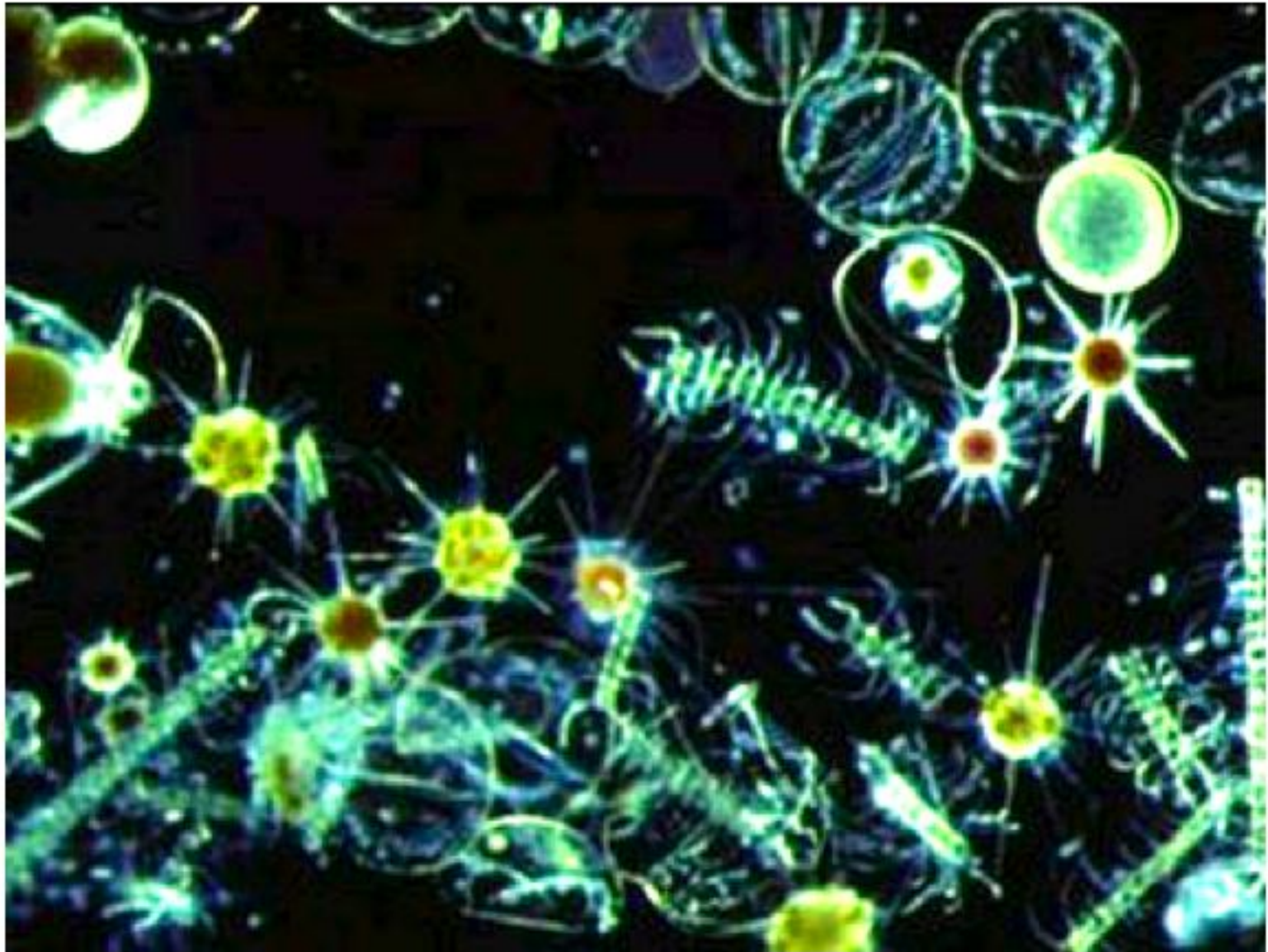
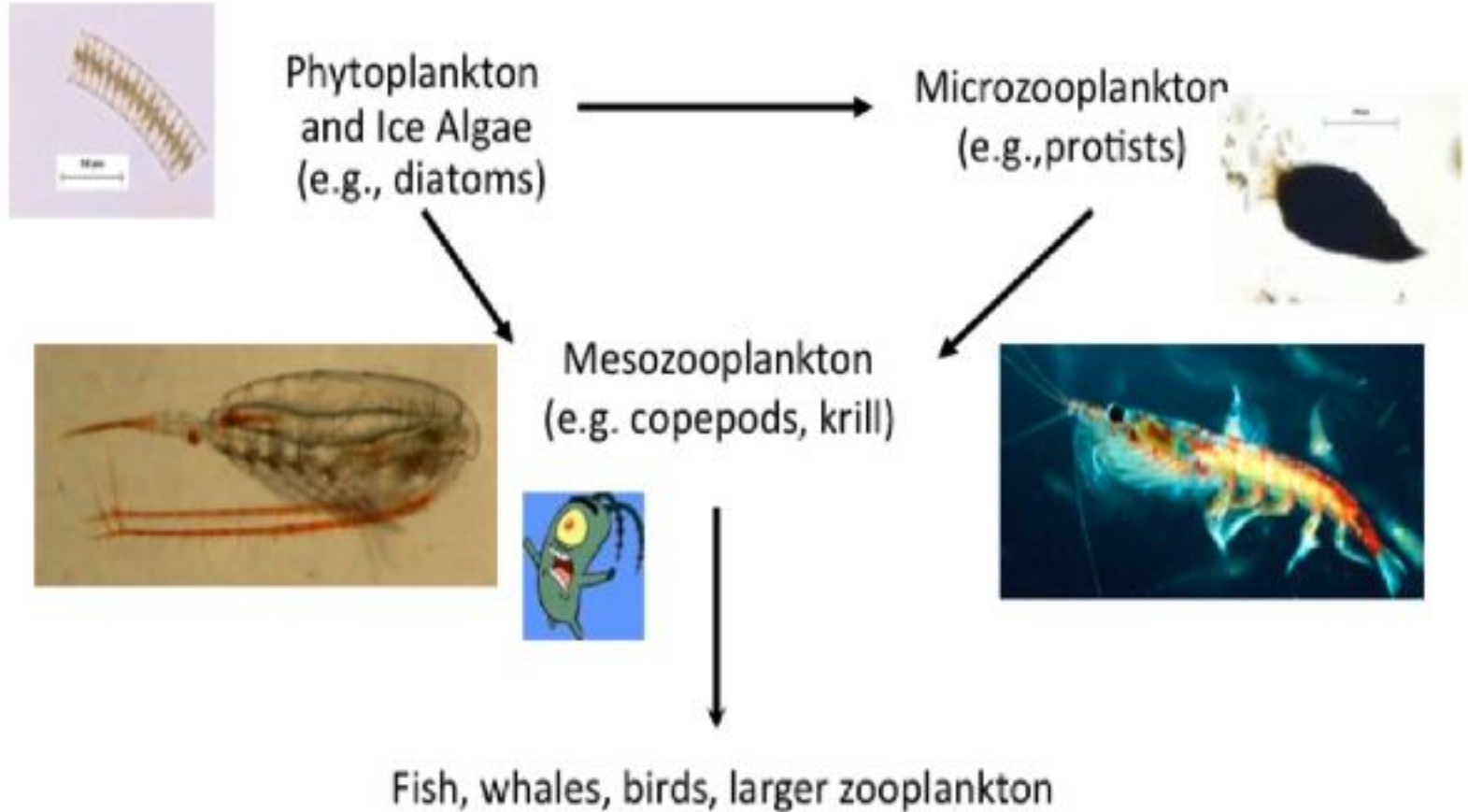
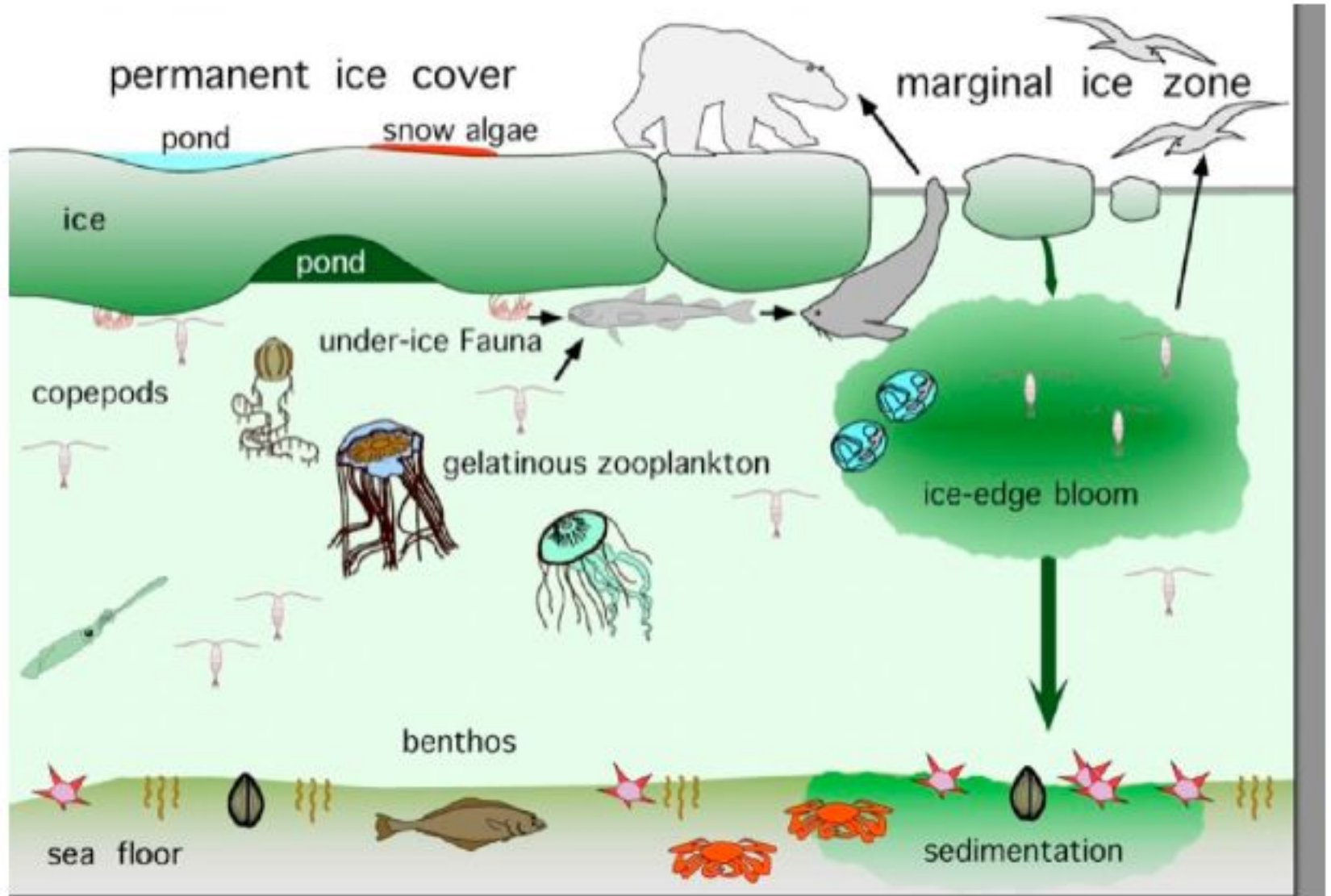


Photo courtesy of Celia Gelfman, University of Rhode Island

The Planktonic Food Web



Arctic Food Web



Courtesy of Katrin Iken, University of Alaska, Fairbanks

If you want to study the plankton you have to catch it...



<http://spongebob.nick.com/videos/play/plankton-song-music-video/>