

1. Essential Element

Activity/Lesson Title: Food Chains and Webs

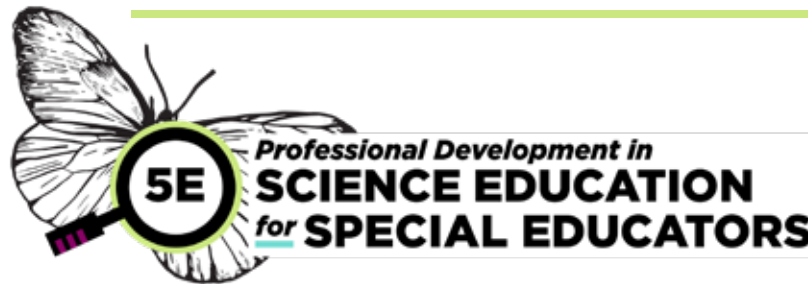
EE.MS.LS2-2: Use models of food chains/webs to identify producers and consumers in aquatic and terrestrial ecosystems.

Teacher: Stephanie

Grade Level: Middle (6-8)

Student: Phillip

Level: Initial



2. Science and Engineering Practice

SEP 6: Constructing Explanations and Designing Solutions

SEP description: Supports students as they use models to construct explanations about concepts involving food chains and webs.

3. Disciplinary Core Idea

Interdependent Relationships in Ecosystems

Core Idea description: Predatory interactions may reduce the number of organisms or eliminate whole populations of organisms. Mutually beneficial interactions, in contrast, may become so interdependent that each organism requires the other for survival. Although the species involved in these competitive, predatory, and mutually beneficial interactions vary across ecosystems, the patterns of interactions of organisms with their environments, both living and nonliving, are shared.

4. Crosscutting Concept

Patterns

Concept Description: Patterns can be used to identify cause and effect relationships.

5. Linkage Level Descriptors

Initial: Identify food that animals eat

Precursor: Classify animals based on what they eat (e.g., herbivore, omnivore, carnivore).

Target: Use models of food chains/webs to identify producers and consumers in aquatic and terrestrial ecosystems.

6. Student's Typical Accessibility Supports

- Books in PowerPoint
- Laminated printouts
- Plastic figurines
- Videos, photographs, textured diagrams
- Models, manipulatives, tactile representations

7. Student Prior Experiences, Prior Knowledge

- The student has an aquarium at home.
- The student loves Disney movies.
- The student loves a book about desert animals.
- The student loves to go to the park.
- The student loves the movie Finding Nemo.
- The student has prior knowledge of identifying details and simple models.
- The student has an interest in animals, particularly those that live in the ocean.

8. Phenomenon to Explore

Question: What do ocean animals eat?

9. Possible Alternative Conceptions

Some students may think (incorrectly) that

- Ecosystems contain only living things.
- An animal that is high on the food web preys on (or eats) all living things below it.
- Species live together in an ecosystem because they have compatible needs and behaviors.
- A change in the prey population has no effect on the predator.
- Ecosystems only exist in forests or on land.

10. UDL Options and Solutions to Potential Barriers

- Engagement with various resources, such as a book on PowerPoint and videos of the coral reef ecosystem in the ocean, which include scenes of animals eating both plants and other animals.
- Use a variety of formats (e.g., videos, photographs, textured diagrams) and materials (e.g., models, manipulatives, tactile representations).
- Use tactile models of animal/food relationships.
- Provide a data table (graphic organizer or T-chart) with rows and columns for food and animals.
- Have student complete with a peer buddy.

11. Engage

Think

- *How can I make sure to access students' prior learning?*
- *How can I use the CCC to connect everyday language with the scientific language of the phenomenon?*
- *How can I support student participation by scaffolding the SEP?*

Teacher Will

- Share images and show a video of sea anemones.
- Use core words and a video to ask students questions like, "Is a sea anemone an animal?" and "Do you think that a sea anemone needs to eat?"

Students Will

- Look at images and videos about sea anemones.
- Respond to questions about sea anemones and how they are animals that need food.

12. Explore

Think

- *What is difficult or inaccessible about the phenomenon, and how can I make it more accessible in the Explore phase?*
- *How can students collect data in a way that helps answer a scientific question?*
- *How can I encourage students' careful observation and asking good questions vs. looking for only the "right answer"?*

Teacher Will

- Assist students in learning that a sea anemone is an animal and that it eats food; ask students to choose which sea animal they want to learn more about.
- Assist in collecting evidence about what that animal eats using the internet, books, and videos.

Students Will

- Choose an ocean animal and investigate what the animal eats using books and videos.
- Record what their animal eats and what additional animals eat using a data table.

13. Explain

Think

- *How can I help students connect science topics, phenomena, data, and everyday experiences? How can I help my students differentiate everyday language from scientific language? What reasoning helps students see or explain the invisible?*

Teacher Will

- Help the student review data showing that each ocean animal eats food.
- Read a book with students reinforcing that all animals eat food "[Living Things Depend on One Another](#)".
- Assist students in creating a CER statement.

Students Will

- Complete a CER statement

Claim: Ocean animals eat food.

Evidence:

- » My data table shows that ocean animals eat food.
- » I read a book with my teacher and watched a video that shows that all animals eat food.

Reasoning: Animals need food to live. Ocean animals also need food to live.

14. Elaborate

Think

- *How can I help enrich or extend student ideas? Are there related science concepts that would support and extend student learning?*

Teacher Will

- Extend the lesson with a question like, "Why are some ocean animals eating plastic that they find in the water?" Locate resources that will help students answer the question (e.g., "[If You Don't Throw Your Garbage in the Trashcan, Where Does it Go?](#)").
- Investigate the food that farm animals or common pets eat.

Students Will

- Think about why ocean animals might eat plastic in the water.
- Use books and videos to answer questions posed by the teacher by linking what ocean animals eat to what they find in the water.

15. Evaluate

Think

- *What do I need to see or hear from my students that assures that they have learned the science content? What information must I gather to inform my teaching as I move through the lesson?*

Teacher Will

- Provide an exit ticket at the end of the lesson asking about the phenomenon.
- Use the student responses to inform the evaluation.
- Create a bingo game from student selected animals and have students cover the food for the animal shown.

Students Will

- Complete the exit ticket.
- Respond to questions posed by the teacher summarizing the investigation, what they did, and what they learned from it.
- Complete the table for animals and their food.
- Play a bingo game.