



Classroom Teacher Preparation

Life Science 5: Food Webs

Please use the following to prepare for the next SfS lesson.

Description:

This module teaches the basics of food webs. Students first construct a food web model for a simplified Yellowstone ecosystem. They then consider what would happen to the ecosystem if the food web were disrupted by the removal of a native species and/or the introduction of an invasive species.

Lesson Objectives – SWBAT (“Students Will Be Able To...”):

3rd-5th

- Develop a simple food web model of an ecosystem
- Use their food web to predict the outcome of a species addition or loss

Disciplinary Core Idea (DCI)

LS2. Ecosystems: Interactions, Energy, and Dynamics

- (3rd-5th) LS2.A: *Interdependent Relationships in Ecosystems* – The food of almost any animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants, while decomposers restore some materials back to the soil.
- (3rd-5th) LS2.B: *Cycles of Matter and Energy Transfer in Ecosystems* – Matter cycles between the air and soil and among organisms as they live and die.

Science & Engineering Practice (SEP)

Developing and using models

- (3rd-5th) Develop and/or use models to describe and/or predict phenomena.

Crosscutting Concept (CCC)

Systems and System Models

- (3rd-5th) A system can be described in terms of its components and their interactions

Preparation:

This lesson is an introduction to food webs, but students should be familiar with the terms **organisms** (living things) and **ecosystems** (community of organisms and their non-living environment).

Students should also be aware that we need **energy** to sustain life.

Room Set Up for Activities:

Students will work in small groups of 3-4 at their desks to put together a food web (8 groups maximum). No special preparation is necessary.

Safety:



Students will be working with pushpins - if this is too much for your students, they can easily do the activity without them.

Related Modules:

This lesson may be taught as part of a sequence or group of related modules on **Life Science**. Modules include:

Life Science 10: Population and Sustainability – This lesson introduces population-related concepts, focusing on those relating to human impact such as our exponential growth (through videos and demos) and the Tragedy of the Commons (through a fishing game).

Life Science 22: Photosynthesis – This lesson examines the process of photosynthesis that plants undergo to produce their own food through a modeling activity.

Life Science 8: Owls – The physical and behavioral adaptations that make owls excellent (nocturnal) predators are reviewed. Students then examine an owl pellet and identify the bones found within

For other module sequences and groups, look here: www.sciencefromscientists.org/sequences

Standards Covered:

Please click the following link to our website to review the standards covered by this lesson, listed by state: www.sciencefromscientists.org/standards/

Lessons are matched to both national NGSS and local state standards.

After Our Visit:

Our Classroom Post can be found on our website at sciencefromscientists.org/cohorts. Use the name of your school/cohort and password to log in.

To help Evaluate, check out our Open Response questions online at sciencefromscientists.org/open-response-questions. They are freely available for all of our lessons for current teachers. Use the password supplied by your instructor to log in.

We recommend: building a Soda Bottle Composter for an Extension activity after our visit. Directions can be found at <http://compost.css.cornell.edu/soda.html> or at <http://homebiology.blogspot.com/2009/06/soda-bottle-compost.html>.

Additional Resources:

- “Crash Course Kids: Fabulous Food Chains” (3:24): <https://www.youtube.com/watch?v=MUKs9o1s8h8>
- “Crash Course Kids: The Dirt on Decomposers” (3:18): <https://www.youtube.com/watch?v=uB61rfeeAsM>
- “How Wolves Change Rivers” (4:33): <https://www.youtube.com/watch?v=ysa5OBhXz-Q>