

Instructional Recipe

How Do Organisms Depend on Each Other and the Environment?

Second Grade, Science & Language Arts

Step 1 – Ask

Objectives:

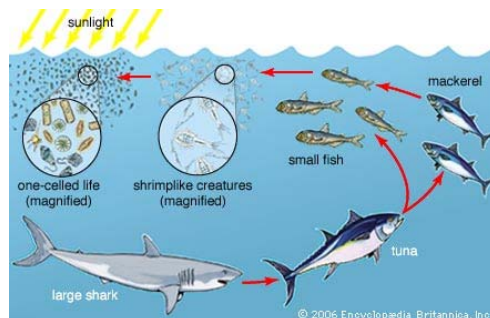
Students will identify examples of and compare the ways living organisms depend on each other and on their environment. Students will create a food chain.

Introduction:

Choice #1: Read Aileen Fisher's poem "The Story Goes On" (now a children's poetry book illustrated by Mique Moriuchi). This book presents the concept of a food chain in a simple but eloquent manner.

Choice #2: Watch and discuss a short "Quick Flick" on food chains (National Geographic Web site).

<http://magma.nationalgeographic.com/ngexplorer/0309/quickflicks/>



"food chain." Online Art. Encyclopædia Britannica Online School Edition. 8 Aug. 2008
 <<http://school.eb.com/elementary/art-86714>>.

Ask:

- ★ What is a food chain?
- ★ What is a producer?
- ★ What is a consumer?
- ★ How do living organisms in various ecosystems depend on each other and their environments for survival?

Vocabulary:

- ★ food chain
- ★ producer
- ★ consumer
- ★ predator
- ★ prey

Science TEKS:

(2.9) **Science concepts.** (B) compare and give examples of the ways living organisms depend on each other and on their environments.

English/Language Arts TEKS:

(25) **Research/Gathering Sources.** Students determine, locate, and explore the full range of relevant sources addressing a research question and systematically record the information they gather.

(28) **Listening and Speaking/Listening.** Students use comprehension skills to listen attentively to others in formal and informal settings. Students continue to apply earlier standards with greater complexity. Students are expected to: (A) listen attentively to speakers and ask relevant questions to clarify information;

(29) **Listening and Speaking/Speaking.** Students speak clearly and to the point, using the conventions of language. Students continue to apply earlier standards with greater complexity. Students are expected to share information and ideas that focus on the topic under discussion, speaking clearly at an appropriate pace, using the conventions of language.

Technology Application TEKS:

(5) **Information acquisition.** (A) Acquire information including text, audio, video, and graphics.
 (7) **Solving problems.** (A) Use software programs with audio, video, and graphics to enhance learning experiences

Step 2 – Investigate

K-12 Databases Resources:

Britannica Online—Read and discuss the following article with students.

- ★ "**food chain.**" Britannica Elementary Encyclopedia. 2008.
Encyclopædia Britannica Online School Edition. 8 Aug. 2008
<<http://school.eb.com/elementary/article?articleId=353141>>.

Searchasaurus—

Read the following article and help students identify the parts of the food chain described in the article. As a class, draw and label parts of the food chain on a class chart.

- ★ [Day and Night in the Desert](#). Click, Apr2004, Vol. 7 Issue 4, p23-27, 5p, 5c; Reading Level (Lexile): 590; (AN 12715023)

Additional Websites:

Fun with Food Webs (Harcourt)-

http://www.harcourtschool.com/activity/food/food_menu.html

Books:

Miscellaneous books on various types of animals

Step 3 – Create

Guided Research & Note Taking

Click on the topic “animals” in Searchasaurus or use the search function to locate articles on animals in which the students are interested. [For the culminating activity, it will be easier to start with predators (e.g., wolf or bear).] Read about what the animal eats (e.g., wolves eat squirrels). Next research what is eaten by that organism and so on until a food chain is determined. Students may use developmentally appropriate library books as well.

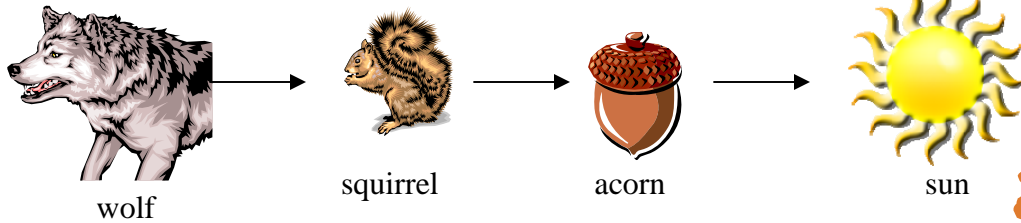
During the research process students will do a rough sketch of a food chain and label its various components.

- 🔗 Technology Link – If possible, use a projector and/or a Smart Board to project readings and demonstrate the search process.



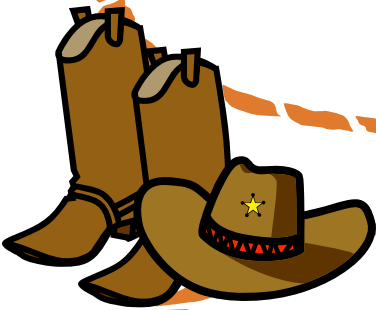
Step 4 – Discuss

- ★ Food Chain Diagram- Students will create, label, and present a food chain diagram.



Students can compare their individual food chains looking for areas in which they overlap and form food webs.

🔗 Technology Link – Students may use a graphic organizer program, such as Kidspiration or Kid Pix, to create their diagrams.



Step 5 – Reflect

Allow students to present their projects to the rest of the class. Use the following suggested rubric to assess the students' work. Make sure that the students are familiar with the rubric *before* they begin creating their project. They should refer to the rubric repeatedly to monitor their progress in creating their project.

🔗 Technology Link: You can also create your own rubric with your students at <http://rubistar.4teachers.org/index.php>.

Rubrics—

Food Chain Diagram

CATEGORY	4	3	2	1
Title	Title is informative, centered, and larger than other text.	Title is informative and larger than other text.	Title is informative and centered.	The title is incomplete and does not clearly indicate what is pictured.
Content	Features five or more pictures of elements in a food chain.	Features four pictures of elements in a food chain.	Features three pictures of elements in a food chain.	Features two or less pictures of elements in a food chain.
Labels	Every item that needs to be identified has a correct label. It is clear which label goes with which picture.	Almost all items (90%) that need to be identified have correct labels. It is clear which label goes with which picture.	Most items (75-89%) that need to be identified have correct labels. It is clear which label goes with which picture.	Less than 75% of the items that need to be identified have correct labels OR it is not clear which label goes with which item.

Sharing Food Chain Diagram

CATEGORY	4	3	2	1
Speaks Clearly	Speaks clearly and distinctly all (100-95%) the time, and mispronounces no words.	Speaks clearly and distinctly all (100-95%) the time, but mispronounces one word.	Speaks clearly and distinctly most (94-85%) of the time. Mispronounces no more than one word.	Often mumbles or can not be understood OR mispronounces more than one word.
Volume	Volume is loud enough to be heard by all audience members throughout the presentation.	Volume is loud enough to be heard by all audience members at least 90% of the time.	Volume is loud enough to be heard by all audience members at least 80% of the time.	Volume often too soft to be heard by all audience members.
Posture and Eye Contact	Stands up straight, looks relaxed and confident. Establishes eye contact with everyone in the room during the presentation.	Stands up straight and establishes eye contact with everyone in the room during the presentation.	Sometimes stands up straight and establishes eye contact.	Slouches and/or does not look at people during the presentation.
Listens to Other Presentations	Listens intently. Does not make distracting noises or movements.	Listens intently but has one distracting noise or movement.	Sometimes does not appear to be listening but is not distracting.	Sometimes does not appear to be listening and has distracting noises or movements.