SCIENCE
Science and the Environment
4th Grade

FOOD CHAINS

Overview:

All organisms, or living things, depend on other organisms for nutrients. The movement of nutrients through an environment is visualized through a food chain.

The students will work in independently or in groups while constructing food chains. The students will construct models of what they have learned and make comparisons.

This hands-on activity incorporates observing, classifying, predicting, sequencing, formulating models, and drawing conclusions.

Duration:

The lesson will take one to two class periods (45 min. to an hour). However, the teacher may opt to extend the lesson for enrichment or independent practice.

Benchmarks:

SI-E-A1	Asking appropriate questions about organisms and events in the environment
SI-E-A3	Communicating that observations are made with one's senses
SI-E-A6	Communicating observations and experiments in oral and written forms
SE-E-A2	Understanding the components of a food chain

Teacher Preparation:

1. Utilize enclosed Vocabulary list as a guide for student notes in their journals or science notebooks.
2. Acquire bulletin board paper for KWL Activity.
3. Acquire large index cards for food chain group activity.
4. Prepare copies of the Food Chain Activity sheets for individual assignment.
5. Prepare copies of Word Chop and Food Cycle instructional sheets.

Food Chain Vocabulary

*All organisms are either **PRODUCERS**, **CONSUMERS**, or **DECOMPOSERS**.

Producers: all plants (grass, algae, crops,)
*need sunlight
*make their own food

Consumers: eat other organisms

Herbivores: eat only plants (rabbits, elephants, deer, mice, grasshoppers, sheep, cows)

Carnivores: eat only meat (tigers, owls, foxes, snakes, frogs)

Omnivores: eat both plants and animals (bears, turtles, squirrels, Humans)

Decomposers: decay materials in the soil. (bacteria, fungi, earthworms)

Food Chain: diagram that shows how food moves through a community.

Predator: Animals that do the hunting.

Prey: Animals that are hunted.

Food Web: Arrangement of many food chains put together.

Sun: All living things get their energy from the sun. Base of all food chains.

FOOD CHAIN GROUP GAME

Directions: The teacher will pass out the following sequence of words, which will be written on large color coded index cards. Selected students will go up to the board and put the cards in the correct order of the food chain.

***These words will be written on large index cards. Each group of food chain words will be written in a different color for student convenience.**

Food Chain #1 (Red)

Sun grass grasshopper frog fish human

Food Chain #2 (Blue)

Sun tree leaves elephant

Food Chain #3 (Green)

Sun grass mice snake hawk

Food Chain #4 (Black)

Sun carrots rabbits foxes

Materials

Large index cards
Markers
Glue
Scissors
Hands – On Instructional Sheets
Hangers
Yarn
Construction paper

Opener

1. The teacher will begin the lesson by completing the KWL brainstorming activity.

2. Using border paper, the teacher will make three columns as noted on the KWL activity sheet.

3. In an open-ended discussion, the teacher will record student feedback in the K and W columns. The L column will be filled in at the end of the lesson.

Body of the Lesson

1. The teacher will complete the KWL brainstorming activity.
2. The teacher will follow with a brief discussion, and the students will write their notes from the vocabulary list in their notebooks or journal.

3. The students will then participate in the Food Chain Group Game.

4. The students will now complete the Food Cycle cut-out exercise.

5. The students will complete the Hands-on Food Chain exercise by creating mobiles, or mini-posters on construction paper.

6. The students will take a nature hike around the school and observe various participants in any food chain.

Closing

The students will reflect upon what they have learned and share their knowledge through journal writing. The teacher will record individual responses in the "L" column of the on-going KWL activity.

Extensions

1. Have students complete the Food Chain Word Split activity.

2. Create a spelling list utilizing the Food Chain Vocabulary.

3. Have students create a "live food chain" by using plastic animals, toys, or play dough.

4. Allow students to work in groups while researching food chains that may exist in other ecosystems (desert, grasslands, aquatic etc.).

Assessment

I. Multiple Choice

Directions: Choose the correct answer for every statement.

1. All producers are _____.
   a. plants b. animals c. aquatic

2. The _____ is the basis of all food chains.
   a. plants b. grass c. sun

3. A _____ shows how food moves through a community.
   a. food web b. food chain c. picture

4. Earthworms and bacteria are examples of _____.
   a. producers b. decomposers c. consumers

5. Herbivores eat only _____.
   a. meat b. plants c. candy

6. Meat eating animals are called _____.
   a. carnivores b. producers c. decomposers

II. Short Answer

Directions: Answer each question in complete sentences.

1. Why are food chains never – ending?

2. What do food chains and food webs tell us about life?

3. What do the arrows on food chains mean?

4. What food chains did you observe on the nature walk?

5. Why do you think it is important to learn about food chains?

Answer Key: Assessment (page 44)

I. Multiple Choice

1. a. plants
2. c. sun
3. b. food chain
4. b. decomposers
5. b. plants
6. a. carnivores

II. Short Answer

1. Food chains never end because all organisms are continuously eating and reproducing.
2. Food chains and food webs illustrate who eats whom in a given community. Food chains also represent the dependence of organisms on other organisms for food in order to survive. It is a continuous cycle that sustains living things.
3. The arrows indicate the direction of the flow of energy with the arrow pointing to the next organism to receive food.
4. Accept responses that were observed on the nature walk.
5. Food chains represent how organisms eat other organisms for survival. (Accept other reasonable answers)

What I Already Know **K**	What I Want to Know **W**	What I Have Learned **L**

Food Chain Activity

Directions: Cut out the following organisms and glue them in the correct order to form a food chain on your paper. Draw the arrows showing the correct sequence of organisms.

FOOD CHAIN # 1

Food Chain Activity

Directions: Cut out the following organisms and glue them in the correct order to form a food chain on your paper. Draw the arrows showing the correct sequence of organisms.

FOOD CHAIN # 2

Food Chain Activity

Directions: Cut out the following organisms and glue them in the correct order to form a food chain on your paper. Draw the arrows showing the correct sequence of organisms.

FOOD CHAIN # 3