

Weekly Lessons/Overview and Goals: Students will be able to identify the difference between producers and consumers.

TEKS: 4.9A & B

4.9 Organisms and environments. The student knows and understands that living organisms within an ecosystem interact with one another and with their environment. The student is expected to:

4.9A investigate that most producers need sunlight, water, and carbon dioxide to make their own food, while consumers are dependent on other organisms for food

4.9B describe the flow of energy through food webs, beginning with the Sun, and predict how changes in the ecosystem affect the food web

TEKS ABOVE AND BELOW

Fifth Grade:

5.9A observe the way organisms live and survive in their ecosystem by interacting with the living and non- living components (R)

5.9B describe the flow of energy within a food web, including the roles of the Sun, producers, consumers, and decomposers ®

Third Grade:

3.9A observe and describe the physical characteristics of environments and how they support populations and communities of plants and animals within an ecosystem (S)

3.9B identify and describe the flow of energy in a food chain and predict how changes in a food chain affect the ecosystem such as removal of frogs from a pond or bees from a field

Key Vocabulary

TEK 4.9A	TEK 4.9B	
producer	food web	<i>herbivore</i>
sunlight	food chain	<i>carnivore</i>
consumer	ecosystem	<i>omnivore</i>
carbon dioxide	flow	<i>predator</i>
organism	<i>perish</i>	<i>survive</i>
oxygen	<i>thrive</i>	prey
water / agua		source

Questions for students:

What are producers, and what do they need to make their food?

What are consumers, and where do they get their food?

Where does the energy that starts a food chain begin?

What is a food web?

Where does the energy that starts a food web begin?

How do changes in an ecosystem affect a food web?

Lesson Plans for Week



Key Concepts

Producers need sunlight, water, and carbon dioxide to produce their own food. Consumers depend on plants or other organisms for food.

The Sun provides energy that flows through food chains and webs. Energy that moves through a food web originally comes from the Sun.

We can predict how changes in an ecosystem can affect the flow of energy in a food web. Changes to an ecosystem can cause animals to leave and some animals and plants to perish, which can have an impact on the flow of energy in a food web.

Monday & Tuesday: Producers vs Consumers

Essential Question: What are the similarities and differences between producers and consumer?

Engage

Is it a Consumer? #14, p. 85-90 - Page Keeley

Explore

Take students outside to area in the school yard where an ecosystem can be observed (can use a hula hoop or square yard of string to mark an area for observation). Have students list the living and nonliving elements of the ecosystem. Students can also take pictures for later reference

(from STEMscopes Starters! Food Webs on the Brain)

Have your students share the different living and nonliving elements of an ecosystem. They can either write their ideas on index cards, or at the front of the room someone can record the answers on the board. When everyone has had a chance to contribute, look at the organisms on the board as a class and make connections by drawing lines and explaining the connections. Make sure the Sun is on the board, as well as some plants.

Explain From STEMSCOPES

1. modify game to not include the explanation of Producer/Consumer/ omnivore, etc. prior to playing; make cards to provide students that have the animals, plants, etc. on them as in STEMscopes but without all of the definitions and explanations;

**Play one round of game - go to Explain regarding Producers and Consumers

(Wait to play second round of game in 2nd 5E Lesson that will address changes in ecosystems)

Notebook Entries:

1. List of Living and Non-Living Elements (during Explain students label with C or P for Consumers or Producers)
2. Food Chain represented in game labeled with Prod and Cons (Herb, Omni, Carni)
 - o [RRISD Student Sample](#) - Prairies and Lakes food web
 - o [RRISD Student Sample](#) - Hill Country food web

Elaborate

Food Chain Powerpoint:

<https://drive.google.com/file/d/0B8sYCgTtYAgdcGVWV2VvMXpKQU5qMHhLT2FZWVdqaERjb1E0/view>

- Where does an organism get its energy?

An organism gets its energy from the food it eats, which leads back to the Sun.

- Does a producer always get its energy from the same source? Why or why not?

Yes. Plants are the only organisms that are producers of their own food energy, and they all get their energy from the sun through photosynthesis.

- Does a consumer always get its energy from the same food source? Why or why not.

No. Most animals eat more than one specific type of thing. Herbivores will usually eat several types of plants and their parts. Carnivores may eat different animals, which would in turn have gotten their energy from the various things they ate. Omnivores will sometimes eat plants and sometimes eat animals for food.

Science Terms:

producer
consumer
food chain
food web
ecosystem
predator
prey

Have groups choose or teacher assign an ecosystem from the website below to present and explain to the class.

Website: <http://pbskids.org/eekoworld/index.html?load=environment>

Provide students with these questions prior to viewing -

Questions:

- What is a producer? A consumer?
- Where do producers get their energy? Consumers?
- Describe the flow of energy in an ecosystem.
- What is the source of all energy in food webs?

Sentence Stems:

In a food chain, ____.

If ____, then ____.

Before _____. But after _____.

After ____, the environment _____.

A ____ benefits ____, but it harms _____.

I think this because _____.

I think ____ will cause ____, because _____.

Evaluate Writing in Science -- model and then have students write in their journals

Energy in an ecosystem begins with _____. Many organisms in an ecosystem _____. In a food web, energy _____. Producers _____, but consumers _____. However, all organisms _____.

Wednesday: Producers and Consumers

Essential Question: What are the similarities and differences between producers and consumer?

Engage Story Time! Suggest- The Great Kapok Tree

Explore

- Where does an organism get its energy?
 - An organism gets its energy from the food it eats, which leads back to the Sun.

- Does a producer always get its energy from the same source? Why or why not?
 - Yes. Plants are the only organisms that are producers of their own food energy, and they all get their energy from the sun through photosynthesis.
- Does a consumer always get its energy from the same food source? Why or why not.
 - No. Most animals eat more than one specific type of thing. Herbivores will usually eat several types of plants and their parts. Carnivores may eat different animals, which would in turn have gotten their energy from the various things they ate. Omnivores will sometimes eat plants and sometimes eat animals for food.

Have groups choose or teacher assign an ecosystem from the website below to present and explain to the class.

Website: [StudyJams: Ecosystems](#) (free)

Provide students with these questions prior to viewing -

Questions:

- What is a producer? A consumer?
- Where do producers get their energy? Consumers?
- Describe the flow of energy in an ecosystem.
- What is the source of all energy in food webs?

Explain Students will help build the word wall

Elaborate

Revisit questions from **Explain** above

Evaluate Quiz Day

[Formative Quiz #1, KEY](#)

Thursday: Exploring food webs

Essential Question: How does the Sun support organisms within an ecosystem? How do changes in an ecosystem affect a food web?

Engage Today we will start to have students thinking about the upcoming STEAM challenge. We don't want to give too much away, but we do want them to begin thinking about how human impact affects ecosystems. *Possible questions: How does groundwater affect an ecosystem? How do humans positively or negatively affect ecosystems?*

Explore Review with students

PowerPoint Presentation - [Local Disasters and ways they affect Texas Ecosystems](#)

Explain, Elaborate & Evaluate -- [RRISD LESSON](#)

Friday:

Essential Question: How does the Sun support organisms within an ecosystem? How do changes in an ecosystem affect a food web?

Engage Study jams-Photosynthesis: <http://studyjams.scholastic.com/studyjams/jams/science/plants/photosynthesis.htm>

Explore How do plants use the sun to make their own food? Pair and Share answers. Students should know that most producers need sunlight, water, and carbon dioxide to make their own food. The process is called Photosynthesis. Energy from the sun is converted into sugar (food) and oxygen.

Explain Share examples of energy flow through various ecosystems. Students may work in groups draw a food chain for their chosen ecosystem. All should start with the Sun. Check for understanding of arrows pointed the correct direction of energy flow. Let other groups view and leave post-its suggesting improvements such as adding decomposer or missing producers or consumers.

Elaborate Laptops may be used for researching ecosystems- Library Resources.

Evaluate

Differentiation: A variety of activities (application, concrete, and kinesthetic) will be incorporated into both days to engage all learners. Kagan structures will be introduced the first week of school.