

5th Grade Activity: Food Chain

Make a food chain while learning about the different trophic levels found in a food chain.

(NGSS Disciplinary Core Ideas 5-LS2-1; Ecosystems: Interactions, Energy, and Dynamics)

Pre-Activity Questions

- What is a food chain? What is at the start of the food chain?
- What is an herbivore, omnivore, and carnivore?
 - What is a producer and what is a consumer?
- Why do organisms need food?

Activity

- A food chain is a series of organisms dependent upon one another as the next source of food. Each level of the food chain is called a **TROPHIC LEVEL** and obtains its energy (food) from the level before it.
 - **SUN:** The sun is at that start of every and any food chain, because it provides the energy for the producer.
 - **PRODUCER:** The producer is an organism that obtains energy from the sun and uses that energy to produce its own food. These organisms are usually plants (ex: an oak tree).
 - **PRIMARY CONSUMER:** The primary consumer is an organism that obtains its energy from consuming plants. It is an herbivorous animal (ex: a squirrel).
 - **SECONDARY CONSUMER:** This organism obtains its energy from eating primary consumers. It is usually an omnivore (raccoon) or small carnivore (ex: gopher snake).
 - **TERTIARY CONSUMER:** Organisms that are part of this trophic level eat both primary and secondary consumers. They are usually apex predators: carnivores mostly (ex: red-tailed hawk), but large omnivores as well (ex: brown bear).
 - **DECOMPOSER:** All organisms die. When they do, decomposers obtain the energy they need to survive by breaking down and consuming the dead organisms. It also helps return nutrients to the soil, making it rich for producers to grow. Decomposers may be herbivorous (ex: millipede), carnivorous (ex: dermestid beetles), or omnivorous (ex: bacteria). They can also be a plant, fungus, animal or bacteria!

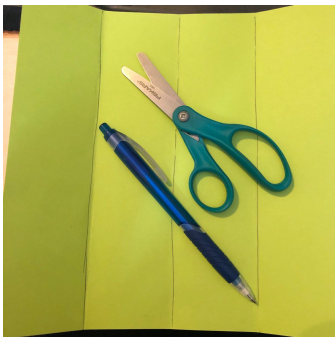
Create your own food chain!

Materials

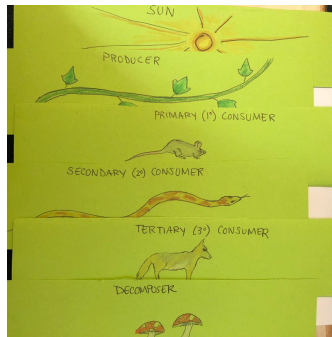
- 2 pieces of paper (construction paper preferred)
- Scissors
- Ruler
- Markers or crayons
- Stapler or tape

Steps

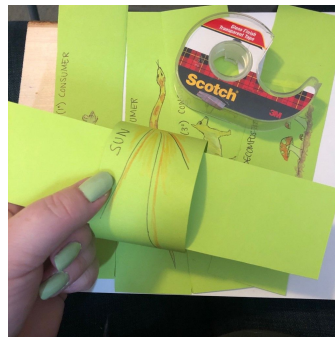
1. Orient your **paper** so that its longest side is running top to bottom (portrait style).
2. Use a **marker** to make 3 lines that run top to bottom. If you want the lines straight and evenly spaced, use a **ruler** to help you make the lines. Do this on the second piece of paper as well.
3. Take your **scissors** and cut along the lines. This should create 8 long strips of paper. You will only need 6 (use the last two either in the post-activity challenge or for bookmarks).
4. Each strip will be labeled as one of the trophic levels.
5. Decorate each strip of paper according to its label (ex: draw a sun on the strip labeled sun. You can keep it simple, or put a sunny design over the whole paper).
 - a. Please choose 1 organism per strip when decorating each one (ex: black-tailed deer on the primary consumer strip).
6. Take the Sun strip and connect the two shorter ends together. Use **tape or a stapler** to secure the ends. You have made one link in the food chain!
 - a. Make sure the decoration and label are facing out when you make the link!
7. Next, take the Producer strip and turn it upside down. Put it through the Sun link, and then connect the two short ends together, securing with tape or a stapler.
 - a. Repeat step 7 with the Primary Consumer strip going through the new Producer link.
 - b. Repeat 3x more, with the Secondary Consumer strip, Tertiary Consumer strip and the Decomposer strip. Make sure that it is going through the most recently made link, so that the trophic levels are in order.



Make 3 lines top to bottom and cut along lines



Label and decorate each strip with a trophic level



Turn Producer strip upside down, and feed through Sun link



Connect short ends of strip, continue with other strips



Post-Activity Questions and Activities

- Challenge: make another food chain with different animals and plants and then add it to your existing chain! You can use the 2 strips leftover from the craft.
- Which link in the chain do you think has the most energy (food)?
- Which link in the chain do you think is the most important?
- What would happen if one link in the food chain disappeared? How does that disappearance affect each link in your chain?
- What is a trophic cascade?
- What is a keystone species?
 - Which species in this [video](#) is a keystone species?
 - Check out these Oakland Zoo animals that are keystone species in their habitats!
 - [Gray Wolf](#)
 - [Desert Tortoise](#)
 - [African Elephant](#)
 - [Brown Bear](#)
- Make an argument for an animal being a keystone species that is not listed above, or featured in the video.