raft RESOURCE AREA FOR TEACHING

STEAM SCIENCE TECHNOLOGY ENGINEERING ARTS MATHEMATICS

LEARNING ACTIVITY

Physical Food Web

Use Yarn to See the Flow of Energy

Students explore social distancing and energy flow in between organisms in ecosystems this activity simple, science-rich activity.

Activity Challenge

Make a socially-distanced food web model with 3-8 different "plants" and "animals" using yarn to connect each organism.

Preparation

1. Have students choose a producer, primary consumer, secondary consumer, and decomposer.
2. Draw and color the sun, producer, primary consumer, secondary consumer, and decomposer on paper (see science on next page).
3. Write three characteristics in each drawing.

To Do

1. The *sun* tells the group to form a shape or arrangement (circle or triangle may be easiest; maintain social distance of 6 feet apart).
2. Any *Producer* calls out for the sun's energy. The *sun* throws the ball of yarn to a calling producer.
3. Any *primary consumer* calls out to the *producer*. That producer throws the ball of yarn to a calling primary consumer.
4. Any *secondary consumer* hears the call of the primary consumer. The primary consumer throws the yarn to a secondary consumer.
5. One or more of the organisms is nominated to be decomposed. The decomposing organism(s) throws the yarn to a decomposer.
6. Attempt to toss the yarn to every person in the group.

Observations

Note how many tosses you were able to make on your first attempt. What is the most amount of connections can you make from one producer? Note ways that all people in the group have the yarn in the STEAM journal/notebook.

Extensions

- Add constraints to increase the difficultly. Example: Have the group form geometric shapes or random arrangements.
- Increase the number of players each round and/or include animals from different environments (forest, ocean, river, desert).

The Science behind the Activity

Food webs describe the flow of energy as it is consumed and used by different plants, animals, fungi, and bacteria. They act as maps that show the way energy moves from the sun to plants, to insects, to rabbits, to wolves, to people and then to the earth (soil). Plants can produce their own energy, in the form of stored sugars, using complex carbon compounds and sunlight. Therefore, they

Materials Needed

- At least 3 participants
- Yarn or String
- STEAM Journal

Grade Range

3-5
6-8

Topics/Skills

Science: Food webs, Energy Flow in Organisms, Energy Transfer in Ecosystems

Learning Standards

NGSS: Life Science

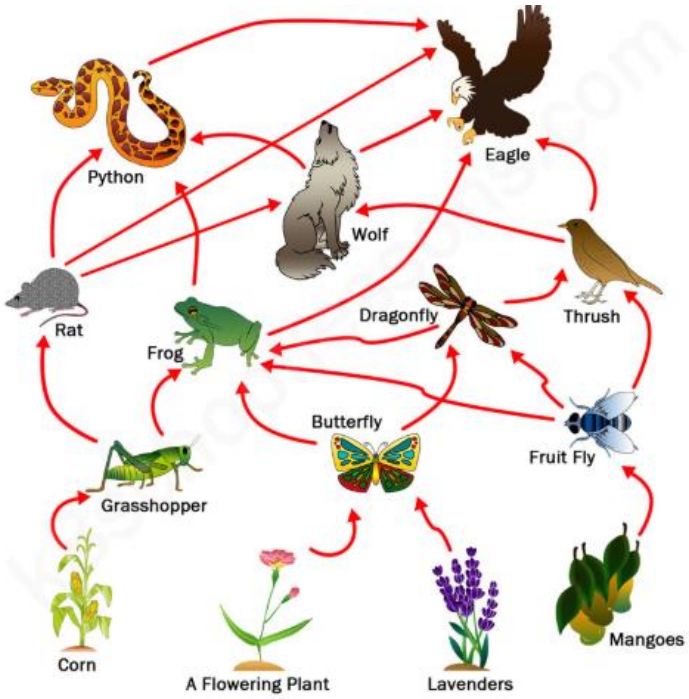
Duration

10 minutes

Prep Time

5 minutes

are called **producers** or **autotrophs**. A **primary consumer** will eat plants (producers), and **secondary consumer** eat primary consumers for energy. When plants and animals die, **decomposers** consume (breakdown) the dead material and acquire the stored energy in a way that produces enriched earth soil by releasing nutrients that promote the growth of more plants. No matter which **niche** (role or position) an organism has in an ecosystem, food webs demonstrate that all energy passed between organisms ultimately comes from the Sun.



The red arrows are yarn and the organisms are students in a socially-distanced arrangement.