

Lesson Topic: Competition for Resources in Ecosystems

Objective:

Students will be able to:

1. Identify competition for resources within an ecosystem.
2. Role play animals in an ecosystem to compete for resources.
3. Display their knowledge of competition through a perspective-taking written explanation.

Time Required: 80 minutes

Materials Needed:

- [Competition Video](https://www.youtube.com/watch?v=L24Kp72V67g): <https://www.youtube.com/watch?v=L24Kp72V67g>
- Teacher computer with internet access
- Projector/Smartboard
- 1 computer/laptop/iPad per student with internet access
- Copy Competition for Resources in Ecosystems handout (1 per student)
- Competition Activity Materials
 - 3 Boxes of Fruit Loops (amount depends on class size)
 - Ziplock baggies
 - Tape
 - Marker

Teacher Preparation:

- Assign a Legends of Learning Instructional [Quick Play](#) playlist for the day(s) you will be teaching the lesson.
 - Instructional - Middle School - Competition for Resources in Ecosystems
- Scatter Fruit Loops throughout a large marked off area outside (If going outside is not possible, you could scatter them throughout the classroom, a gym, or any other dedicated area).
- Write the following words on the board:
 - Deer - herbivore
 - Rabbit - herbivore
 - Elk - herbivore
 - Fox - omnivore
 - Turkey buzzard - scavenger

Engage (5 minutes):

1. Show students the [Competition Video](#).
2. After the video, ask students “What are some things that animals compete for?”
 - a. Answer: food, shelter, mates, etc.
3. Tell students “Today we are going to talk about the competition for resources found within ecosystems.”

Explore (20 minutes):

1. Have your students [sign in to Legends of Learning](#). Instruct students to complete the

Instructional playlist.

2. Assist students as needed during game play, pause playlist if you need to address content or questions to entire class.

Explain (15 minutes):

1. Tell students, "Within every ecosystem, there are only so many resources for plants and animals to use. This means that species have to compete for resources as well as compete with other species that have similar needs."
2. Ask students, "What are some resources that organisms may compete for?"
 - a. Answers: air, water, food, and space
3. Make a list on the board of resources students identify.
4. Explain to students, "Remember that there are other things that organisms have to compete for such as a mate, seed dispersal, etc, but today we are just going to talk about competition for resources."
5. Ask students, "Are animals the only organisms that compete for resources?"
 - a. Answer: No, plants have to compete for resources as well and even unicellular organisms have to compete for resources that they need.
6. Ask students, "How are organisms affected by competition?"
 - a. Answer: the strongest and fastest will get the resources and survive, the others do not.
7. Ask students, "What happens to the organisms that do not get access to the resources they need?"
 - a. Answer: they will eventually die away, adapt (eat something else), or move to a different location.

Elaborate (25 minutes):

1. Briefly review the following vocabulary words aloud
 - a. Herbivore - only eats plants
 - b. Omnivore - eats plants and animals
 - c. Carnivore - only eats meat
 - d. Scavenger - a carnivore that eats dead animals
2. On the board (write prior to class) have students choose which animal they would like to be:
 - a. Deer - herbivore
 - b. Rabbit - herbivore
 - c. Elk - herbivore
 - d. Fox - omnivore
 - e. Turkey buzzard - scavenger
3. Tell students to write the name of the animal they want to be on a piece of tape and put it on their shirt.
4. Tell students "There is a marked off area that is full of fruit loops. The fruit loops represent your food."
5. Give students a baggie to use to collect their food. Tell students "Use this baggie to collect your food."
6. Give students plenty of time to collect food, then return to the classroom.
7. Have students separate the food they collected by color.
8. Write the following on the board (Do NOT write this on the board until after they

- collected the food).
- a. Green = Plants
 - b. Red = Predator meat
 - c. Orange = Scavenger meat
 - d. Blue = Water
 - e. Yellow = Shelter
 - f. Purple = Pollution
9. Tell students
 - a. "All elk, deer, and rabbits need to put the red and orange loops back into your baggies. Being herbivores, you have no use for meat.
 - b. All buzzards need to put the green and red loops back into your baggies. Being a scavenger, you have no use for predator meat or plants."
 10. Tell students, "Now, this is where things get interesting! For every purple loop you have, take away 1 blue loop or 1 food source loop. Pollution contaminates water and food."
 - a. Any students who no longer have anymore loops can stand in the corner or off to the sides, representing the animals that have moved on, or sadly died away. They should take their baggies with them.
 11. Tell students "For the next round, you must have 5 waters, 5 food sources, and 5 shelters. If not, sadly, move to the perimeter of the room and take your baggies with you."
 - a. Have the remaining students place their 5 waters, 5 food sources, and 5 shelters back into their baggies.
 12. Tell students "For those still surviving, you now need 4 waters, 4 food sources, and 4 shelters. If you do not have enough resources, please move to the perimeter of the room and take your baggies with you."
 - a. Any buzzards can find someone next to them who has passed on and scavenge 5 food sources (orange fruit loops) from them because they are scavengers they eat the meat of dead animals. Buzzards will still need water and shelter loops to continue on."
 13. Continue these kind of scenarios until there is only one animal standing.
 14. Have a discussion about how the game played out.
 15. Ask students "How did this game illustrate competition in the wild?"
 - a. Answer: the animals all lived in the same ecosystem and had to compete for the resources (fruit loops). Certain animals were able to adapt throughout the game better than others (fox being an omnivore, scavengers eating the dead animals, etc).

Activity Adapted from: <https://tinyurl.com/tana5w9>

Evaluate (15 minutes):

1. Students complete the writing activity on the Competition for Resources in Ecosystems handout. Tell students, "In 7-10 sentences, explain what happened to you in the activity from the perspective of the animal you chose."
 - a. For example, if you chose to be a buzzard in the activity, write the paragraph as if you ARE a buzzard in an ecosystem.
 - b. The fruit loops weren't fruit loops. In your paragraph, talk about the loops as if

they were really the resources they represented.”

2. Provide at least 10 minutes for students to draft their paragraph.
3. If time allows, let students share their writing.

Additional Lesson Strategies:

- To use Legends for additional instruction, create a [custom playlist](#) with an [instructional game](#) and pre and post [assessment](#).
- To use Legends for a quick formative assessment, create a 5-question [assessment](#) in a [playlist](#).
- To use Legends for a student-directed experience, create a [targeted freeplay](#) playlist.
- Encourage students to play on their own at home in [Legends of Learning: Awakening](#) for a student-driven experience including avatars, battling, and quests all centered around topics they are covering in class.

