



Tennessee Aquarium Science Streams

Presented by



Unlikely Friends and Foes

Video Focus Question: What are the relationships between different species and how do those relationships impact their survival?

Length of video: 7 minutes 18 seconds

Science Standards

TN 6.LS2.2 Determine the impact of competitive, symbiotic, and predatory interactions in an ecosystem.

NGSS MS-LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. *
** This video contributes to the performance expectation by helping students develop an understanding of LS2.A: Interdependent Relationships in Ecosystems.*

Main Learning Goal: There are different kinds of relationships between living things that live in the same ecosystem, which can impact their ability to survive.

Science Content Storyline

There are different kinds of relationships between living things in nature. Predator-prey relationships or relationships where animals compete for food are common. However, there are different kinds of symbiotic relationships that affect how well species can survive in their ecosystems.

Ideal Student Response to Focus Question: There are many different kinds of relationships between living things that live in the same ecosystem. Living things can have a predator-prey relationship where one eats the other, or they can compete with one another for food, water, shelter, or space, which makes it harder for them to find enough resources to live. They can also have symbiotic relationships where both organisms benefit (mutualism), one living thing benefits and the other is not helped or harmed (commensalism), or one living thing benefits and the other is harmed (parasitism). Each of these can affect how well each animal can survive in its ecosystem.

Preparation

In Advance

- Preview the video.
- Determine if you would like students to draw an ecosystem and the relationships in it and, if so, which resources and materials you will provide.

Materials

Teacher

- None

Student

- Resources about ecosystems and the animals that live there
- Paper and pencil or pen
- Drawing materials

Key Activities and Reflection

Timestamp	Science Content Outline	Guidance to Support Students
0:23	Introduction	<p>Have students watch the introduction. Consider pausing the video at timestamp 0:33 to allow students to orient themselves to the scene and find any animals they can see. Continue playing the video. Pause the video at 0:46 and ask students what kinds of relationships there might be between the ducks and turtles they saw in the exhibit. Then ask whether they think animals living in nature might have the same kinds of relationships or different ones. Accept any ideas at this point.</p>
0:47	Some living things have predator-prey relationships	<p>Allow students to watch the video through timestamp 1:17. The video gives two examples of predator-prey relationships. Ask students to list other predator-prey relationships that they know. If you have taught food webs already, they will likely be able to list quite a few examples. You may need to encourage students to think broadly. Sometimes, students only think of predators as animals that have large teeth, such as lions or wolves. If they seem to list a lot of animals that fit that description, remind them of the frog and the fly. Make sure they understand that any time an animal eats another, it represents a predator-prey relationship.</p>
1:18	Animals can have competitive relationships	<p>Play the video for students through timestamp 2:07. Have students pair up and describe the information they saw in this part of the video. They should be able to describe that another type of relationship is competitive. Living things compete for food, water, shelter, and space but only when they live in the same ecosystem. If you feel like you need to reinforce this point, you can share a few examples of competitive relationships and a few examples where animals from different habitats eat similar food.</p>
2:08	Animals can have symbiotic relationships	<p>Symbiotic relationships are another type of relationship between living things. Show students the video to timestamp 4:03. Ask them to take notes about the three different kinds of symbiotic relationships, being sure to indicate which organisms benefit, are harmed, or neither. After you pause the video, hold a class discussion about mutualism, commensalism, and parasitism to ensure that students understand the differences. Reinforce that each of these are types of symbiosis (“living together”) but they differ in whether the organisms benefit, are harmed, or neither.</p>

4:03	Ecological relationships in nature	<p>As students watch the video up to timestamp 5:27, have them listen to the brief description of each clip, then write down what happens with each organism and type of relationship they think the clip shows. You may wish to play this clip a couple of times so they can listen on the first time through and then write their ideas during the second viewing.</p> <p>At timestamp 5:27, the educator describes the relationship for each of the video clips. Ask students to compare what they thought with the ideas the educator shares. Then hold a class discussion about how these relationships might impact how well an animal can survive.</p>
6:08	Relationships in ecosystems	<p>Play the video through timestamp 6:42. Provide resources or have students do research about an ecosystem. Then have them draw an ecosystem showing at least three different types of relationships. Students can work individually or in small groups then share their ideas once they have finished.</p>
6:43	Conclusion	<p>After showing students the conclusion to the video, encourage them to watch for relationships between living things in nature. We often think of predator-prey relationships but have them try to find other types of relationships that living things have with each other.</p>

Extension Activities

- Each of the videos in the Science Streams series has an introduction by people in different departments at the Aquarium. This offers an opportunity to talk about the many different types of jobs it takes to run an aquarium.
- Have students do more research about the impacts of different types of relationships in ecosystems. Ask them to share the details they find, including any quantitative information about survival.
- Have students watch living things in a park or on nature videos to look for different relationships. Ask them to describe any interactions they see and determine which type of relationship they think it represents. You may wish to have them share their findings with the class.