Episode 7

Strand **6.4**	Standard **6.4.2**	Big Idea **Organisms interact with other living organisms in their environment.**

Title **Mutualism**	Time **90 minutes**	CCCs **Patterns**	Practices **Construct an Explanation**

Summary of Episode

Gathering
Obtain Information
Students will view the following video about army ants and the acacia tree.
https://safeshare.tv/x/ss5e90c99890a5d

While watching, students should make note of the relationship between the two different species of organisms. After viewing the video, facilitate a discussion of what was seen.
Questions could include the following:

- What pattern of interaction was seen in the video?
- How do the ants help the tree?
- How do the ants benefit from living on the acacia tree?
- What might happen to the tree if all of the ants died?
- What would happen to the ants if the tree died?
- How did this relationship develop?
- What might we call the relationship between these two organisms?
- Would you expect to find this same pattern in all acacia trees?
- Would we expect to find this pattern of working together for the benefit of each in other ecosystems?

In groups, students will look for the patterns of different species working together for the benefit of each by finding examples of other phenomena of mutualism in nature. Students will create a short presentation to share with their classmates. Presentations might include an oral presentation, a poster, computer slideshow, etc. As each group shares, students will pay attention to the patterns they are seeing in the interactions of the different organisms.

(Teacher Support: Other phenomena could include bees and flowers, spider crabs and algae, bacteria and humans, goby fish and shrimp, oxpecker and rhino/zebra, clownfish and sea anemones, crocodile and Egyptian plover, cleaner wrasse and other fish, honeyguide bird and honey badger, capybara and birds, etc.)

Reasoning
Construct Explanations
Using the patterns of interactions they have identified throughout this standard, students will read scenarios of organism interactions and categorize them as an example of predation, mutualism, or competition. They will construct an explanation for each categorization (see handout 6425.a).

Communicating
Construct an Explanation
Students will individually write an explanation of the pattern of mutualistic interactions of organisms and how this pattern can be consistently found in multiple ecosystems.

Assessment: Students' explanations should demonstrate an understanding of the pattern of mutualistic interactions between organisms.	**Materials, resources, handouts, etc.** Website link: https://www.youtube.com/watch?v=Xm2qdxVVRm4 6427.a Organism Interactions handout