Engage

Answer the following questions before watching the video in the Explore section.

1. Below is a sample of some wildflowers in a field. There are primarily three colors of flower – red, yellow, and blue.

   a. What would be the most accurate way to determine the number of each color of flower in this image?

2. This image shows more of the same field of flowers.

   a. Could you use the same technique to
determine how many of each colored flower there are?
b. What might be a problem with using that technique?

c. What information from the previous image of flowers could help you analyze and quantify the flowers in this image?

3. This last image shows the entire field of flowers.

a. Assuming you knew the size of the field, how could you get an approximate count for each color of flower in the entire field when there are too many flowers to count individually?
b. When studying plant or animal populations, why is ecological sampling an important method for scientists to use?
c. List three things a plant needs to grow.
d. Choose one of these things and explain how it can act as a limiting factor.

e. Now describe a scenario where that same thing would not act as a limiting factor.

**Explore**

1. Complete the quadrat sampling activity.

**Explain**

1. What was the total number of ants observed in all your quadrats?
2. What was the total number of non-ants observed in all your quadrats?
3. What is the ratio of ants to non-ants based on these totals?
4. Based on your data, is there a difference between total arthropod abundance near perches and total arthropod abundance in open areas?
5. Based on your data, do you think your study site would support a population of anoles? What could make the area more or less suitable for anoles?
6. What proportion of ants to non-ants did you find in your samples? Round to the nearest whole number. Anoles tend to avoid distasteful ants as a prey item.
7. Based on your arthropod samples, do you think your outdoor habitat has enough prey items to support a population of anoles?
Extend

Imagine that you are a scientist interested in one of Florida's Threatened or Endangered species. Conduct some online research about one of these organisms: the red-cockaded woodpecker, smalltooth sawfish, scrub plum, or Sanibel Island rice rat. Then-

1. Describe the ecosystem this organism calls home.
2. Describe the type of habitat and resources this plant or animal needs to survive.
3. What are some other organisms within the same habitat that, together, form a community?
4. What is a research question about your chosen species you would be interested in studying?
5. You want to research the abundance of your target species in a particular area through scientific sampling. What sampling method would you choose? Why?

Evaluate

After you have completed your population count and habitat assessment, share your findings with your classmates, teacher, family, and friends. Note any differences and similarities and discuss what you have learned!