



Time Needed

- 20 minutes to organize
- Up to 2 days to collect data
- 30-40 minutes to discuss FACTivity exercise



Materials

- 2 cameras per group (phone cameras, tablet cameras, or point and shoot cameras)

The question you will answer in this FACTivity is: How does the information you collect vary when you use different ways to collect the same information?

Methods

Divide your class into groups of four students each. Make sure each group has access to two cameras, such as those listed in the “Materials” section. For this FACTivity, your group is curious about the popularity of different types of shoes. Your group would like to conduct a research project to determine the abundance of a certain type of shoe in your school.

First, your group will decide what type of shoe you are interested in counting. You could select, for example, a particular brand, a particular type of shoe, a particular shoe color, or any combination.

Each member of your group will be responsible for collecting data about the abundance of this shoe in your school. When you count, you will count a pair of shoes as one.

Two group members will conduct their own observational survey. Each member will count the number of pairs of the particular shoes he or she observes in school over 2 days.

Another group member will identify a busy location, such as the building or cafeteria entrance. This group member will take a photo of all the passing shoes every 5 seconds for 2 minutes during a time when many students are passing. For example, the time could be at the start or close of school, or at the lunch hour. The camera should be pointed at the same location for every photograph. Use a tripod if possible.

One group member will take 24 photos of students’ shoes during a busy time, such as during lunch or as students are getting ready for their day. This student can move freely and can photograph any shoes she or he wants to photograph. If a pair of the selected shoes is seen, it should be photographed.

All group members will record their counts in the graphic organizer on page 55.

Lion in Wait **FACTivity** Graphic Organizer

Group members: _____

Shoe Description		
Group Member Data Collection Method	Date and Time	Number of Shoes Counted
Survey #1		
Survey #2		
Stationary Camera		
Roving Camera		

After all data have been collected, your teacher will hold a class discussion based on the following questions:

1. How did the number of chosen shoes counted vary by data collection method?
2. What are the similarities between the data collection methods?
3. What are the differences between the data collection methods?
4. What are the advantages of each data collection method?
5. What are the disadvantages of each data collection method?
6. How does each data collection method compare with each similar source of lionfish abundance data in this article? (See Graphic Organizer to Compare Methods on page 56.)
7. Which of the group's members are most like the citizen scientists in this article?

Lion in Wait FACTivity Graphic Organizer to Compare Methods

	Use the space below to compare the methods.
<p>ROV Video (Lion In Wait)</p> <p>vs.</p> <p>Roving Camera (FACTivity)</p>	
<p>Stationary Camera (Lion In Wait)</p> <p>vs.</p> <p>Stationary Camera (FACTivity)</p>	
<p>Questionnaire (Lion In Wait)</p> <p>vs.</p> <p>Surveys (FACTivity)</p>	

If you are a trained Project Learning Tree educator, you may use “Did You Notice?” and “Improve Your Place” as additional resources.



Web Resources

U.S. Geological Survey-NAS Animated Map of Lionfish Spread

<https://nas.er.usgs.gov/queries/SpeciesAnimatedMap.aspx?speciesID=963>

U.S. Geological Survey-NAS Point Map of Lionfish Sightings

<https://nas.er.usgs.gov/viewer/omap.aspx?SpeciesID=963>

Dauphin Island Sea Lab

<http://www.disl.org>

Southeast Area Monitoring and Assessment Program

https://sero.nmfs.noaa.gov/operations_management_information_services/state_federal_liaison_branch/seamap/index.html

U.S. Geological Survey Nonindigenous Aquatic Species Program

<https://nas.er.usgs.gov/>

Reef Environmental Education Foundation

<https://www.reef.org/>

Reef Environmental Education Foundation Lionfish Page

<https://www.reef.org/lionfish>

Reef Environmental Education Foundation Free iPhone Mobile App for Lionfish Sightings:

Search for “REEF Lionfish Sightings”

Marine Advanced Technology Education Center (teaching resources for marine technology, including ROVs)

<http://www.marinetech.org/>

