

Citizen Science • Reflection Section Answer Guide

Device-ive Science

Introduction

What questions did the scientists want to answer? *How has new technology affected the relationship between scientists, science, and citizens? How can the Forest Service involve more citizens in scientific projects?*

Name one way that better computer access has changed the relationship among scientists, science, and citizens. *Students will have individual answers to this question. They should, however, be able to back up their claims with logical reasoning. Some examples include: Citizens can learn more about scientists and the topics they study. Citizens can ask more questions about how scientists do their research. Scientists can communicate their findings directly with citizens. Citizens and scientists can work together through citizen science projects.*

Methods

Pretend you are one of the scientists in this study. What would you ask other scientists if you were interested in whether citizen science can be a successful way to conduct research? *Students will have individual answers to this question. They should, however, realize that the scientists in this study would ask other scientists to share their experiences with citizen science. Questions might include: Was your experience with citizen science successful and why? Would you try a citizen science project again and why? Does your research depend on the help of volunteers? Students may have many different ideas to share.*

Name two ways that new technology makes it easier for citizens to participate in citizen science projects. *Students will have individual answers to this question. They should, however, realize that technology makes it easier for scientists to share instructions on collecting information and it makes it easier for citizen scientists to submit their observations electronically. New technology also makes it easier for citizen scientists to read about the results of the research.*

Findings

Brainstorm a number of natural events that your class could observe, record, and submit to scientists. Discuss why having this information might be helpful to scientists. *Students will have individual answers to this question. Students should be encouraged to think about the natural events that happen at different times in their community. Examples include the appearance or migration of certain birds or other animals, the flowering of plants, weather events, and geological events (such as earthquakes or volcanoes). Encourage students to consider social science events as well. Social science events might include, for example, the number of people walking in their neighborhood after dinner.*

Think of someone you know who has a lot of knowledge about and experience with a particular topic. How could that person's knowledge and experience help a scientist?

Students will have individual answers to this question.

Discussion

Think about your own access to technological devices. To which environmental science topic would you like to contribute? How do you think you could contribute? *Students will have individual answers to this question. They could mention just about any natural resource topic that would be conducive to information collection.*

How would you benefit from being involved in an environmental citizen science project?

Students will have individual answers to this question. They should, however, mention benefits such as getting outdoors, learning about the scientific process, improving their observation skills, working with scientists and other interested people, learning about their environmental topic, making friends, and improving the natural environment.