

Reflection Section Possible Answers

The following section provides a guide to possible answers to the reflection questions found in each section of the articles. Reflection Sections are meant to stimulate critical thinking about the article, not to test knowledge. Use the answers below as a guide to stimulate critical thinking and discussion in your classroom.

Moving Spore-actively

Introduction

- **What is the problem the scientists wanted to study?** The problem is that sudden oak death, a disease that can damage or kill trees, is spread from tree to tree within a forest. The scientists wanted to know how sudden oak death is spread from tree to tree in order to try to stop it.
- **Which type of tree would you guess is most often killed by the organism that causes sudden oak death?** Oak.

Method

- **What would the scientists learn by comparing the number of spores found after a rain in buckets placed in increasing distances from infected bay laurel trees?** They would learn about how far the spores travel from affected trees across open spaces during a rain.
- **What is the difference between the spores found in the rainwater traps and in the buckets?** The rainwater traps would tell the scientists how many spores can travel from infected trees in the forest through rain to the ground. The bucket traps would tell the scientists how far spores can travel from infected trees across open spaces during a rain.
- **What would the scientists learn from floating leaves in the stream?** The floating leaves would become infected with sudden

oak death if spores were in the stream. This part of the experiment would tell the scientists if spores were in the stream within the forest and, if so, if the spores could survive in the water 1 kilometer downstream of the forest.

- **What would the scientists learn from the students' hike?** The scientists would learn whether spores from infected trees would get in the soil and then onto the students' shoes. They would learn whether the spores would remain on the shoes after a 2.4-kilometer walk. This finding would tell the scientists whether hikers can transport sudden oak death if they walk through a forest with infected trees.

Findings

- **Basing your answer on the findings, would you say sudden oak death can be transported by water? Why or why not?** Yes. The evidence indicates that the spores that cause sudden oak death are transported by rainwater and down streams.
- **Basing your response on the findings, would you say that people can transport the spores that cause sudden oak death? Why or why not?** Yes. The student hiking experiment showed that spores are in the soil and can be transported after the soil gets onto hikers' shoes.
- **Basing your answer on the findings, under what weather conditions would you say the transportation of spores is more likely to occur?** During the rainy season, or when it rains.

Discussion

- **Do oak trees live in your area? What do you think would happen if sudden oak death began to kill those trees?** These questions are for individuals and each

student should come up with his or her own ideas. Some potential answers include: (1) Animals that use oak trees for food and habitat would no longer have a place to live, (2) the beauty of oak trees, including what they contribute to the area, would be lost, and (3) the ecology of forests with a lot of oak trees would be changed.

- **Do you think research should be done on sudden oak death outside California? Why or why not?** Yes. Because sudden oak death can kill oak trees and is easily transported from tree to tree in California, it would be best to know how it might be transported in areas outside California and which trees might be affected.

And Then There Were Nun

Introduction

- **In your own words, state the question the scientist wanted to answer.** Which tree species in the United States are most likely to be the preferred habitat of the nun moth?
- **What is the advantage of knowing in advance which tree species might be the preferred habitat of the nun moth?** If the nun moth were found in the United States, people would already know which tree species the moths prefer as habitat. People could stop the spread of the nun moth by cutting down those trees within the area where the moths were found, or by otherwise controlling the moths before they spread.
- **The scientist did this study in the Northeastern United States. Do you think she studied the moths inside or outside a laboratory? Explain your answer.** The scientist had to do her study inside a laboratory because she did not want any eggs, larvae, or moths to escape into the outside environment.

Method

- **What did this experiment enable the scientist to discover?** The scientist discovered which species of foliage kept larvae alive and which species of foliage supported the development of larvae into pupae.
- **When the scientist placed fresh foliage in each container, do you think she used the same species of foliage that she had removed from that container? Why or why not?** Yes. If she used foliage from a different tree species, she would have no way of knowing which species of foliage supported the larvae's development.
- **Why do you think the scientist wanted to discover what percentage of larvae became pupae?** If the scientist had stopped the entire experiment at 14 days, she might have overestimated the percentage of healthy larvae. Some larvae may have lived but might never have become pupae.

Findings

- **What species of trees do nun moth larvae prefer to eat?** Most conifer species and many oak species appear to be preferred by nun moth larvae.
- **Do you think these findings are good news or bad news for people worried about the invasion of nun moths into the United States? Why?** These findings would be bad news for people worried about a possible nun moth invasion because nun moth larvae appear to survive on a wide variety of tree species that are found in the United States.

Discussion

- **Trees are important to people in forest industries, such as those using trees for wood products. Many industries that depend on forests might need the trees alive and healthy. What other forest-dependent industries could be affected by a nun moth invasion?** You may need to