

DISCUSSION

Lead a discussion using the general discussion questions and questions from one of the Crosscutting Concept categories. Interperse pair talk with group discussion.

General Discussion

- a. "In groups of four, share your notes and observations. Find out: Did everyone make the same decisions about what was young or old? If you do not all agree, share your evidence for why you each arranged them the way you did."
- b. "It's OK to respectfully disagree with each other. Be willing to change your mind in the face of new evidence. After you are done with your discussion, number your observations to sort them from youngest to oldest."
- c. "Look at the different stages you drew, and discuss: What might the function of the flower be at this stage? Then group the stages together based on a common function by labeling each group with a name that describes what you think it might do."

Patterns

- a. "Please lay your journals on the ground [picnic table, rock...], then look through the observation notes made by your group. What similar patterns do you see among the different stages of flowers in your journal entries?"
- b. "Are there any flower structures that you see at every stage? What's different among them?"
- c. "Now look at the ways the plant structures change over time. Do you see any patterns in what changes, and when? Which structures are the first to change?"
- d. "How do you think the growth patterns of other flowers might compare?"

Cause and Effect

- a. "What changes did you see between different stages of flowers? Which of those changes could have been caused by environmental factors, such as temperature changes or impacts from organisms? Which ones do you think might have been caused by genetic factors?"
- b. "Why are these flowers changing? How might this help the plant survive?"

Stability and Change

- a. "Take a look at your drawings. What parts of the flowers changed? What stayed the same?"
- b. "Did you see any evidence of a change in the rate of change—in other words, were there bursts of activity and pauses? Why? What might have caused those changes?"
- c. "What was the youngest stage we found? What do you think came before that? What was the oldest stage we found? What do you think would come after that?"

Structure and Function

- a. "With a partner, describe in detail some of the structures you observed."
- b. "Pick one structure to focus on, and try to trace how it changed from young flower to old flower."
- c. "Pick one structure to focus on, and come up with some possible explanations for its function, thinking about how its function might have changed over time. For example, if a leaf petal became withered at a certain point, why might that be the case? How is its function changing?"
- d. "Did you see any evidence of a change in function of the flower or of any individual structures in the flower? How might the functions of this plant change over time? What about individual structures? How did their function change?"