# **Plant and Animal Adaptations Discussion Guide (for use during or after reading)**

1. What are adaptations? (Changing Organisms, p. 6-7)
   1. Adaptations are features that help a living thing survive in its environment. Both plants and animals develop adaptations to ensure their survival.
2. What can happen if an organism cannot adapt to changes in its environment? (A Changing Environment, p. 8-9)
   1. Depending on the changes, if organisms cannot adapt to whatever is happening in their environment, they may not be able to survive it.
3. Give an example of an organism and an adaptation that can occur over a short period of time. (Adaptations Over Time, p. 10-11)
   1. Some animals, such as dogs, will shed their fur when the climate get too hot for them. This adaptation can occur over a short period of time to help the dog survive the change in environment. In addition, plants can develop adaptations over short periods of time, such as absorbing and storing excess water to use during dry periods.
4. What is photosynthesis? (Plant Adaptations, p. 12-13)
   1. Photosynthesis is the process plants use to turn energy from sunlight, water, and carbon dioxide into food for the plant. The plant can either use this food to grow and change or can store it for later. All plants get their energy from the sunlight.
5. Why is climate important to a plant’s chances of survival? (Plant Adaptations on Land, p. 18-19)
   1. Climate is important to a plant’s chances of survival because plants rely on the climate for water, sunlight, and other nutrients. If the climate is such that plants do not have access to the amount of sunlight or water they need to survive, they will need to adapt.
6. How have mangrove forests adapted to survive in their aquatic-based environment? (Plant Adaptations in the Water, p. 20-21)
   1. Mangroves forests grow along tropical shorelines. They are frequently waterlogged. The mangroves have adapted in many ways to ensure they can survive in this environment. For example, their roots have stilts that keep them propped up above the water, their bark has special parts that allow the plants to breathe, their leaves remove any extra salt, and their seeds float. These adaptations not only help the mangrove forests survive, but also provide many habitats for other animals.
7. Senses help us make sense of our environment. Give an example that illustrates the idea that some senses are more important to one type of animal than another. (Sensing the Environment, p. 22-23)
   1. Animals often depend on one or more of the five major senses: sight, smell, taste, touch, and hearing. Some animals, though, rely on one of these senses more than others. For example, most birds rely heavily on their sense of sight to find food. In addition, dogs rely on their sense of smell to find food, follow trails, and avoid predators.
8. What can plants sense? How do these senses help plants survive in their environments? (Sensing the Environment, p. 22-23)
   1. Plants can sense light, gravity, moisture, chemicals, and even attacks from predators. These help plants survive because they can activate other structures to help provide protection. For example, some plants can release chemicals that attract predators of animals trying to eat them.
9. The Venus’s-Flytrap has adapted to be able to trap insects within its leaves. Why did it need to develop this adaptation? (Adapting to an Environment, p. 26-27)
   1. The Venus’s-Flytrap needed to develop an adaptation that would help it get nutrients. Because the soil may lack nutrients, the plant needed to find another way to absorb what it needs to survive. The plant will digest the insects in order to get its nutrients.
10. One way humans developed to meet their basic needs was to create a system of farming. However, farming has led to another problem. What is it and why is it considered problematic?
    1. Although humans need to farm in order to survive, sometimes this ends up destroying entire ecosystems. When there are changes in ecosystems, the plants and animals need to adapt and change. These changes often come with new benefits as well as problems for other ecosystems. All organisms in an ecosystem work together. Likewise, ecosystems work together. When one is destroyed, it can cause problems for others.