

## **Optional Extensions**

### **Brainstorm!**

Pick any animal- You can preselect the animals or allow students to use science reference materials/the internet. Prompt them with the following questions: What are the basic needs of all organisms? What does your organism specifically need? How does the organism get those resources? What happens if they can't get them? Have students form two lists: (1) Who or What Depends on This Animal? and (2) Who or What This Animal Depends On. Students can create a PowerPoint, poster, paper, or collage from magazines, or they can find another way to gather information.

### **An Ecosystem That Didn't Work**

Biosphere 2, near Tucson, Arizona, was built in 1991 to be a large, self-contained ecosystem that humans could live in for years without needing outside air, food, or water. It didn't work. Be sure to have safe internet sites available so students can research why it failed. Space colonies will need to be self-contained in the future. Students can find out what NASA has learned about the needs for a space colony to be self-sustaining. Students could design their own biosphere and draw a layout on large paper, showing the sections that will meet the basic needs of a crew of 10 humans and the needs of the plants and animals they are bringing with them.

### **Small Ecosystems**

Students can observe the importance of interdependence by observing an ant farm, aquarium, or terrarium. Over the course of a 2-week period, students can track what they need to provide those ecosystems for the plants and animals to survive as well as what needs are met with what is inside the container. For example, students might have to supply clean water, aeration, and food to the fish in the aquarium, while the container supplies the shelter. However, they may only need to supply food to the reptiles or amphibians in the terrarium, while the container supplies the oxygen from the plants and shelter as well as maintains moisture in the covered environment, etc.

### **Calculate Carbon Footprint**

Many websites offer an online carbon footprint calculator that students can use to find out the impact their living has on the environment. By inputting information on their location, their type of food, their method of transportation, how their home is heated and cooled, etc., students can learn how much a person contributes to pollution. Discuss ways to make a person's carbon footprint smaller and to live a more eco-friendly lifestyle. Be sure to have safe internet sites available.