



Grade Level: Elementary School

Subject Correlation: Social Studies, Math

Objectives: Students will appreciate humans' reliance on limited natural resources and become conscious of the concept of sustainability and sustainable living. **Students will be able to:**

1. Describe how and why humans use natural resources and the problems associated with their use.
2. Appreciate the interdependence between humans and nature.
3. Describe and demonstrate behavior showing an appreciation for environmental preservation.

Length: 45 minutes

Teacher Preparation: bring in one or two good-sized apples to class. If possible, reserve time in the computer lab for students to take the Ecological Footprint Kids Quiz during this lesson.

Outline (with times)

10 minutes

Introduction: The Allegorical Apple – this exercise should help students appreciate the earth's limited natural resources at our disposal.

The teacher will present a good-sized apple to the class and explain that in this allegorical exercise, the apple represents the Earth. Cut the Earth into four pieces and discard three of the pieces representing saltwater oceans, 75% of the earth. Slice the remaining piece of earth in half and discard one piece representing land, such as deserts, which is inhospitable to people. Slice the remaining 1/8 of the Earth into four sections and set aside three of the sections representing areas too rocky, too steep, or too cold to produce food. Carefully peel the skin off the remaining 1/32 slice of the earth. This represents the surface of the earth, the earth's crust with its topsoil which humanity depends on. The earth's topsoil is only about five feet deep and produces a relatively fixed amount of food. Over farming and erosion take away 24 billion tons of topsoil per year. Each inch of top soil requires 100 years to form.

This exercise demonstrates to the students that, despite how large the Earth may seem, the amount of natural resources available for people to use are limited and we must use them carefully. Students are now ready to take the Bobbie Bigfoot Quiz to see how their daily decisions affect the amount of natural resources they use on a daily basis.

10-15 minutes

Pre-Quiz list examples and possible answers

Develop three to five questions pertaining to the questions in the Bobbie Bigfoot Web site exercise. Examples:

1. What is “*energy*” and how do we use it in our daily lives? Give some examples.
2. What are natural resources? Give some examples of natural resources.
3. What makes cars run? (gasoline/oil) Where does gas/oil come from? Do we know how much gasoline/oil remains in the earth? What environmental problems are associated with using fossil fuels like gas and oil? Do alternative forms of power exist?
4. What is *garbage* and what do we do with it? Where does it go? Do you throw everything out when you are done with it?
5. What are some things you can *recycle*? Why is it important to recycle?

20 minutes

Bobbie Bigfoot Ecological Footprint Kids Quiz (If you have access to a computer lab or computers in your classroom, take the quiz individually and leave time to discuss answers as a class. Otherwise, your class should plan to use the school’s computer lab or divide the class into groups where one has access to the online Bobbie Bigfoot quiz while other groups take the pre quiz or do the allegorical apple exercise.)

Class Questions for discussion:

1. What kinds of activities cause Bobbie’s foot to grow? Shrink?
2. Name three actions or decisions Bobbie made that causes his foot to grow or causes his foot to shrink.
3. Why is it important to make decisions in your daily routine that do not waste energy, use too many natural resources, or produce too much garbage?
4. Describe three things you can do every day to save valuable natural resources.



What is Sustainability?