

***THE LORAX* and SUSTAINABLE DEVELOPMENT**

Developed by: Dr. John Ramsey, University of Houston

The focus of this activity is to introduce and understand the concept of sustainable development by using ideas found in *The LORAX*.

The LORAX is a fictional story about a man whose activities abused the environment and about what he learned from the experience. The story contains many common components found in the environmental problems and issues facing humans around the world. Further, *The LORAX* also contains many of the components associated with sustainable development (SD), an idea that is probably new to many of you.

Sustainable development is an important (and complicated) idea for all human beings to understand. SD is the current worldwide attempt by planners, leaders, and scientists to conduct human activities in such a way that the environment is preserved. Although there is still much confusion and discussion, there appear to be four basic parts of SD - human needs, technology needs, economics needs, and environmental needs. Let's consider each of these.

"Human needs" refers to the basics of human life. The primary needs include income, shelter, food, water, safety, and health. Certainly, others might argue that educational and spiritual components should be included. And certainly there are differences between regions, nations, and continents. Individuals living in developed, industrialized countries have, for the most part, greater opportunities to meet basic needs than individuals living in developing or underdeveloped countries.

"Economic needs" refers to monetary systems used by human beings in their activities. With the exception of primitive tribes, few humans in today's world can themselves meet all their basic needs. Rather, they specialize in a particular good and/or serviced by others. For example, bakers make bread; ranchers raise cattle; truckers transport bread, cattle and other goods. These goods and/or services that are needed by others are then bartered (i.e. traded) or exchanged for money. Money is a symbol of the value humans place on goods and/or services. Then, the bakers, ranchers, and others buy other goods and/or services they need. Thus, over time the exchange of goods and services for money has developed into complicated economic systems, the discussion of which is far beyond the scope of *The LORAX*. The important idea is that in today's world, individuals and nations operate within a complicated system based on the exchange of money for resources, goods, knowledge, and/or services. Further, most individuals (and nations) seek to improve their economic status, increasing their incomes in order that more goods and/or services can be bought.

"Technology needs" refers to the tools, methods, and/or systems used by humans. These include energy production, the use of natural resources, manufacturing, communication, transportation, and others. Humans use technologies to help them meet their economic needs. For example, bakers need ingredients and ovens; truckers need fuel, trucks and highways. Technology assists by saving labor and/or time, increasing production, or increasing health and safety. Unfortunately, the use of technology can sometimes have negative environmental consequences. For example, the mechanical plow led to both increased agricultural production and to increased soil erosion. Many experts now believe that new "environmentally-friendly" technologies must be developed. These technologies should be pollution-free and use renewable energy and natural resources.

"Environmental needs" refers to the protection, preservation, and conservation of biotic and abiotic resources in the natural world. Man's modern history is that of technological development without adequate consideration of environmental effects. Many of the current environmental problems stem from side-effects of inappropriate technology use, e.g., pollution, habitat destruction, resource depletion. Many humans now believe that preservation of the environment must be an important part of all future human activity.

You can see that sustainable development is a tricky idea. It suggests that humans "sustain" the environment by preserving, protecting, and conserving. Yet, economic development is still necessary in all countries, regardless of their current economic status. Many experts believe that this apparent conflict between outcomes is the key to the quality of future human life on the planet and that economic development using environmentally-friendly technology can help promote economic development that sustains the environment. The central SD focus is to balance quality of life with quality of the environment.

After you and your class have read *The LORAX*, please complete the activity that follows:

Interpreting Events and Meaning in *The LORAX*

The LORAX is a fictional story about a man who abused the environment and about what he learned. The story begins in the most run-down part of a dull, gray town. A small boy asks the Once-ler to share the secret of the Lorax and how he was "taken away." Thus, the story is told as a "flashback" as the Once-ler talks about the Lorax and past events.

The characters of the story include:

- the Once-ler, a businessman
- the Lorax, a leader of the plants and animals in the natural world.

Refer to both the text and pictures in *The LORAX* as you respond to the following questions. Your teacher might ask you to work in groups and share some or all of your responses with the class.

The Once-ler's Story: The Beginning

1. The Once-ler moved across the land in his wagon. He came upon a new region with an important natural resource. (A natural resource is a plant, animal, or mineral that can be used by people.) What was this natural resource the Once-ler found?

The Natural Resource?

Name an important natural resource in your region.

2. Humans often appreciate the beauty of the natural world. Experiences such as finding sea shells on a beach or seeing a rare bird often cause strong feelings. Did the Once-ler have feelings about the region and natural resource that he found?

Setting Up Shop and Doing Business

3. The Once-ler used the land's natural resource to start a business which made and sold a product. What was the product? How was it used by buyers?

The Once-ler's Product?

The Product's Uses?

4. The Lorax appeared at this point and asked the Once-ler some angry questions. What did the Lorax want to know of the Once-ler? How did the Once-ler answer?

What the Lorax asked?

What the Once-ler answered?

5. The Once-ler, like other humans in business, organized a system to manufacture and distribute his product. Listed below are several parts of a manufacturing process. Describe if and how each of the following was used in the story. Remember, you may refer to both the text and the pictures.

a. raw materials? _____

b. product design? _____

c. labor (workers)? _____

d. assembly line? _____

e. energy? _____

f. shipping, transportation? _____

g. communication? _____

h. profits/ losses? _____

Using Technology

6. Businessmen, like the Once-ler, sometimes try to make more money by increasing the number of products they can sell. Often new machines and other systems are invented to do this. Other people use machines to work faster, more easily, and more accurately. For example, students, engineers, and others use calculators. Robots are sometimes used to weld sections of cars. Sometimes machines are used to do work humans cannot do. X-ray machines, for example, allow doctors to "see" inside the human body. All these machines are examples of "technology". Often the word "technology" means complicated sets of machines, like those found working together in an automobile plant assembly line. Sometimes "technology" refers to a simple machine like a pencil.

Name an example of technology YOU use at home. _____

Name an example of technology YOU use at school. _____

Name an example of technology that YOUR parent might use at work. _____

7. Now back to the story. What technology did the Once-ler invent to increase the production of thneeds? _____

8. What are several other examples of technology presented in the story?

Environmental Effects

9. The use of technology requires the use of natural resources. The use of natural resources often has an effect on the environment. How did the production of thneeds affect a key biotic (i.e., living) natural resource, truffula trees? _____

10. Threatened and endangered species are those plant and animal populations facing extinction. Often, this is a result of human activity. Can you name several threatened or endangered species and describe why they face this condition?

11. Certain animals depended on truffula trees. Name the animals. Explain why these animals needed truffula trees.

Animals? _____

The Need for Trees? _____

12. Interdependence is an important characteristic of the environment. Living things depend on certain abiotic (non-living) and biotic (living) factors. can you think of a real example in which man's activities have altered the interdependence in natural systems?

13. Often, technological production creates "byproducts." For example, a byproduct of sawing wood is sawdust. Sometimes the byproducts of technology are unwanted or dangerous (for example,

poisonous chemicals) and are pollutants in the environment. Sometimes byproducts are useful. (For example, wood chips can be used to make particle board.) Name two byproducts that resulted from making thneeds.

Byproduct - 1? _____

Byproduct - 2? _____

14. Were the byproducts that resulted from the making of thneeds harmful or helpful to the environment? Check the line beside the answer of your choice.

Byproduct 1: Helpful _____ Harmful _____ I can't decide. _____

Byproduct 2: Helpful _____ Harmful _____ I can't decide. _____

15. The fish and swans were affected by the byproducts of making thneeds. Explain how the byproducts and making thneeds affected these animals.