



Natural Resources

NATURAL RESOURCES

“The Lorax”

SUGGESTED GRADE LEVEL: K-3

OBJECTIVE:

Through Dr. Seuss’s story students will be exposed to the concept of needless waste in a “natural” environment, and will learn how natural resource conservation, reuse, and recycling help care for our environment.

Keywords include:

- ❖ natural resources
- ❖ conservation
- ❖ reuse
- ❖ recycling

TIME:

Partial period.

MATERIALS:

Copies of Dr. Seuss’s story, *The Lorax* (enough for all students to have access to a copy). The story is also available on video if you want to review it after reading.

PROCEDURE:

Introduce the story by discussing what natural resources, reuse, and recycling mean. Lead into the story by explaining how this will be an example of what happens when something is taken from the earth and not replaced.

Read the story to the students, having them follow along.

DISCUSS:

- ❖ Who did/didn’t you like? Why?
- ❖ Why was he called the “Onceler”?
- ❖ Was “bigger” better for everyone?
- ❖ What do we have like the Truffula trees?
- ❖ What are “gluppity glup” and “schloppity schlopp”? Do we have these?
- ❖ Do we have creatures like the Barbaloots that need trees?
- ❖ What do we need trees for?
- ❖ What do Truffula trees need? What do our trees need?

FOLLOW-UP:

Put on a school play of *The Lorax*.

SOURCE:

Cornell Waste Management Institute. 1991.

Trash Goes to School

(<http://cwmi.css.cornell.edu/TrashGoesToSchool/TrashIntro.html>).

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To Live I Need...

SUGGESTED GRADE LEVEL: 2-3

OBJECTIVE:

Students will be able to distinguish between an item that is essential for life and one that they can live without.

TIME:

Partial period.

MATERIALS:

recycled paper, crayons

PROCEDURE:

1. Have the students think of the things they use every day and make a list called "to live I need." Then they will separate the essentials from those things that are just nice to have. List the essentials.
2. Evaluate one item at a time, focusing on the item, and facilitate discussion about each. Some sample questions might be:
 - ❖ Where did it come from?
 - ❖ What are the basic ingredients?
 - ❖ Are the ingredients found in nature?
 - ❖ Are they renewable?
 - ❖ Are they non-renewable?
 - ❖ Are they made by people?

3. Discuss key words: renewable, non-renewable, man-made
- 4.. Design a chart for the items discussed.

Sample chart:

Essential Things	Where does it come from? Found in nature? Made by people? Renewable? Non-renewable?	Basic Ingredient List

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Musical Resources

SUGGESTED GRADE LEVEL: 2-3

OBJECTIVE:

Students will learn about dwindling natural resources. They will:

- ❖ Identify natural resources.
- ❖ See how the things we buy and use each day use natural resources.

Many of our natural resources are truly finite, that is, they are limited in number. It is important to reduce our use of these resources to make them last. Good ways to conserve resources are to reduce what you buy, reuse what you can and recycle as much as possible.

This activity is similar to Musical Chairs. Chairs represent natural resources and, as they are depleted, chairs are removed; however, everyone remains in the game and more people are added to stimulate the growing populations. The students must share chairs to demonstrate increasing stress on our diminishing supply of resources. Vocabulary includes renewable, nonrenewable, raw materials, consumption, finite, and natural resources.

TIME:

One class period.

MATERIALS:

Chairs equal to half the number of students, 20 assorted objects (see list in Procedures below), index cards, crayons, music and player, a bag.

PROCEDURE:

1. Arrange the chairs (chairs equal to half the number of students) to fill in a large circular area representing the earth. (To start the game, there will be a chair for each beginning player.)
 2. Tape to each chair an index card with the name of a resource on it. See the sample cards included with this lesson. Some resources may have to be used more than once.
 3. Tell the students that they represent the people of the world and the chairs represent the resources of the earth.
 4. Place 20 objects in a bag.
 - ❖ soda can
 - ❖ perfume
 - ❖ paper sack
 - ❖ comb
 - ❖ bottle
 - ❖ ruler
 - ❖ aluminum foil
 - ❖ plastic bag
 - ❖ drinking straw
 - ❖ pencil
 - ❖ paper clip
 - ❖ etc.
- Select items that represent a wide variety of natural resources and items that the students can identify with owning and buying.)
5. Have half of the students sit in the circle of chairs. Have each student choose an item from the bag representing resources. The other half of the class should also participate in the discussions.
 6. Going around the circle, ask each student to name the **natural resource** and/or **raw material** used to produce it. (NOTE: The students may need help with naming the basic raw materials used. For example, plastic is made from oil or petroleum, a non-renewable resource.)

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7. Make a list of the natural resources that the students name. Discuss whether they are **renewable** (cotton, trees) or **non-renewable** (aluminum, copper).
8. Tell students sitting in the chairs that they are the people of today's world (the players) and the other half of the class are the future people of the world (they will sit out and watch until they are "born" and called upon to play). Give each student in each group a crayon to use later in the game.
9. When the music plays, the people will walk around in a circle, similar to Musical Chairs. While there are a **finite** amount of resources, there are plenty of resources for everyone at the beginning of the game. When the music stops, everyone will find a place to sit. At this time, each player is instructed to color one of the little squares on the card where he or she is sitting to represent the consumption part of that particular resource. **Ask:** What resource are you consuming and what is it used to make?
10. When the music begins, the procedure is repeated. Again, instruct the players to find a chair (resource) and color a square when the music stops.
11. Before starting the music a third time, tell the students that there are more and more people being born every day, so add three or four new members to the world's population. Begin the music. This time when the music stops, there will not be enough chairs for everyone to have his or her own, so those left without one must find someone who is willing to share his or her chair. Again, each person must color a box on that chair's card. Chairs holding two people will receive two marks on the card, chairs holding three, three marks and so on. Everyone must be sitting before the music begins again.
12. Repeat the procedure, adding additional players with each new round. **WHEN ALL THE SQUARES ON ANY ONE CARD ARE FILLED IN, THE CHAIR IS REMOVED FROM THE EARTH.** (This is to represent the consumption of that natural resource.) Continue this process until nearly all the chairs are gone, and all the students are balancing several people on the remaining chairs.

QUESTIONS FOR THE CLASS:

1. What would happen if the game continued and we kept on populating the earth and consuming our resources?
2. Was it sometimes difficult finding someone to share a chair or lap? Do countries have difficulty sharing resources?
3. How did it feel to be crowded on one chair? How did you feel when a resource (chair) was removed?
4. Is there a similar problem on our Earth? Are some nations using resources more rapidly than others?
5. How could we preserve our natural resources? Make a list of ways to conserve our resources.

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EXTENSION ACTIVITY:

Play musical resources again, but this time when a player reaches a chair, give the student the option of stating a way the resource can be recycled or conserved. If the player can think of a way to conserve (not consume) the resource, the boxes will not have to be filled in. The game can go on indefinitely when the resources do not have to be consumed. Remind students that even renewable resources need wise conservation.

This resource is used to make aluminum, aluminum cans, automobile parts, etc.

Bauxite (Aluminum)		

This resource is used to make electrical wiring for homes, factories, businesses, cars, and computers, etc.

Copper		

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This resource is used to make jewelry, electrical components, etc.

Gold		

This resource is used to make food cans, construction supplies, magnetic tape such as cassette and video tapes, etc.

Iron in ore (Steel)		

This resource is used to make paper, books, furniture, construction materials, etc.

Wood		

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This resource is used to make gasoline, plastic, medicines, polyester and other fabrics, etc.

Petroleum

This resource is used to make glass, construction material, etc.

Sand

This resource is used to make cotton fabrics such as denim, rugs, some papers, etc.

Cotton

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This resource is used to make glass, insulation material, etc.

Feldspar

Feldspar		

This resource is used to make metal alloys, electronics, etc.

Tin

Tin		

This resource is used to make jewelry, electronics, photographic films, etc.

Silver

Silver		

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Nature's Cycle

SUGGESTED GRADE LEVEL: 4

OBJECTIVE:

Students will become aware of how natural resources are used to make everyday products.

After finding out that some products are made from renewable resources and others are made of nonrenewable resources, student teams will sort product cards into their proper resource groups. Then they will cut pictures out of magazines and place them correctly on a resource tree, noting which are renewable and which are nonrenewable.

Skills involved include classifying, observing, evaluating, and analyzing. Vocabulary includes resource, renewable, non-renewable, fossil fuels, ceramics, durables, and minerals.

TIME:

One full period.

MATERIALS:

Book, leather shoes, spoon, plastic toy, magazines, scissors, glue, bulletin board with large tree trunk & branches, sorting cards for each team

PROCEDURE:

1. Hold up the book, leather shoes, spoon, and plastic toy. Ask what all 4 have in common. (All are made of resources from the earth.) Then discuss the 4 categories (groups) of resources by pointing out the large tree trunk

and branches you have mounted on a classroom bulletin board. (See "Resource Tree" illustration.) Develop vocabulary on the tree.

Of the four categories of natural resources (mineral/oil, mineral/rock, plants and animals), only animals and plants can produce more of themselves. These are the "renewable" resources.

2. Let the class place the 4 items into their four different resource categories. Then ask which of these resources the earth can produce more of (animals, plants). Identify these as "renewable" resources. Review the life cycle of paper's natural resource (a tree) and of a shoe's natural resource (a cow) to illustrate that there is an unending supply of books and shoes if we use these resources wisely. Point out that fossil fuels and minerals are non-renewable resources. Thus, we must use them wisely.
3. Give each team a set of resource sort cards and category cards. Instruct students to place each product card on the correct resource card.
4. Allow teams to cut pictures of various products out of magazines and glue them onto the correct branch of the Resource Tree bulletin board. Classify as renewable or non-renewable as pictures are placed on the tree.

EXTENSION ACTIVITY:

1. Make posters reminding people to use products made of renewable resources.

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Resource Cards

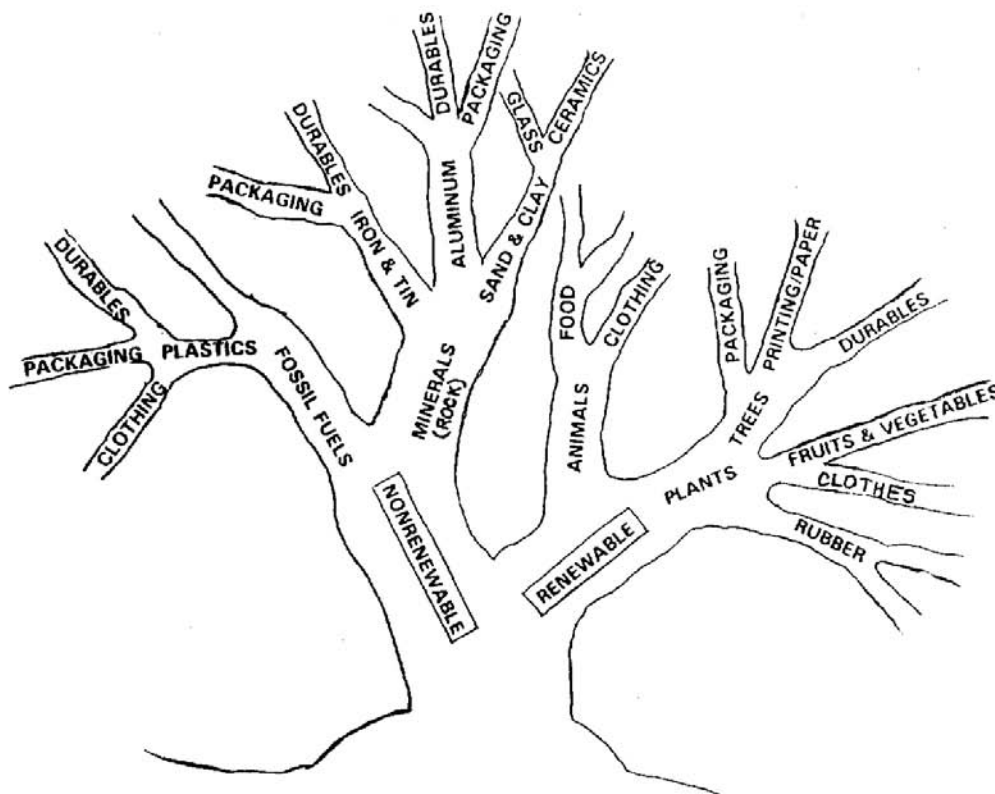
Coffee mug	Tee shirt	Sandwich
Leather shoes	Ruby necklace	Newspaper
Styrofoam box	Ivory piano keys	Dime
Coffee	Plastic rattle	Wool carpet
Soup can	Paper kite	Knobs on a radio
Silk necktie	Window	Tires
Hairdryer	Honey	Sand
Cardboard box	Hairbrush	Ice cream
Car	Cotton	Rayon dress
Feather duster	Aluminum foil	Bookshelf

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Resource Categories

Minerals (oils)	Plants
Animals	Minerals (Rocks)

Resource Tree



"The earth is the source of everything we make, use, and throw away."

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Pick An Item, Any Item

SUGGESTED GRADE LEVEL: 2-3

OBJECTIVE:

Students will list some of the natural resources used to produce a prized possession. Vocabulary includes natural resources, renewable resources, and nonrenewable resources.

MATERIALS:

A can of oil, a piece of wood, a chunk of coal, an ore sample (optional)

PROCEDURE:

Questions for the Class

- ❖ What are **natural resources**? List five natural resources.
- ❖ What is the difference between a **renewable** resource and a **nonrenewable** resource? Give an example of each. (Wood, Petroleum)

1. Define natural resources (wood, minerals, petroleum) and list on the board. Have students bring in a prized possession or, if the item is too large, expensive, or fragile, have students draw a picture of it. Discuss the natural resources that were used in manufacture/production of the item. If necessary, show the students some examples of your prized possessions to help.
2. Either at home or in class, list the natural resources used in producing the favorite item.

3. Show and tell item: Have students share their favorite items, listing the resources used in producing them. **Ask:** What other resources could have been used to make your favorite possession? What will happen to your prized possession if it's broken? Is there any way it can be reused for another purpose?
4. Find examples of toys made from reused materials. (a doll house and furniture, a Match Box car, etc.)
5. Discuss the difference between renewable and nonrenewable natural resources. Identify examples of each among the items the students have brought.

EXTENSION ACTIVITIES:

1. Make a game consisting of names or pictures of commonly used items and a list or picture page of commonly used natural resources. Supply the name or picture of the items and have students circle all the natural resources used in its production.
2. Discuss the qualities: fragile, short-life vs. durable, long-life. **Ask:** What are some things we buy and use for only a short time? Examine some of the short-lived items. **Ask:** what about these items could be changed to make them more durable?
3. List three items in your school or home made from non-renewable resources; then list a substitute item for each of these that is made from a renewable resource.

SOURCE:

U.S. Environmental Protection Agency
Washington, DC 20460