

# There's a Limit

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<b>Strand</b>	Living Systems
<b>Topic</b>	Human impact on conserving resources
<b>Primary SOL</b>	3.6 The student will investigate and understand that ecosystems support a diversity of plants and animals that share limited resources. Key concepts include d) the human role in conserving limited resources.
<b>Related SOL</b>	3.1 The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which k) data are communicated; m) current applications are used to reinforce science concepts.

## Background Information

Earth resources are limited. They can be conserved by reducing consumption. This can be done by recycling and reusing materials. Recycling allows new products to be made from existing materials. Not only does it save on natural resources such as trees, but it also saves on energy needed to make the products. Reusing materials, instead of using something once and throwing it away, also saves our resources. Purchasing single serve items contributes to the amount of materials used and waste created. People can conserve limited resources by recycling, reusing, and reducing the amount of energy being used and the amount of trash being made.

Some resources are considered renewable; examples are trees that can be replanted for more paper or wood, and water can be cleaned and reused. Other resources are not renewable in a single human's lifetime and are considered nonrenewable. The most common examples are oil and coal. It takes millions of years for the process of turning plants into coal or turning plants and animal carcasses into oil deep in the earth. When we recycle items, especially those made from oil such as plastics, we are using less energy.

## Materials

- Science journal
- Books on natural resources
- Books on conservation
- Internet access
- Poster board enough for each student or for student groups
- Markers, crayons, colored pencils, other art supplies

## Vocabulary

*resources, recycle, soil, conserve, reduce, natural resource, mass*

## **Student/Teacher Actions (what students and teachers should be doing to facilitate learning)**

### *Introduction*

1. Bring the class together. Ask them if any of them saw a tree on the way to school today. Discuss why trees would be important to us and to wildlife. What could we do if a tree in the schoolyard was blown down in a storm? Would it affect us? Would it affect any wildlife in the schoolyard? Could we replace the tree?
2. Discuss with the class what a natural resource is. Lead the students to a discussion about those things that are renewable and those things that are nonrenewable.
3. Since we can't easily replace those things that are nonrenewable, what would be some things that we could do to not use them all up?

### *Procedures*

1. Tell the students that they will be working in teams to learn more about one of our natural resources and how we can conserve that natural resource.
2. Divide the class into groups of two or three students. Have each team select the topic that their team will research and report about it to the class. Let each team choose water, land, plants, or animals.
3. Have the student teams conduct research about their chosen topic. They need to find information about the usage of their topic and possible ways people can help conserve their topic.
4. Some suggested topics under the four broad categories might be:
  - a. Save a Tree
  - b. Use the water fountain instead of plastic bottles
  - c. Reduce plastic waste
5. Tell the teams that they will use the information they find during their research to create a poster advertising ways to help conserve the resource they chose.
6. Tell the teams that their posters should include facts about their topic. Teams also should include colored pictures that will attract emphasis on their topic.
7. Give the student teams several days to conduct their research and create their posters.

### *Conclusion*

1. Have the student teams share their posters with the class and have the class ask questions. Tell the teams that they will then display their posters for the class to see.

## **Assessment**

- **Questions**
  - Why is conservation of resources important?
  - How does not conserving affect you?
- **Journal/writing prompts**
  - How can one person change the world?
  - What are the long-term impacts of not conserving?

### **Extensions and Connections (for all students)**

- The class during snack time can have canisters for recyclable materials such as paper, plastic, food, trash. The class can measure the mass of each container. The object is for more of whatever is left over from snack to be in the recycle containers than in the trash container. Try to have a snack time where there is no trash for the class.
- This could also work for the whole school at lunchtime to see what is trash and what is recyclable and to try to make the recycle part bigger than the trash.
- Consider coaching a team of students for the “Siemen’s We Can Change the World” competition.

### **Strategies for Differentiation**

- Have students write a poem, make a skit or write a song to go with the poster in the original activity.