

Activity 2.1: Renewable vs. Non-Renewable Materials (Recycling and Reusing)

Lesson Background:

- Renewable natural resources are those which can be replaced naturally or through human-assisted actions within a relatively short amount of time. Examples of renewable natural resources are plants, animals, water, air, and some energy resources, such as sunlight.
- Nonrenewable natural resources are those available in limited or finite amounts and take millions of years to be replaced. Examples of nonrenewable natural resources are most minerals (e.g., iron ore or bauxite (aluminum) and some energy resources (e.g., fossil fuels). When people recycle and reuse natural resources it decreases the demand on these resources. Non-renewable resources can also be recycled and reused such as plastic and aluminum.

Instruction Part One (Discussion):

1. Write the terms natural and manmade on the board and discuss and have students provide definitions and examples of each. Then, write the terms renewable and nonrenewable on the board. Have students provide definitions and examples for each. Are there some natural materials that are renewable and some renewable?
2. After students have come up with a clear list of nonrenewable vs. renewable, empty out your classes gathered trash and discuss whether these items are renewable or non-renewable.

Deeper discussions...

1. What renewable resources could be used to replace the nonrenewable resources?
2. What advantages and disadvantages might there be for using renewable in place of the nonrenewable resources?
3. What are some examples of resources that would continue to be available no matter how much people used them?

Instructions Part II: Renewable and Nonrenewable Resources in the Garden

Explore your school's outdoor learning space or garden. Find examples of nonrenewable and renewable resources outdoors. (See renewable worksheet) After identifying the renewable resources, ask students for ideas on how these renewable resources are replenished. Some examples may be trees, wildlife and water to be replenished through natural processes such as setting seeds,

Grade Levels: 4th
Grade and Beyond

Core Subjects:
Science

Key Terms: Renewable versus Nonrenewable; decompose; natural and man-made

Materials:
~Various classroom items
~Trash and Kitchen Waste
~Natural and Manmade
~Materials found in the outdoor learning garden or environment

producing young, and rainfall. Sunlight is a renewable resource that is constantly being restored.

Instruction Part III: Composting Renewable and Nonrenewable Resources

Revisit your list of resources you created and found in the class’s trash collection. Make a list of 15 things and categorize them by which things would decompose naturally. Then ask the students to rank the trash items by which ones might decompose first.

Place these 15 things in a compost or soil. Check on the items every month to test the predictions. Some useful examples of Trash Items to discuss

1. Apple core	2. Eggshells
3. Coffee grounds	4. Bark
5. Paper towels	6. Plastic lids
7. Corn-based plastic cups or baggies	8. Batteries
9. Hair (animal or human)	10. Manure
11. Cotton Products	12. Glass
13. Clothing (ask students to view their labels on their clothes and add to the list)	14. Plastic Lid
15. Aluminum Foil	

Some Conclusions:

- Not all natural resources are renewable. Some resources that come from natural sources such as minerals or fossil fuels are available in limited quantities. Although they were naturally made they would take millions of years to reform.
- When we take care of renewable and nonrenewable resources by composting them or decomposing them, we decrease the need for these resources as well as reduce our trash.
- Even items such as glass, plastic or aluminum that may not compost in a reasonable time can still be recycled therefore minimize the demand and amount of resources needed.