

How Green Are You?

PURPOSE:

Students will learn about the resources of the Earth and ways to contribute in saving those resources. Students will be able to define renewable and nonrenewable resources and be able to classify resources into two groups. The students will also learn about landfills and how long certain materials last once in a landfill. The students will also be able to define reduce, reuse and recycle. The lesson concludes with the students making recycled paper.

LEARNING TARGETS:

I can...

1. define renewable and nonrenewable resources
2. classify items into renewable and nonrenewable categories
3. define landfill
4. complete a chart of items in a landfill
5. define reduce, reuse and recycle
6. construct a list of ways to reduce and recycle
7. create a piece of recycled paper



MATERIALS:

- gameboard, trifold presentation board
- list of renewable/non-renewable resources
- definitions of both renewable and nonrenewable resources
- landfill worksheet
- landfill examples
- fun facts sheet
- paper making supplies
 - i. frames
 1. with screens (dekels)
 2. without screens (molds)
 - ii. blender
 - iii. paper, shredded
 - iv. bins for pulp
 - v. table coverings
 - vi. drying rack

PROCEDURES:

This lesson is divided into three parts. Each activity should last 20 minutes. (Activity three is making paper. Please make sure to leave at least 20 minutes!)

Activity One

1. Introduction: Teacher will begin by setting up the game. Do this by opening up the tri-fold presentation board. Place the words renewable and nonrenewable in the center of the board. The line will separate the words. Position the board and the students 10 feet from each other.
2. Explain the rules:
 - a. The students are going to form a line.
 - b. When the teacher says go, the students must approach one at a time.
 - c. The student at the board must pick up a card from the pile and place it on the board on the proper side. (if they are unsure, they should place it on either side.
 - d. After they place it on the board, they must run back and tag the next person in line.
 - e. The game continues until all of the cards

have been placed on the board.

3. Time the learning group and write the time on the graph. (See graph A)
4. Once the game is complete, allow the students time to discuss the results and move any cards they wish.
5. Place the board on the center table and have the kids take a seat.
6. Using the key, tell the students how they did. Add up the number of correct answers and write it on the graph next to their time.
7. Move the words renewable and nonrenewable to opposite sides of the trifold board.
8. Using the definition cards, define all of the resources.
9. End with food and soil and show a box of cereal.

Activity Two

1. Using the cereal as a transition, Ask the students the following question
 - a. How much does the average American throw away each day?
2. Share the answer with the students.
3. Using "Fun Facts 1", ask the group a few other questions regarding garbage.
4. Prior to class, a large trash can should be set up. Inside the trash can please put the following items:

- a. Bag of Coffee Grinds
 - b. A milk carton
 - c. Junk Mail
 - d. Oven Heat "A picture of it"
 - e. Yogurt Container
 - f. Mouse Pad
 - g. Baby Clothes
 - h. Toothbrush
 - i. T-Shirt
 - j. Tomato and other food scraps
 - k. CD
 - l. Cardboard box
5. Have a student come up to the trash can and remove one item.
 6. The student has to identify the item and then provide one example of how to reuse the item.
 7. Continue with this until all of the items are removed from the trash can
 8. Transition to the landfill lesson by explaining that some "trash" needs to be thrown away. Ask them if they know where it goes to.
 9. Define landfill
 10. Pass out the Landfill exercise.
 11. Allow the students 5 minutes to complete the worksheet.
 12. Share the results.
 - a. Using "Fun Facts 2" share any of the facts you would like.
 13. As you are sharing the results, use the Tupperware containers to illustrate what

the particular item would look like in a landfill.

14. Use the bottom two items to transition into the final activity.

Activity Three

1. Using the glass and aluminum, ask the students why those items should not be in a landfill.
 - a. Both items can be recycled.
2. Ask the students the following question:
 - a. How long does it take an aluminum can to get from a curb to back on the shelves.
 - i. (60 days)
 - b. Define recycling
 - i. A series of activities that reuse a product's raw materials to manufacture new products.
3. Using the recycling poster, show the steps necessary for recycling.
 - i. First, a collection of recyclable items must be done. (Curbside)
 - ii. The next phase would be manufacturing. Items are melted down or

- shredded to produce new products
- iii. The loop is complete when the products are purchased again.
 - iv. By buying recycled products, resources are saved.
4. Walk the students over to the long tables set up in the back of the room. Explain that we are going to reenact the paper recycling process.
 5. The materials necessary for paper making should be set up prior to class beginning.
 6. Begin with making the pulp. (This should be done ahead of each class so that you have enough)
 - a. Fill the blender $\frac{3}{4}$ with shredded paper. Add water to fill up the blender.
 - b. Blend on high for 2 to 3 minutes.
 - c. Make sure the pulp is not too thick.
 7. Pour the pulp into a bin of water. The bin should be half way full with water.
 8. Once the pulp is added, mix the pulp and water mixture.
 9. Explain how to use the frames.
 - a. You need one frame with a screen and one frame without.
 - b. Begin with the screened frame. Show the students that the frame needs to be in the top position. Stack the empty frame on top of the first screen.
 - c. Holding both frames together, submerge them into the bin of water and pulp.
 - d. Take the frames out of the water and allow the water to drip through the screen back into the bin.
 10. Once the water is done dripping, move the frames over to a dry area. Set the frames down on the table.
 - a. CAREFULLY, remove the top frame. (The frame should lift off easily)
 - b. If this is done properly, the "piece of paper" should be on top of the screen.
 11. If there is not a single sheet of newspaper on the table, grab one from the stack.
 12. Have the students write their name on a corner of the single sheet.
 13. Pick up the screen containing the paper. Quickly flip the frame over. (Make sure that

- you are flipping it onto the single sheet of paper.)
14. Using a sponge, blot up any additional water that remains on the screen.
Wring the sponge out several times.
 15. Place a hand on the single sheet of paper and the other hand on the frame.
CAREFULLY lift the frame away from the table.
 - a. This is sometimes difficult. If the "new paper" begins to tear. Stop and start the entire paper making process over.
 16. Once the frame is off, allow the paper to dry. This will take several hours.
 17. Depending on the set up, you may have to transfer the drying paper to a different location.