



Character Education Science FCAT Warm-Up



Respect

Middle School - January, 2008

Respect is defined as showing consideration, understanding, and regard for people, places, and things. To quote Ralph Waldo Emerson, "Men are respectable only as they respect." In other words, if you show respect, you will gain respect. We should all show respect for the health of our planet. Our earth with all its plants, animals, and microorganisms, form a complex web of life. The human race flourishes in a healthy environment. Be sure to respect animals, plants, the environment, and yourself by showing consideration, understanding, and high regard to all that share the planet with us. It is important not to take things you see every day for granted!

Recycling Using Junk Mail

By: Darrell Spendlove

Sunshine State Standards: SC.H 1.3.1

source: www.col-ed.org/cur/sci/sci120.txt

Most homes receive large amounts of unsolicited and unwanted mail every year. This mail costs millions of dollars and wastes valuable natural resources. Much of this junk mail ends up as litter or in overfilled landfills.

Materials: Large cardboard box, trash can, butcher paper, collection of junk mail

Activity 1:

1. Assign students to collect and bring to school all junk mail that is delivered to their homes in one week. Have them ask family members if they have any interest in the mail. Did they read it? Do they want to keep it? What would they normally do with that type of mail?
2. At the end of the week have a discussion with students about what they learned happens to the junk mail at their house. Also ask students to name as many resources as they can that were used to produce the mail and deliver it to their homes. List these on the board.
3. Have students make paper airplanes using the junk mail they have collected. They should experiment using different types of paper, sizes, and designs. Explain that using the junk mail to make something else (paper airplanes) is a form of reusing. Have students brainstorm other ways to recycle or reuse their junk mail. Put all junk mail collected into the recycling box. Have students continue to bring junk mail in to recycle, recycle other paper from classes, and encourage others to recycle at home. Students might also like to write letters to get their junk mail stopped.

Activity 2: Make Your Own Recycled Paper

source: www.col-ed.org/cur/sci/sci167.txt

Author: Christy Hornung, Dodge City Public Schools

Overview: Fifty percent of the solid waste produced in North America is paper. Producing all this paper uses vast numbers of trees and immense amounts of energy. The production of energy and manufacturing processes frequently produce pollution. Trees clean the air and help preserve the global ecology. It makes sense to reduce our high use of packaging in products to preserve trees and other natural resources. It also makes sense to recycle to conserve trees and other natural resources.



Resources and Materials: old newspapers, electric blender, large pan, wire screening, water, cornstarch, stirrer, wax paper, rolling pin

Activities and Procedures:

1. Tear a page of used paper into small pieces. Place it in a large pan. Add enough water to cover the paper and soak for 10 minutes.
2. While the paper is soaking, mix one-fourth of a cup of water with about one-eighth of a cup of cornstarch. Stir until the cornstarch dissolves. Pour out the water that was not absorbed by the paper. Put the paper in a blender. Add the cornstarch-water mixture. Cover the blender and run on high for two minutes.
3. Put the screen over the pan. Pour the material onto the screen. With your hands, spread it out so it is flat and thin. Cover the material with wax paper. Use the rolling pin to squeeze out excess water. Carefully remove the wax paper. Allow the new paper to dry completely. This may take a day or two. Gently peel it from the screen and try writing on it. What was the texture, color, and odor of the paper? Was it easy to write on or does it need improvement? Was it worth the effort to recycle it?

Activity 3: Air Particles and Air Quality

Source: www.sciencebuddies.org/mentoring/project_ideas/EnvSci_p009.shtml?from=Home

By Sara Agee, Ph.D., Science Buddies

Sunshine State Standards: SC.H.1.4.1

The air we breathe has a lot to do with our health. As we breathe in fresh air, our lungs absorb oxygen from the air and pass it into our blood stream. So it can be transported throughout our bodies. Oxygen is important for our whole body to have the energy it needs to survive. Breathing clean air is important for keeping your lungs nice and healthy. Tiny particles of dust and soot in the air can enter your lungs when you breathe, and can block the movement of oxygen. Harmful particles can come from pollutants in the air like dust, smog, soot, smoke, and other chemicals. How clean is the air where you live? What about around your school, where you play at the park, or where your parents go to work? You can do this simple experiment to find out the answers to these questions.

Materials: Vaseline, string, black permanent marker, milk carton, hole punch, magnifying lens, digital camera

Procedure:

1. Save a milk carton to use for your experiment. Clean and dry the carton thoroughly before use. Cut the carton into four flat pieces by cutting along the side seams of the carton. Cut each side into three square pieces, each piece will be approximately three inches long and three inches wide. You will have a total of twelve squares when you are done. Using a hole punch, punch a hole in one corner of each square.
2. Tie a piece of string through the hole to make a loop for hanging the square up.
3. Make a data sheet to record where you place your squares, and for the data you will collect from the squares. The sheet should have five columns and six rows. The first column is labeled location, square one, square two, square three, total and average.
4. Decide on your four locations. Good locations are: your back yard, a busy street corner, your school, a park, a shopping center, a parking lot, etc. Write the name of each location in your data table. Include cross streets, the address or the name of the location on your table.
5. Using your black permanent marker, draw a one inch by one inch box in the center of the white side (what used to be the inside of the carton) of each square. Write the name of the location on the bottom of each square, you will use three squares for each location.
6. At each location, find a place to hang up three collection squares. You can hang the squares from a tree branch, sign post, light post, or any other safe landmark. If the location is busy with traffic, for safety reasons, be sure to have an adult with you. Before you hang each square, spread a thin layer of Vaseline in the black box in the center of each square. Hang up the collection square.
7. Leave your collection squares for three to five days. It is best to leave them on days when there is no rain, so if the forecast calls for rain, be sure to go and collect them even if you have not left them out for a full five days.
8. Remove the squares one at a time. Each time, use your magnifying glass to count the number of visible particles you see stuck in the Vaseline inside the boxed area. Write the number in your data table.
9. For each location you will have collected three sets of data, so you will want to average the data to get a better result. Along with you data take close-up photos of the square where the particles collected.
10. Which sites had the most particulate matter in the air? Is it what you expected? Were each of your three counts the same or different? What does this tell you about the relative air quality at the location?

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