



Character Education Science FCAT Warm-Up



Respect

Elementary 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!

The Powers of Pressure by Stephen James O'Meara

Feeling pressured? Don't worry, so is everyone else across the globe. It's a fact. Each day, every day, all day, we wake up under pressure. What's more, for most of us, it's inescapable—even when we sleep. Of course, most of us wouldn't want it any other way, because without this kind of pressure—**air pressure**, that is—life, as we now enjoy it, simply wouldn't exist.

It's Everywhere!

Sunshine State Standard SC.H. 1.2.2. SC.H. 1.2.4

Ever feel like you're walking on air? Well, you do it every day. From the tip of your head to the bottom of your feet, air surrounds you. Air is not a liquid or a solid, but a gas. Like all gases, air is made up of molecules that are far apart. Thus you cannot see air, but air molecules still have weight and take up space—and their weight is pressing against you. You're so used to this air pressure that you don't feel it.

Activity 1: Air, Is It Really There?

Source: <http://www.eduplace.com/kids/hmsc/content/cricket>

Materials:

Bucket or Aquarium filled with 3 quarters water

3 Clear Plastic Cups

1. Turn one cup upside down over the water. Slowly push the cup under water.
2. Look carefully at the cup when it is underwater. What is inside the cup? Would you say the cup is empty, or is it full of something?
3. Keep the cup under water. Now take a second cup and lower it into the water so that it fills up with water. Now turn this cup upside-down.
4. You should now have one upside-down cup filled with air and one upside-down cup filled with water.
5. Hold the air filled cup below the water filled cup.
6. Tilt the lower cups so that bubbles flow up into the higher cup that contains the water. What do you see? You have just poured air from one cup into the other. Try to pour it back and fourth, from one cup to another.
7. Take both cups out of the water. Take a dry cup, wad up a paper towel, and put it into the bottom of the dry cup.
8. Turn this cup upside-down and lower it into the water. What do you observe? Pull the cup straight up out of the water. Look at the towel. Is it wet or dry? What kept the water from reaching the towel?

Don't Forget About Your Four-Legged Friends

S.P.O.T. (Stop Pet Overpopulation Together) Program
Available to Broward County Residents

Pet Owners pay \$10 per animal to have their cats and dogs fixed (sterilized) through
S.P.O.T. Program

The Program is open to low-to-moderate income Broward residents.

Eligibility for the program is based on the number of people in the household and monthly income.



For Information Contact: The Broward County Animal Care Regulation Division (S.P.O.T. Coordinator) at 954-359-2231

If you have any questions regarding these activities or have any comments, call 954-519-1220 or e-mail airoutreach@broward.org. You can also visit our web site at www.broward.org/kids/environment.htm.

Activity 2: Trees are Tops!

Most of us never stop to think about the many ways trees fit into our lives and the consequences we would face if they were no longer here. Take a close look at a tree and discover its many attributes.

How old is your tree?

Scientists estimate that mature trees grow at a rate of an inch a year. During class, use a piece of string to measure the girth (distance around the middle) of your tree. It is most accurate if you measure about four feet from the ground. Now measure the string. Every inch around the girth corresponds to about one year in a tree's growth. Do some trees grow faster or slower? Why?

Water Loss

Each group of students should fasten a small, plastic sandwich bag on an individual leaf and leave it there for an hour. Placement of the leaf should involve experimentation, some should be in the shade and others in the sunlight. After an hour collect the bags. Pour water from each of the sandwich bags into the graduated cylinder and measure the rate of water loss (volume of water lost/time). How did the exposure or lack of exposure to sunlight affect the rate of water loss?

Wanted: Oxygen

Scientists have shown that the average person requires a minimum of 53,000 mL of oxygen per hour. One leaf can produce 5 mL of oxygen per hour. How many leaves would it take for one person to breath one hour? One day? Compare this to the number of leaves on your tree.

Source: www.georgiaconservancy.org



Activity 3: Conserving Water: How to convert your toilet to a low flush toilet

Every day, Americans flush 4.8 billion gallons of water down the toilet. Reducing the amount of water that your toilet is flushing will go a long way in saving water in your home and helping conserve water in general.

Things you will need:

Empty Plastic container with lid (a juice/milk container would work well)

Water, pebbles, sand to fill container

1. Fill half gallon with pebbles, sand, or gravel. Add water until the container is filled about half-way. Add water if more weight is needed. Both types of material are needed or the container will move around in the tank and will interfere with the flushing mechanism.
2. Seal the container shut, or cut it open at the top instead and put a small hole in the bottom. (Do not cut holes in the container if sand or other fine material is used to weigh the container down.) This will prevent the occurrence of stale water in the container, but still save on flushes.
3. Place the container in the tank of the toilet. Carefully lower it into the water, replace the lid.
4. Now flush away. The New York Times reported that you can save half a gallon on each flush. At five flushes a day you will save 350 gallons (1325 liters) of water every month.

Please note: Low flush toilets are readily available. Do not perform this activity on low flush toilets, as the water used is already significantly reduced. Low flush toilets are designed differently, and using less water to flush in a toilet already using less water may mean more frequent clogs, overflows, and extra flushing to remove the same amount of waste (which can end up wasting more water than you are saving).

If you find your toilet is not flushing properly and water is ending up on the floor, take the bottle out. Not all toilets can flush properly with a reduced quantity of water. Consider installing a low flush toilet in the near future.

Sunshine State Standard SC.H. 1.2.4, SC.H 3.2.2.



ANNOUNCING THE 2008 POSTER CONTEST

Open to Elementary & Middle School Students

Grand Prize: Passes to local attractions

Deadline: April 11, 2008

For contest rules visit our web site at www.broward.org/kids/environment.htm
or e-mail airoutreach@broward.org

