The Science & Technology Hotline

June 2007
Newsletter

Did you know:

- The average human body contains 250 grams (1/2 lb) of salt.
- Honey does not spoil.
- Each time lighting strikes, ozone is produced, thus strengthening the ozone layer.
- Lightning strikes about 6000 times per minute on our planet.
- The lighter was invented before the match.
- The Atlantic Ocean grows at about the same rate as your fingernails.
- Hot water freezes quicker than cold water.
- The only rock that floats in water is pumice.

Book Now for 2007/2008 School Year

As promised, we are starting booking of the Hands on learning Kits for the 2007/2008 School Year. The Learning Kits are booked for a three week period and there is no cost to the teacher.

This year we are asking that you really try to stick to getting the Kits back on time as a number of teachers (and students) missed out on their turn because the Kit was not returned on time. These Kits are a great resource and we want to share them with as many schools as possible. We know they are very popular and often book quickly for the entire year.

Starting in September, we are excited to be able to offer the following Hands on learning Kits:

- Air, Aerodynamics & Flight
- Astronomy/Sky Science
- Building Things Levers & Gears
- Building Things (Grade 1)
- Boats & Buoyancy
- Digging For Dinosaurs
- Electricity
- Evidence & Investigation
- Exploring Liquids
- Hearing & Sound
- Insects & Creepy Crawlies
- Light & Shadows
- Magnetism
- Rocks & Minerals
- Senses (*NEW)
- Trees & Forests (*NEW)
- Weather
- Wetlands Discovery
- Seasonal: Thanksgiving, Halloween, Christmas & Easter

Summer Workshop for Teachers

Synchrotron Summer Workshop for Teachers
August 13th - 15th, 2007

This workshop is intended for educators that are interested in stimulating student interest in science through synchrotron research. The educational strength in synchrotron science is in using cutting edge research as examples to support curriculum objectives. We are happy to help create the opportunity for teachers of virtually every science discipline to:

- network with Canada Research Chairs, CLS staff and Users in an effort to understand their cutting edge research
- actively participate in experiments on our beamlines
- discover how to bring synchrotron science into their classroom through the teaching resources provided
- bring your own students into the CLS to collaborate on a synchrotron experiment

**Continuing from 2006:
Teachers who attended the workshop in 2006 were given the opportunity to participate in the new 'Students on the Beamlines' program where High School students collaborated with CLS staff to conduct ground breaking soil science research on the SGM beamline. This program will be continuing as beamtime is available. The first step to bringing YOUR Students on the Beamline is to attend the workshop.

We are very excited to announce that CLS Educational Outreach has received a PromoScience grant from NSERC to provide travel assistance for this workshop.

Typically we invite Canada Research Chairs, CLS staff, and our Users to share their expertise and enthusiasm for science with us by way of explaining what they currently engaged in researching and how that research is conducted. We also spend time brainstorming how we can use that information with our students as well as take a look at some of the prepared materials and ideas that have already been generated. Last year we were able to participate in a soil science experiment on one of the beamlines. Registration is only $100 including lunch and nutrition breaks each day plus classroom resources.

For more information please contact Praxis @ (403) 527-5365 or praxis@praxismh.ca. As well as the Educational Outreach Coordinator of the Workshop: Tracy Walker, B. Ed (306)657-3525.

Bubbles

Have some end of the year fun making bubbles with your students.

Materials

liquid dishwashing detergent (I prefer the blue Ultra Joy®)

water

large pail

glycerin

large wooden spoon

thin wire or a wire coat hanger

flat container (cake pan)

Procedure

1. Make the bubble mixture.
2. Measure approximately 1.5 L (6 cups) of water. Pour into the pail.
3. Slowly add 500 mL (2 cups) liquid dish soap.
4. Add 125 mL (1/2 cup) of glycerin.
5. Take a spoon and gently mix together. You do not want to shake it up very vigorously as it will make too many bubbles.
6. Fill the cake pan about ½ full of the bubble mixture and set aside.
7. Take the wire and shape it into a large rectangle
8. Dip the rectangle in the bubble mixture in the pan.
9. Now hold it up to the light.
10. What do you see?
11. Now have some fun blowing bubbles!
12. Dip the wire into the mixture then hold up to your mouth and gently blow.
13. You may want to twist the wire into different shapes.

What do bubbles have to do with science?

Bubbles are a great science experiment. For instance, when you held the bubble up to the light, you should have been able to see a rainbow of colours. This is due to the light that hits the different soapy layers. This soapy film can contain as many as 150 different layers. They are so thin, that you cannot see them all. As the light passes through a soapy film, it is reflected from the top and bottom layers of the film. This reflection creates many colours. You should have been able to see red and violet most often, as well as an entire rainbow of colours.

Bubble Duet

Materials

Plastic drinking straw

Scissors

Bubble mix

Procedure

1. Cut four slits about 1.5 cm at both ends of a plastic drinking straw.
2. Bend the cut strips outward.
3. Make a small slit in the middle of the straw.
4. Bend the straw at the slit,.
5. You now have a two-ended bubble pipe.
6. Dip one end on the pipe into the bubble mixture and blow in the middle slit. You will get a bubble.
7. Blow a second bubble by dipping the other end of the pipe into the mix and blowing through the middle slit again.
8. Seal the slit in the middle of the bubble pipe by covering it with your fingers.

What is happening?

When you blow the second bubble, the first one gets larger. When the opening is sealed, the smaller second bubble gets even smaller while the first one gets even larger.

Why is this happening?

This happens because a small bubble is more curved than a large bubble, the air pressure exerted by its "elastic" skin is greater than that on a large bubble. Therefore, the small bubble gets smaller. The air from it is forced into the bigger bubble, which then becomes even larger.

For all of your science questions or needs, contact Praxis :

p: (403) 527-5365

f: (403) 528-6570

e: praxis@praxismh.ca

w: www.praxismh.ca

Founding Member of: