



The Science & Technology Hotline

September 2007

Welcome Back!

I hope that everyone had a restful and rejuvenating summer break. You all deserve it!

One of the first things I wanted to let you know for the upcoming school year is that I, Patty Rooks will not be at Praxis for the 2007/2008 school year. As you are reading this, I will probably be rocking the newest member of my family to sleep! I will be on maternity leave until

September 2008.

In the meantime, Praxis is available and willing to help make your school year less stressful. Erin Dunham and Darcee Wong will be in the office to book your Hands on Learning Kits as well as Scientists in the Classroom requests.

I am also pleased to announce the release of a new Hands on Learning Kit for September. We

now have a Senses Kit for use in the grade one curriculum. There are many Hands on Learning Kits still available, but they are filling up fast. Please call Praxis @ (403) 527-5365 or e-mail praxis@praxismh.ca as soon as possible to book your Learning Kit.



Have a great year!

Helpful Hints For New Science Teachers

- Be Flexible—Things will often not go as planned, so you must be able to roll with the punches.
- Be Patient—Students, parents, administrators will not always follow your idealized schedule, so learn how to play the waiting game.
- Be Energetic—Teaching science requires lots of energy, especially on lab days, so drink your coffee and put on your comfortable shoes.
- Be Humble—Do not be afraid to ask for help, in fact insist on it. Seek out a mentor in your department (if one has not already been assigned to you).
- Be a Student—The best teachers, especially those teaching the ever-evolving subject of science, need to be perpetual students. Continue to immerse yourself in your subject matter by attending workshops, summer courses, online courses, college lectures, etc. Although it is impossible to keep up with everything, it is fun and exciting trying to!
- Be Proud—Not just anyone can do what you do. No matter what, go home each day knowing that you are doing something really amazing, helping to shape young minds and positively influencing students for years to come!

Tomatosphere Project

Agriculture and Agri Food Canada are inviting 7200 classrooms to join in the New Tomato Seed Experiment.

Space farming is an integral part of long term space exploration. Preparations are now underway to support the Mission to Mars. Tomatosphere challenges students to uncover clues in this exciting area through scientific discovery. This curriculum based project for grades 3– 10 involves the germination of seeds in an experiment which

emphasizes and reinforces the scientific method. Teachers will receive two packages of seeds—a control group and a group that have been exposed to a simulated space environment which created conditions similar to what could happen if there was a breach in the space vehicle storage system in route to Mars.

You can register online: www.tomatosphere.org. As well, all information is available online including a teacher's guide, stu-

dent activities, background information, tips and tricks for quick access to the main components of the project and even letters to parents explaining the project. Due to the generous support of many sponsors, there is NO COST to teachers. The only expense you will have is the purchasing of the medium for planting the seeds.

Register early to avoid disappointment.

Source: <http://www.ed.uab.edu/ymwang/LearningProblems/ScienceTeacher.htm>

Growing Soap

Materials

- bar of Ivory soap
- various bars of soap
- deep bowl paper towel
- microwave oven
- water

Procedure

1. First of all, we want to see if the soap will float in the water.
2. Fill a bowl 3/4 full of tap water.
3. Gently place the bar of Ivory in the water.
4. What happens?
5. Gently place another bar of soap in the water.
6. What happens?
7. Take a closer look at the bars of soap.
8. Break the Ivory in half.
9. Repeat with the other bars of

soap. Do you see any reason why it may float?

10. Take a piece of paper toweling and place the bar of soap on it.

11. Put in the microwave.

12. Cook the soap on HIGH for about 90 seconds. Watch closely as every microwave cooks differently and you do not want to overcook the soap.

13. Allow the soap to cool for a minute or so before touching it. It is hot!

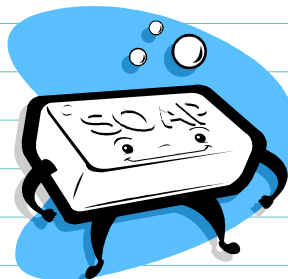
14. Amazing... it's puffy but rigid.

What is going on?

Ivory soap is one of the few brands of bar soap that floats in water. Ivory soap floats because in the manufacturing process, air is whipped into the soap. It was not always this way. Many years ago, one of the employees forgot to shut off the mixer before going on a break and the soap was mixed and

mixed. They liked the results so much, that they have continued to do it ever since!

You can explain why the soap expands in the microwave very similar to how popcorn pops in the microwave. The soap expands in the microwave because it contains water. When you heat the soap, the water contained within the bar of soap is also heated inside of the bar. As the water is heated, it forms bubbles, expanding the soap, making it all fluffy.



If you wanted a more complicated explanation, this phenomenon could also be explained through Charles' Law. Charles' Law states that as the temperature of a gas increases, so does its volume. When the soap is heated, the molecules of air in the soap move faster, causing them to move far away from each other. This causes the soap to puff up and expand.

Exploding Grain Elevator

This experiment is sure to get your days.

students attention. **Please be careful and only demonstrate this experiment.**

As with all science experiments, it is important that you try before hand so you know how big of a bang you will get. As well, have the students stand back. I might even suggest doing this outside on a calm day.



This time of the year is when you may see this happen!

It would be interesting to ask your class how many of them even know what a grain elevator is as they seem to be disappearing along the railway these

When you blow into can, the dust spread throughout the inside of the can. Because it was so dusty, the

Materials

- candle
- candleholder
- large metal coffee can with lid
- rubber hose
- cup
- flour

What is going on?

candle ignited the mixture causing the gases in the air to expand. When the gases expand, they need more space than the inside of the can contains. There is only one place for the gases to go – out of the can. The only way they can escape out of the can is to blow the top off. That is why you have such a magnificent explosion.

This demonstrates exactly what can happen if a grain elevator is not properly ventilated. The dust builds up inside of the elevator and had no place to go, so it literally explodes..

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

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