



# The Science & Technology Hotline

February 2007  
Newsletter

## Interesting Science Facts

- *The Poison Arrow frogs of Central and South America are the most poisonous animals in the world.*
- *The deepest part of the ocean is 35,813 feet (10,916 meters) deep and occurs in the Mariana Trench in the Pacific Ocean. At that depth the pressure is 18,000 pounds (9172 kilograms) per square inch.*
- *The hottest planet in the solar system is Venus, with an estimated surface temperature of 864 F (462 C).*
- *The only letter not appearing on the Periodic Table is the letter "J".*
- *Hershey's Kisses are called that because the machine that makes them looks like it's kissing the conveyor belt.*
- *By raising your legs slowly and laying on your back, you can't sink in quicksand.*
- *If you could drive to the sun -- at 55 miles per hour -- it would take about 193 years.*
- *Hydrogen is the most abundant element in the Universe (75%).*

## Important Information

### New Kits Released

After many months of research, preparation, and consultation with teachers, Praxis is pleased to announce the release of two new Science Learning Kits.

- Trees and Forests (Grade 6)
- Air and Aerodynamics (Grade 6)

If you are in need of a topic and would like to see us develop a kit, or if you have suggestions on how we can improve our existing Learning Kits, please do not hesitate to e-mail us at

[praxis@praxismh.ca](mailto:praxis@praxismh.ca) or call (403) 527-5365. We are here to help you and assist in making the delivery of the science curriculum much easier.

Continue to watch in the upcoming months for new Learning Kit announcements.

### Astronomy Fieldtrips

Many people do not know that we have a hidden treasure right in our own backyard—an Observatory filled with knowledgeable volunteers. The Observatory is a

large dome building with a rotating top and state of the art telescope. They also have additional telescopes they can put up outside for additional viewing. The Observatory is just a short bus ride west of Medicine Hat. If you are interested in taking your Grade 6 or Grade 9 class to the Observatory for a curriculum related fieldtrip, please call Praxis @ (403) 527-5365 to make these arrangements. Please do have a couple of dates in mind and note that you will have to go in the evening as that is when the viewing of the stars is the best.

## Conference Opportunity

### Trails to Sustainability

An Environmental

Education Conference

May 24—27, 2007

Delta Lodge at Kananaskis,  
Alberta

Trails to Sustainability is a national environmental education conference designed for ALL teachers and educators, whether you teach in a school or elsewhere! This

event will help you learn more about the many paths to environmental stewardship and a vibrant society and economy. Join us in the spectacular setting of the Rocky Mountains' Kananaskis Valley, SW Alberta, Canada, to improve your professional practice and become enriched and revitalized as you spend time in nature and with friends and colleagues. For more

information visit: <http://www.trailstosustainability.ca>



## Groundhog Day Shadows Experiment

### Materials

- heavy cardstock/ construction paper
- light source (flashlight or desk lamp)
- popsicle sticks
- scissors
- tape
- white bulletin board

### Procedure

1. Cut out a groundhog like shape from the cardstock paper.
2. Tape the shape to a popsicle

stick

3. Shut the lights off in the room.
4. Turn on the flashlight and shine it directly on the sheet of paper.
5. Have the students hold their puppets up so the light is between the puppets and the sheet.
6. Observe. (Note: No shadow will be cast when the puppet is behind the lamp).
7. Have the students move their puppets between the light and the sheet.
8. Observe. (Note: A shadow

will be cast when the light is blocked by the puppet.).

9. Try to make the puppets larger or smaller.

### Explanation

Light tends to travel in a straight line until it strikes an object that it cannot pass through. Light around the outside of an object can travel past the object, but some of the light is still blocked and cannot travel through. Therefore, a shadow in the shape of the object that is blocking the light is cast on the surface that stands in the path the blocked light would have taken.



Will the Groundhog see his shadow this February 2?

## Secret Messages

### Materials

- kettle
- water (preferably distilled)
- measuring cup
- teaspoon
- cornstarch
- stirring spoon
- iodine (you can purchase iodine at a drugstore – CAUTION as it is poisonous)
- eyedropper
- cotton swabs
- writing paper
- empty bottle (labeled disappearing ink – do not drink)

### Procedure

1. Fill the kettle full of water and bring it to a boil.
2. Measure out one cup of water into the measuring

cup.

3. Measure one teaspoon of cornstarch.
4. Stir the cornstarch into the water until it is all dissolved. Set aside.
5. Mix the iodine solution.
6. Measure out one cup of water.
7. Add 7 – 10 drops of iodine to the mixture.
8. Pour into a labeled bottle – label it poison, do not drink. (a spray bottle will work well).
9. Pour the disappearing ink into a labeled bottle.
10. Carefully dip the cotton swab into the disappearing ink mixture and write your message on the writing paper. You will have to rewet your cotton swab several times as you write.

11. Allow the message to dry (in a secret location)!
12. Be patient, as it may take a day or so, but the ink will disappear.
13. Give your message to someone. Have the person who received the message try and figure out how to get the ink to reappear.
14. Have the person who received the message mix a few drops of the iodine and secret message solution together. What happens?

### What is going on?

When you mixed the cornstarch in the water, you created a basic solution. As the cornstarch solution dries, it will react with the air and eventually it will disappear. When you add iodine to starch, a bluish black solution appears. By adding the iodine to the paper where you wrote the message, the letters you wrote in the cornstarch solution should turn bright black and reappear.

Send a secret message to your admirer on Valentine's Day!

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

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