

The Science & Technology Hotline

Science Reporter 2006/2007

**Did you know?**

- There are 206 bones in the human adult body and 300 in a human child.
- The most dangerous animal in the world is the common housefly. They can transmit disease more easily because of their habits of visiting animal waste.
- 90 years ago cellophane was invented.
- The longest cells in the human body are motor-neurons. They can reach 1.37 metres (4.5 feet) long.
- The Stegosaurus Dinosaur measured 9.1 metres (30 feet ) long and had a brain the size of a walnut.
- The human eye blinks an average of 4 200 000 times a year.
- 2.5 centimeters (one inch) of rainwater is equivalent to 38.1 centimetres (15 inches) of dry, powdery snow.
- The heaviest human brain ever recorded was 2.3 kilograms (5 lbs. 1.1 oz.).
- The ears of a cricket are located on the front legs, just below the knees.
- Sound travels four times faster in water than air.
- The only letter not appearing in the periodic table is "j".
- Sterling silver contains 7.5% Copper.
- The moon is 27% the size of the Earth.
- Porcupines float in water.

Praxis – The Science & Technology Hotline and the Medicine Hat NEWS are proud to be able to present a brand new contest for the 2006/2007 school year. All Junior and Senior High Students in Medicine Hat and surrounding area are invited to try their hand at being a Science Reporter for a day.

Student submissions can be in the form of a written essay, report or a podcast. Let's get creative! The submission should be done to inform, explain, teach or express an opinion about an issue in the field of science and technology. When researching and writing your submission, think about the impact it may have on society, the environment or even yourself. If possible, your submission should also emphasize your topic's importance or connection to Canada, Alberta, and southeastern Alberta in particular. Suggestions for topics can be viewed on the Praxis website: [www.praxismh.ca](http://www.praxismh.ca).

1. Suggested Length

**Written submissions:**

- Are to be a maximum of 350 words in length, typed and preferably submitted in electronic format (on disk or e-mail).

A list of all references and resources must also be provided. **Podcasts (audio programme suitable for web posting):**

- Should not exceed 10 minutes in length.
- Must include "show notes".
- Can be in the form of an interview, mini radio show or an informative piece.

There must be evidence of research. Submissions should also include a contact phone number, school currently attending and mailing address. Send all submissions to: *Praxis, c/o 200 7<sup>th</sup> Street S. W., Medicine Hat, Alberta, T1A 4K1, p: 403.527.5365, e-mail:*

[praxis@praxismh.ca](mailto:praxis@praxismh.ca) .

2. Deadline(s)

Submissions will be accepted throughout the 2006/2007 school year. All submissions must be received no later than May 31, 2007 to be considered. Enter as often as you wish, but winning submissions will be limited to two per person for the year.

3. Judging criteria:

Submissions will be selected for publication based on the following criteria

- accuracy of information

presented

- originality/creativity
- spelling, structure, grammar etc.

judges' decisions will be final. Please note: All submissions must meet a minimum criteria for publication in the Medicine Hat NEWS.

4. Awards

Your efforts will not go without fame and fortune...

- The winning submission(s) will be published in the youth section of the Saturday edition of the Medicine Hat NEWS. The winning podcasts will also be published through a link on the Praxis website @ [www.praxismh.ca](http://www.praxismh.ca).
- Each published submission will receive a \$100 prize. A maximum of 20 submissions will be published this academic year.
- At the end of the academic year, all winning submissions have a chance to win a grand prize of an Apple iPod. One iPod will be awarded to a Junior High student and one iPod at the Senior High level.

**\*\*The grand prize winner's science teacher will receive a \$200 science gift certificate for use in their classroom.\*\***

**BASIC HIGH SCHOOL DROP-IN**

Attention junior high and senior high school students and parents! Medicine Hat College can help students who want to improve their grades. Get homework help from qualified teachers at Medicine Hat College in these core subjects:

**MATH  
ENGLISH LANGUAGE ARTS  
SOCIAL STUDIES  
SCIENCE/CHEMISTRY/BIOLOGY/PHYSICS  
STUDY SKILLS**

Date: Mondays and Wednesdays  
Time: 4 p.m. - 6 p.m.  
Place: Room B307, located on the 3rd floor of the library building

This valuable service is offered **free of charge**.

For more information contact:  
Nikki Stadnyk  
Tel: 502-8431  
Email: [nstadnyk@mhc.ab.ca](mailto:nstadnyk@mhc.ab.ca)



## Blood Red Indicator

### Materials

measuring cup  
rubbing alcohol (an adult must help you with this as it is poisonous)  
measuring spoons  
small jar with a lid  
marker  
coffee filters  
plastic bags  
cookie sheet  
turmeric powder (in the spice section at the grocery store)  
goggles  
disposable gloves  
scissors  
old newspaper  
tweezers

### Procedure

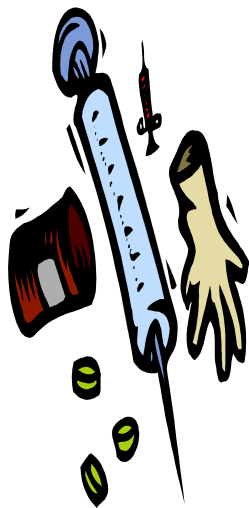
1. Take the coffee filters and cut into strips. You want strips that are approximately 10 cm long and 2 cm wide. Cut approximately 50 strips. If you want more or less, it is up to you.
2. Lay some old newspaper on the surface you are going to work on. The solution you are making may stain some surfaces.

3. Put on your goggles and disposable gloves.
4. Take the jar and label it base indicator **POISONOUS - DO NOT DRINK**. Set aside.
5. Measure out 80 mL of the rubbing alcohol. Carefully pour this into the jar. Put the lid on the jar and set aside.
6. Measure out 1 mL of the turmeric powder. Add to the rubbing alcohol in the jar.
7. Place the lid on the jar and shake well.
8. Remove the lid from the jar.
9. Using the tweezers, pick up one of the strips of the paper by one end. Carefully lower the strip of paper into the jar and allow it to absorb some of the mixture you made.
10. Once the strip is completely covered in the solution, place it on the cookie sheet.

11. Repeat with the remaining strips.
12. Allow the strips to dry.
13. Once the strips are dry, put in a plastic bag that you can seal up. You do not want them to get wet.
14. Try different products around the house to see if they are acids or bases. Some things you may want to test with your indicator paper include; baking soda solution, widow cleaner, ammonia, cream of tartar, shampoo, conditioner, antacids such as Tums® or Rolaids®, egg whites, pop, juices, vinegar. Which are acids and which are bases?

### Explanation

If you tested a base with your indicator paper, the paper should have turned bright red. If the solution you were testing was not a base, the paper should have remained yellow.



## Cabbage Indicator

**If the indicator turns red, it is an acid.**

**If the cabbage juice turns green, it is a base.**

### Materials

small head of red cabbage  
water (preferably distilled)  
heat source(kettle/hotplate/microwave)  
knife  
cutting board  
spoon  
heat proof container for the cabbage strainer

### Procedure

1. Cut up the head of cabbage into large slices.
2. Place the cut up cabbage into a bowl or pot.
3. Either pour the boiling water over the cabbage or fill a container with water and let the mixture come to a boil.
4. Once the cabbage has boiled,

remove from the heat.

5. Let the mixture sit for approximately 30 minutes. You will see the water turning purple.
6. Once the mixture is cool and the water is a nice deep purple colour, strain the cabbage out of the liquid.
7. Discard the cabbage.
8. You can put the indicator into small dropper bottles or in a large container and use a medicine dropper to dispense the liquid.
9. Test for the presence of acids and bases in some common household items.

### What can I test?

- baking soda dissolved in water
  - lemon juice
  - tap water
  - milk
  - pop
  - fruit juices
  - anything else you can think of
10. Take a small amount of the liquid that you would like to test and place it in a glass or on a plate.
  11. Add a couple of drops of the cabbage indicator.
  12. Observe what colour the solution turns.

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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