

November 2003
Newsletter

SCIENCE CRATE COMING TO MEDICINE HAT!

Plugging In: Explore the Potential of Alternative Energy

The Medicine Hat Public Library and Praxis have joined forces to present this exciting Science Alberta Foundation Crate. The program will run at the **Medicine Hat Public Library** from November 12 to December 19.

This interactive program encourages participants to understand the science and technology used in alternative energy and how electricity can be generated from alternative energy sources. An introduction to solar, wind, hydro and biomass energy is provided through interactive engaging activities. This program

takes 90-120 minutes to complete.

A more thorough list of the STS Outcomes is available upon request. As an overview, this crate meets science knowledge outcomes in Grade 5 (Electricity and Magnetism, Mechanisms Using Electricity), Grade 7 (Heat and Temperature), Grade 9 (Electrical Interactions and Innovations), Grade 8 (Mix and Flow of Matter), Grade 6 (Air and Aerodynamics), Grade 8 (Cells and Systems).

This crate also covers Social Studies topics in the following areas: Grade 4 (Alberta; It's Geography and People), Grade 8 (Geography of Canada), Grade 9 (Canada; Responding to Change).



Discover the Potential of Alternative Energy at this exciting Science Exhibit.

Starting November 12, the exhibit will be available Monday, Wednesday, Thursday and the occasional Friday. Advance registration is required. Please call Hilary or Michelle at the Medicine Hat Public Library to register—502-8525.

SCIENCE CHALLENGE 2002/2003

Don't forget about the Praxis—Science Challenge 2003/2004. This science challenge is open to all junior and senior high students in southeastern Alberta.

I would like to encourage students to write about

something that is interesting to them, or has affected them in some way. For example, one student wrote about Diabetes and how it has affect his life, another student wrote about heart rate monitors and how he uses them in his training for sports. The topic ideas are endless!

Just make sure you keep it to 300 words or less. For more ideas, visit the Praxis website @ <http://www.telusplanet.net/public/mhpraxis>.

Deadline for entries is the first day of the month throughout the school

Interesting Science Facts about Alberta:

- Alberta has the nation's first high voltage, fully operation fuel cell. The Northern Alberta Institute of Technology installed the fuel cell. It will combine hydrogen and oxygen to produce electricity and heat,. This should save energy costs of \$51,000 a year and reduce greenhouse gas emissions by 65%. Visit www.nait.ab.ca/fuelcell/ for more information.
- The National Institute of Nanotechnology is located at the University of Alberta. This facility focuses on finding ways to engineer molecules that are 50, 000 times smaller than a human hair. Visit www.nint.ca for more information.
- One of Canada's largest wind farms is located near Fort Macleod. It has 114 wind turbines, 75 megawatt electricity generating facility and can produce about 235, 000 megawatts of electricity per year. This is enough power for 32,000 homes. Visit www.transalta.com for more information.

Visit the Innovation and Science website @ http://www.innovation.gov.ab.ca/general/events/eve_001_1.cfm. for more exciting science information.

DISCOVERING SOUND

Discover how sounds change as they travel through different mediums.

Materials

string
tape
3 metal spoons
scissors
ruler/metre stick

Procedure

1. Measure out one metre of string and cut.
2. Lay the string out on a flat surface. Stretch it out.
3. Take one spoon and place it in the middle of your string.
4. Tie a knot around the spoon with the string. You may also want to put a piece of tape on it for extra reinforcement.

5. Take the second spoon and place it 10 centimetres away from the spoon you placed in the middle.
6. Tie it to the string, just as before.
7. Measure out 10 centimeters from the middle spoon in the other direction.
8. Place the third spoon on the string and tie the string to it as well.
9. Carefully lift up the spoons and hold one end of the string in one hand and the other end in your free hand.



10. Listen to the sounds the spoons make as they hit against each other.
11. Now, carefully wrap the string around your index finger(s) twice.
12. Stick your fingers in your ears.
13. Bend over and allow the spoons to hit together.
14. What do you hear now?

Explanation

The first time you listened to the spoons, the sound waves were traveling through the air. As the sound waves travel through the air, they lose strength and you hear a "tinny" sound.

The second time you listened to the spoons, the sound waves were traveling through a solid, the string. This in turn made the spoons sound much deeper.

HOW CAN YOU HEAR ME?

Without ears, you would be unable to hear. The world around you would be very different. Investigate how your outer ear and eardrum work together.

Materials

8 1/2 " x 11" sheet of paper
scissors
tape
plastic wrap
cake pan
rubber band
few grains of rice
wooden spoon
saucepan

What to do...

1. Roll the piece of paper into a cone shape.

2. Tape it so that it will not unroll.
3. Carefully place the cone up to your ear.
4. Listen to some sounds around you (i.e. the clock ticking, someone talking at a normal level).
5. Take the cone away from your ear and listen to the same sounds.
6. Can you hear better with or without the cone?
7. Now take a piece of plastic wrap, stretch it over the cake pan and secure it there with a rubber band.
8. Place a few grains of rice on top of the plastic wrap.
9. Hold the saucepan near the "drum" you made. Gently tap the saucepan with the

wooden spoon.

10. Watch what happens to the rice after you hit the saucepan.

What is going on?

The cone you made allowed you to hear much better. This is because the cone is able to gather more sound waves than just your ear alone. It then funnels them into your ear.

The second part of the experiment allowed you to see how an eardrum works. When you hit the saucepan with the wooden spoon, the sound waves moved through the air to the rice on the "drum" and made the rice vibrate. This is similar to how your eardrum would vibrate.



How do you hear?

For all of your science questions or needs, contact
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