

Celebrate Science!

A Newsletter of the
Windham Northeast Supervisory Union
District Science Committee



March 2009 Edition



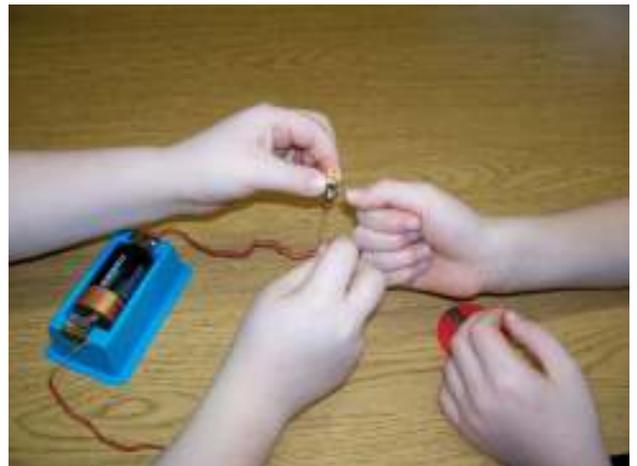
Created by Susan Steiner, Edited by Wendy Harty

The third and fourth grade

students in the East Wing at Westminster Center School recently discovered the excitement of electricity. Students began their study with a challenge, "See if you can make a light bulb light with just 2 wires, a bulb and a battery." After trying many different positions, the students were all successful at lighting the bulb!

Over the next few weeks, students explored the history of electricity uses, magnets, motors and electrical circuits. Among the many exciting discoveries made, a favorite was when student attached small strips of colored paper to the rotating motors to create some beautiful color designs. What a wonderful connection between science and art! Students are now enjoying further investigations of circuits using Snap Circuit kits on loan from the high school.

Westminster Center School



Third and Fourth graders at Westminster Center School working with electricity.

Fourth graders study magnetism and electricity. What is a magnet and how do magnets interact with each other and with other materials? These are just a couple of the questions students investigated in the study of magnetism at Rockingham Central Elementary School. Enthusiasm was high as students worked with several types of magnets, investigating their power to attract or repel through a variety of materials. Students generated questions for which we designed our own experiments. They found that the results were often quite different from what they predicted! What's next? Electricity!

Rockingham Central Elementary



5th graders at Grafton Elementary building models of Galileo's telescope.

Grafton Elementary



5th graders at Grafton Elementary building models of Galileo's

Fifth grade students at Grafton

Elementary studied the moon and other aspects of astronomy in their science class while they read about the history of astronomy in language arts class. As part of their work, they learned about Galileo's invention of the telescope, then worked with a local amateur astronomer to build a similar model.

Later, they worked in small groups to write procedural pieces describing how to make the telescopes. They then gave their descriptions to the sixth graders to see if they could assemble one based on their directions. The fifth graders observed the sixth graders during the process and then revised their procedures to make them more accurate and easier to follow. Through this integration of science and language arts, the fifth graders were inspired to read carefully, write clearly and accurately, and apply their knowledge of science in a meaningful way.

The Middle School



During the past few weeks the 7th and 8th grade students in the middle school have been studying the Periodic Table. They have been researching an element of their choice and then they produced a Brochure about their element. Their research will help them learn about the chemical and physical properties of the element as well as what role the element may have in our lives.

The creation of the brochure has a dual role in that students are also addressing technology standards with this project!

Student Brochures

Main Uses

Xenon is used in photographic flash lamps, stereoscopic lamps, high-intensity arc-lamps for motion picture projection and high-pressure arc lamps to produce ultraviolet light (solar simulators).

Inhalation can result in dizziness, nausea, vomiting, loss of consciousness, and death. Death may result from errors in judgment, confusion, or loss of consciousness which prevent self-rescue. At low concentrations, unconsciousness and death may occur in seconds without warning.

Knapp, Brian
 Publisher to Zimmerman,
 U.S. Published 2002
 Grolier Education
<http://www.grolier-online.com/catalog/701293/78843.html>
<http://www.saborchill.com/chemistry/vaseal/vasae/554.html>
<http://www.periodictable.com/Elements/54/index.html>
http://web1.carypcc.edu/chemistry/realist/StudentProjects/ElementWebSite/elementprojectmain_wjppg

XENON

Logan Moore

XE

Graphite is popular for writing, used in pencils.

Properties: Graphite

Physical Properties:
 In diamond form, graphite is the hardest natural substance on earth. Carbon is used in soil and other soil tests.

Atomic Number: 6
 Atomic Weight: 12.011
 Melting Point: 3527 K (3254 C or 5917 F)
 Boiling Point: 4098 K (3825 C or 6917 F)
 Density: 2.267 grams per cubic centimeter
 Phase at Room Temp.: Solid

General Information:
 Carbon is the sixth most abundant element in the world. Often, carbon is attached to coal deposits, but it is usually processed before commercial uses. There are many uses and many known carbon compounds ready. That is some general information about carbon.

Fun Fact:
 There are not 12 eggs in an carton, but 12 bananas in all, damn it!

Physical

Physical:
 "Xenon is a very rare, heavy gas."
 "It is colorless, odorless, and tasteless."
 "Xenon makes up 0.01% of the air."

Chemical

Chemical:
 Melting Point: -111.9 C
 Boiling Point: -107.1 C
 Atomic Mass: 131.29 g/mol
 Density: 5.9×10^{-3} g/cm³ at 20 C

Xenon

Element Name: Xenon
 Chemical Symbol: Xe
 Atomic Number: 54
 Atomic Weight: 131.29
 Period: 5
 Group: 8
 Family: Noble (Inert) Gas
 Usually Found In: Substances That Contain Fluorine

Discovery

"It was discovered in 1898 in England by British chemists Sir William Ramsay and Morris W. Travers."
 "It Was Discovered by evaporating liquid air."
 "It was discovered in 1898 in England by British chemists Sir William Ramsay and Morris W. Travers."
 "It Was Discovered by evaporating liquid air."

Xe

Uses and Impact

Carbon Compounds
 Carbon dioxide is a greenhouse gas. It is the most common greenhouse gas. It is a major component of air pollution. It is a major component of global warming. It is a major component of climate change. It is a major component of environmental degradation. It is a major component of environmental damage. It is a major component of environmental destruction. It is a major component of environmental devastation. It is a major component of environmental disaster. It is a major component of environmental catastrophe. It is a major component of environmental calamity. It is a major component of environmental tragedy. It is a major component of environmental disaster. It is a major component of environmental catastrophe. It is a major component of environmental calamity. It is a major component of environmental tragedy.

Carbon in its Different Forms
 Carbon has three main isotopes, graphite, diamond, and the newly discovered superhard form, lonsdaleite. These are the most popular greenhouse gases.

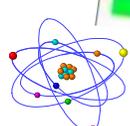
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<http://www.khanacademy.org/science/chemistry/atomic-structure-and-properties/a/carbon-a-simple-but-interesting-element>
<http://www.classicreference.com/ElementarySchool/BuildingBlocks/CarbonOpenings.rtf>
 Knapp, Brian. Carbon. Publishing Group Ltd. 2002.

Carbon

C

By Jamie Moore



he science of construction class spent two weeks recently learning how to make paper. We were asking: what is paper; what makes one kind of paper have different properties than another kind; how is paper manufactured; how is paper recycled; how can it be used to construct things. Paper is made by taking vegetable fibers, mashing them into a pulp with water, spreading the mash out on a screen, and pressing out the water. Many kinds of plant fibers can be used. The word "paper" comes from the *papyrus* plant, which is a grass used by the Egyptians to make paper. We made paper out of corn husks.

The High School



It starts with modest materials.



Turning plant fiber (corn husks) into pulp.



Pouring the pulp into a mold.



Gently starting to extract the water.



Pressing the water out overnight.

Since the plant fibers are nearly indestructible, they can be reused over and over again, so paper is easy to recycle.

Dyes can be added to change the color of paper. Some paper, like newsprint, absorbs ink quickly so it is not good for writing paper. Starch can be added when making paper to make it better for writing. We also tried painting it with a solution of gelatin. As a final project we made several sheets of paper and used it to make the shade of a Japanese-style candle lantern.

Harvey Nystrom



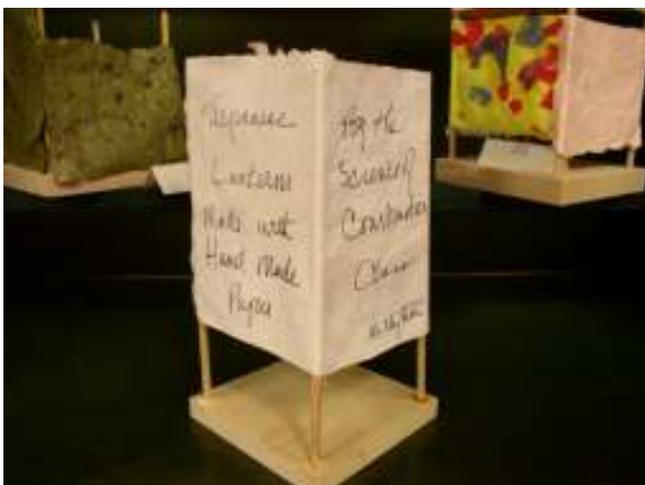
Looking and handling like paper, but not quite finished.



Student work drying.



Assembling the lantern with wall paper paste.



A display of the finished projects.

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