St. Louis American NEWSPAPER IN EDUCATION

The St. Louis American's award winning NIE program provides newspapers and resources to more than 8,000 teachers and students each week throughout the school year, at no charge.

Questions or comments? Contact Cathy Sewell
csewell@stlamerican.com or 314-289-5422

STEM
science, technology, engineering, and math

CLASSROOM SPOTLIGHT

Gateway Elementary School 4th grade teacher Mrs. Hopgood, looks over the work of students Landen Smith, Daegen Ndiaye, Elijah Thomas and Peyton Tate as they work a STEM project from the newspaper. *Photo: Wiley Price / St. Louis American*

Teachers, if you are using the St. Louis American's NIE program and would like to nominate your class for a Classroom Spotlight, please email: csewell@stlamerican.com.

SCIENCE CORNER

What Is Static Electricity?

Shuffling across the carpet, hand extended to open the door knob… zap! Did you know that is called static electricity? It's called static because the charges remain in one area for a while, instead of flowing into another area. They are ***static.*** Static electricity is all around us—when our hair gets charged, sticks up and won't cooperate or when our pant legs keep sticking together.

How does static electricity work? Remember that everything is made of atoms. Atoms have a proton, neutron, and electron. The electrons spin around the outside. Static electricity is created when two surfaces touch each other and the electrons jump from one surface to another—one object will have a positive charge, the other will have a negative charge. Similar to a magnet, items with different charges attract, while items with similar charges push away from each other. Want to see static electricity in action? Rub a balloon against your hair (this creates a charge) and see where the balloon will stick. Be sure to try the science experiment to see static electricity in action!

Learning Standards: I can read nonfiction text for main idea and supporting details.

SCIENCE INVESTIGATION

MAGICAL ELECTRIC CORN STARCH

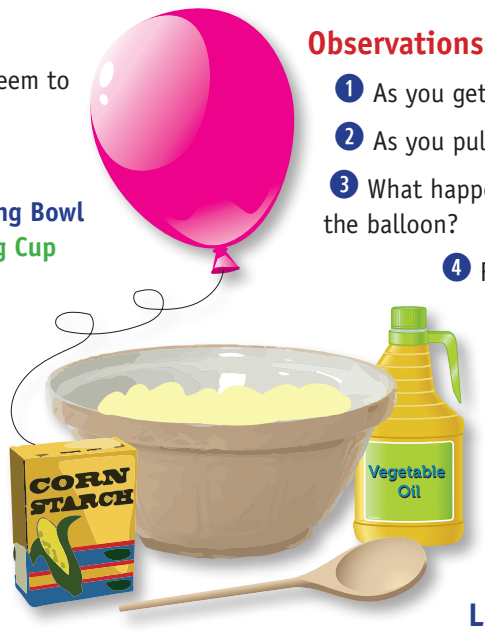
Background Information: In this experiment, corn starch will magically seem to jump.

Materials Needed:

- Corn Starch
- Vegetable Oil
- Mixing Bowl
- Large Spoon
- Balloon
- Measuring Cup

Process:

1. Pour ¼ cup cornstarch into the mixing bowl.
2. Add ¼ cup vegetable oil and stir. Mixture will begin to thicken.
3. Blow up a balloon and tie it closed.
4. Statically charge the balloon by rubbing it against your hair.
5. Place the charged balloon near a spoonful of the cornstarch mixture.



Observations:

1. As you get closer, what happens?
2. As you pull the balloon away, what happens?
3. What happens when you drip the cornstarch on to the balloon?
4. Repeat the 3 steps above to confirm your observations.

Analyze: When you generate static electricity with the balloon, it has a negative charge. The cornstarch has a neutral charge. When the neutrally charged item is light enough (like the cornstarch), the negative charged object will attract it.

Learning Standards: I can follow sequential directions to complete an experiment. I can analyze the results.

MATH CONNECTION

THE COST OF ELECTRICITY!

Electric power is measured in watts. If you know how many watts an appliance uses, you can calculate the cost to use the appliance. Electric meters measure usage in kilowatt hours (Kwh).

You can use the rate of electricity in your city to calculate the cost.

For example, if you have a 60 watt light bulb and you leave it on for 8 hours, it will use 480 watt hours of electricity. (60 watt X 8 hours = 480 watt hours.) To find the number of kilowatt hours, divide by 1,000. (480 divided by 1,000 = .48.) To calculate the cost of electricity, you'll multiply the rate of electricity in your area by the number of kilowatt hours used. If the rate is 11.3 cents per kilowatt hour, then running a 60 watt light bulb for 8 hours would cost $.113 x .48 = $.05

For more information on how to read your electric meter, visit:
www.glps.net/meterread.htm.

Learning Standards: I can add, subtract, multiply, and divide using a formula to solve a problem.

Complete this table for appliances in a home where electricity cost 9.8 cents per kilowatt hour.

Appliance	Hours Turned On	Watt Hours	Kilowatt Hours	Total Cost to the Nearest Cent
60 watt light bulb	16			
6,700 watt electric oven	2			
850 watt microwave oven	.10			
230 watt television	6.5			

DID YOU KNOW?

- Electricity can be made from wind, water, the sun, and even animal manure.
- The Brooklyn Bridge was the first bridge to be lit using electricity.
- Hydropower uses water to spin turbines to generate electricity.
- Electric eels create strong electric shocks up to 500 volts for self- defense and hunting.

SCIENCE STARS

AFRICAN AMERICAN EDUCATOR AND ENGINEER:

John Brooks Slaughter

John Brooks Slaughter was born in Topeka, Kansas, on March 16, 1934. His mother was a homemaker and his father worked several jobs to support the family. After graduating from Topeka High School in 1951, Slaughter enrolled at Washburn University, and then transferred to Kansas State University. He earned his bachelor's degree in engineering in 1956. Five years later, he earned his PhD in engineering from UCLA, and 10 years after that he earned another PhD in engineering sciences from University of California, San Diego.

In 1960, Slaughter began his career at the Navy Electronics Laboratory in San Diego. Fifteen years later, he became director of the Applied Physics Lab at the University of Washington. In 1977, he went to work for the National Science Foundation. After serving as Academic Vice President at Washington State University, he became chancellor at the University of Maryland, College Park. While there, Slaughter developed incentives to encourage and recruit African-American students and staff. From 1988-1999, Slaughter was president of Occidental College in Los Angeles, before transferring to the University of Southern California to accept his position as Melbo Professor of Leadership in Education. In the summer of 2000, Slaughter was named CEO and president of The National Action Council for Minorities in Engineering, Inc.

For more information about John Brooks Slaughter go to: http://www.thehistorymakers.com/biography.

Slaughter holds many honorary degrees and awards. In 1987, he received the first U.S. Black Engineer of the Year Award. Two years later, he received UCLA's Medal of Excellence. In 1997, he received Martin Luther King, Jr.'s National Award. In 2004, he received the Arthur M. Bueche Award from the National Academy of Engineering.

Learning Standards: I can read a biography about a person who has made contributions in the fields of science, technology, and mathematics.

MAP CORNER

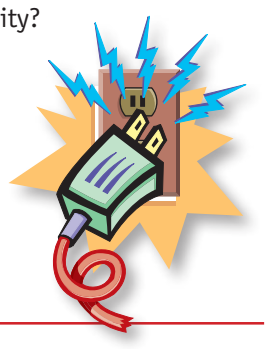
Use the newspaper to complete these activities to sharpen your skills for the MAP test.

Activity One — Word Choice:

The newspaper is a great resource for building your vocabulary. Look through the newspaper and find 10 words you can use to quiz a friend. Write the word, the headline of the story, the section, and the page number. Have your friend use context clues to guess the meaning of the word. Use a dictionary to verify the meaning of the word.

Charge
ARC
Blackout
CURRENT
Brownout

Activity Two — Energy Awareness: Use the newspaper to find five examples of how you use electricity in your daily life. Are there ways to complete these tasks without using electricity?



Learning Standards:
I can use the newspaper to locate information. I can build vocabulary using context clues. I can make text to text connections.

Content—Jennifer Wirthwein • Design—Beth Sharpe

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