



# 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

### Premier Charter School 8th grade teacher Carly McAdams-Velten

shows students Javier Weibley, Dominic Fuchs, Rhema Simmons and Sandy Cucue how to use the newspaper's NIE page for STEM ideas.

Photo by Wiley Price / St. Louis America



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: nie@stlamerican.com.

## SCIENCE CORNER

### What is Metabolism?

Metabolism is the process of converting the food we eat into energy through a series of chemical reactions. The thyroid gland produces hormones to determine how fast or slow this process takes place. The pancreas secretes hormones to determine the body's metabolic activity. Your basal metabolic rate (BMR) is the rate your body burns calories at rest. People with a low BMR tend to gain weight more easily. The more muscle you have, the higher your BMR rate will be. If you want to burn more calories while you sleep, you need to lose fat and add more lean muscle. Get active!

What can you do to help the process? First, choose your calories wisely. Even though a

chocolate bar has the same number of calories as a banana with yogurt, your body processes those calories differently. Choose foods with a lot of nutrients for your calories—fresh fruits, vegetables, dairy, lean protein, and whole grains. Aim for 60 to 90 minutes of activity each day to boost your metabolism. Drink plenty of water to flush wastes from your body. And finally, get plenty of sleep. This allows your body to build and repair cells.

#### Top Metabolism Boosting Foods



**Learning Standards:** I can identify main idea and supporting details in non fiction text. I can make text-to-self connections.

## SCIENCE INVESTIGATION

### Plastic Milk

In this experiment, you will use chemistry to see the different components of milk. You will turn milk into a solid.

- Materials Needed:**
- Skim Milk • White Vinegar • Microwave Proof Bowl
  - Strainer • Measuring Cup • Measuring Spoons

#### Procedure:

- 1 Add 4 teaspoons of white vinegar to 1 1/2 cups of skim milk.
- 2 Microwave the mixture for a minute.
- 3 After a minute, the milk and vinegar will be separated into two parts, a liquid and a solid. If it has not separated, try microwaving the mixture for another 15-20 seconds.



- 4 Stir the milk, and the solid curds will become a "blob."
- 5 When you strain the liquid off, you can make the blob into one big lump.
- 6 Let it cool off before you play with it. It feels like rubber. The protein in the curds is what makes it act like rubber. You can form the blob into shapes. If you leave it out, it will harden.

**Beware:** The smell is very foul!

**What happened?** By adding the vinegar, you have created a chemical reaction that separated the milk into two parts, a solid (curds) and a liquid (whey).

**Learning Standards:** I can follow sequential directions to complete an experiment. I can draw conclusions and analyze results.

## MATH CONNECTION

### FOOD AND ACTIVITY CHALLENGES

Keep a food journal for one day. Write down everything you eat and drink. At the end of the day, calculate the number of calories you consumed. What nutrients did you get? What changes do you think you should make?

As a class, keep track of your daily activity /exercise minutes. Set a goal and work to meet it. Brainstorm ideas of ways to add exercise and fun activity to your day.

Survey 20 people regarding their activity level. 1 = inactive and 10 = very physically fit. Graph the results.



Bring in three food labels to class. Use them to write math problems for your classmates to solve. Trade labels and answer the questions asked.

Many fast food menus are trying to offer more nutritious choices. Use a fast food menu to showcase unhealthy vs. healthier choices. Create a poster with the amount of calories, fat, and sodium in an unhealthy meal vs. a healthier meal choice at the restaurant.

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

French Fries (Large) Compared							
Fast Food Restaurant	Type	Serving Size (g)	Calories	Total Fat (g)	Saturated Fat (g)	Trans Fat (g)	Carbs (g)
McDonald's	Regular	170	570	30	6	8	70
Burger King	Regular	160	500	28	6	6	57
Burger King	Salt Not Added	160	500	28	6	6	57
Wendy's	Regular	Unknown	540	26	4	1	68

## DID YOU KNOW?

According to Melanie Warner, author of "Pandora's Lunchbox," 70% of our calories now come from processed food.

The FDA has approved over 5,000 additives to be allowed in our food.

Processed foods, especially those with added sugar and salt, are addictive.

## SCIENCE STARS

### African American Biochemist William C. Davis



William Davis was born August 1926 in Georgia. When he was 15, he moved to New York City to live with his brother. He graduated from Dwight High School in 1945, then attended New York University before going to Talladega College in Florida. Davis left college to serve as 2nd Lt. of

Engineers in the Korean War. He did return to Talladega College, where he earned his bachelor's degree in chemistry in 1956. Two years later, he earned a master's degree in organic chemistry from Tuskegee Institute. In 1965, he earned his PhD in biochemistry from the University of Idaho.



Davis has worked as a research director at Physicians Medical Laboratories. He specialized in the chemistry of food while there. He worked to improve such foods as the potato chip, instant potatoes, and soft serve ice cream. He also developed an organic glue that holds particle board together.

Davis was a visiting scientist at Washington D.C.'s George Hyman Research Institute and a research associate at the University of Texas Health Science Center. Next, he worked as a chemistry professor at St. Philip's College in San Antonio, Texas.

Davis is a member of the American Chemical Society, Health Physicist Society, Society of Nuclear Medicine, and the American Association for the Advancement of Science. He is the chair of the National Sciences Department and director of the Renewable Energy at St. Phillips College. The science building at St. Philip's College is named in his honor, he received the Tuskegee Institute's George Washington Carver fellowship, the U.S. Armed Forces Purple Heart, and he was inducted into the Texas Hall of Fame in 2000. His research has been published in the *Journal of Medical Technology* and the *European Journal of Pharmacology*.

**Learning Standards:** I can read about an African American who has made strides in the STEM fields. I can make text-to-text connections.

## MAP CORNER

Enjoy these activities that help you get to know your St. Louis American newspaper.

**Activities — Vowel Scavenger Hunt:** Cut out words

from the newspaper and count the number of vowels and consonants in each word. Paste the words on a separate piece of paper and write the fraction of vowels for each. Reduce the fractions, if possible. For example, cat = 1/3 (1 of the 3 letters is a vowel).

Newspaper = 3/9 or 1/3.



**celebration**



**Purchasing a House:** In the classified section, find a house that you would like to own. If you paid \$500 a month towards the house payment, how many years would it take to buy the house?

**Learning Standards:** I can use the newspaper to locate information. I can identify and reduce fractions. I can add, subtract, multiply, and divide to solve a problem.

This special Newspaper In Education initiative is made possible, and delivered to classrooms, through The St. Louis American Foundation and its NIE Corporate Partners:

