



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.

STEM
science, technology, engineering, and math

Questions or comments? Contact Cathy Sewell
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CLASSROOM SPOTLIGHT

Russell Elementary School principal, Dr. Strauther, helps students Haylei Martin, Marcus Hester, Miracle Harris and Ma'Kenzie Gilbert work a science experiment found on the NIE STEM page of the newspaper. Photo by 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: nie@stlamerican.com.



SCIENCE STARS

African-American Mechanical Engineer & Inventor
Jerry Shelby

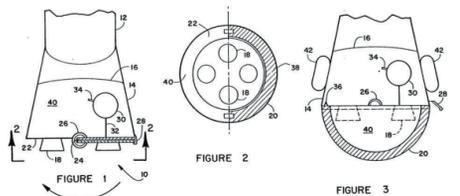


Jerry Shelby was born in New Orleans on June 23, 1950. When he was 18, he dropped out of high school to join the Marines and fight in the Vietnam War. During a mission, Shelby lost his left leg and suffered serious harm to his right arm: muscle loss, thick scarring, and tissue damage.

Shelby says, "At 19, I was home in New Orleans. I couldn't walk very well with my new wooden leg and I couldn't write very well because of the injuries to my right arm."

To learn to reuse his arm, he took drafting classes while earning his GED. Next, he enrolled in Southern University in Baton Rouge, LA, to earn his mechanical engineering degree. He later earned his master's degrees in management and business administration. After earning his degree, he worked for IBM in Texas, and then for General Dynamics, in California, before heading back to New Orleans to work at NASA's Marshall Space Flight Center.

On July 12, 1994, he received U.S. patent #5,328,132 for his engine protection



system for a recoverable rocket booster invention. When rockets are propelled in to space, they will lose their boosters. Shelby's invention allows these boosters to have extra protection so that they can be reused. This reusable device features an inflatable air bag hinged at opposite sides, with springs that force the bag open. This bag is in a "stowed" position during launch. Pressurized gas forces it open. As the bag inflates, it creates a seal. This seal prevents water from entering the engine as the booster becomes submerged in water.

Shelby was one of seven Purple Heart recipients inducted into the honor roll of the Military Order of the Purple Heart, George A. Rauh Chapter 2201.

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

SCIENCE CORNER

All About Rockets

Did you know rockets are faster and more powerful than airplanes or helicopters? In fact, they have enough power to travel through the atmosphere into outer space. When they travel at speeds of 28,000 km/h, they enter orbit.

The shape of rockets continues to change and evolve to improve their effectiveness. The shape of the fins on the bottom of the rocket have become wider to help the rocket stay on course. Fuel is burned with oxygen in a chamber. As the gases heat up, they expand and stream



backwards. This the rocket forward. travel. That is

creates a thrust, which launches Rockets require a lot of fuel to give them plenty of room for all of the needed fuel.

For more advanced information on rockets, visit: <http://sciencelearn.org.nz/Resources/390-rockets-and-thrust>.

Learning Standards: I can read nonfiction text for main idea and supporting details. I can make text-to-world connections.

SCIENCE INVESTIGATION

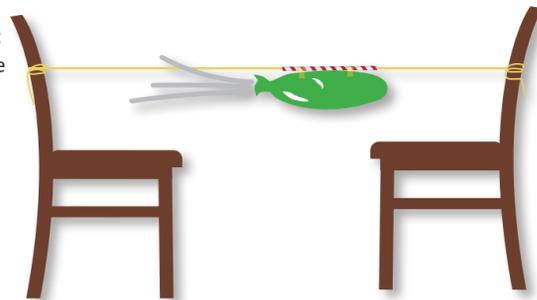
BUILD A BALLOON ROCKET!

Background Information: In this experiment, you'll create a thrust of energy that will propel a balloon forward.

Materials Needed:
• Balloon • 3 Meters Length of Kite String • Plastic Straw • Tape

Process:

- 1 Thread one end of the string through the straw.
- 2 Tie each end of the string between two solid supports such as a chair, table leg or door knob, making sure it is strung tightly. This creates your string track.
- 3 Blow up the balloon but do not tie it.



- 4 Hold the opening of the balloon closed with your fingers, tape one side of the balloon to the straw so that it hangs horizontally below the string.
- 5 Countdown to launch and let the balloon go.
- 6 Observe as your

balloon rocket travels across the string track.

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

MATH CONNECTION

WEIGHT IN SPACE!

Use your math skills to answer these questions.

- 1 The gravity of the Moon is 17% of Earth's gravity. To calculate your weight on the Moon, multiply your weight by 0.17. What is your weight on the Moon? _____
- 2 Using the same formula (multiply weight by .17), if a dog weighs 35 pounds on Earth, what would it weigh on the Moon? _____
- 3 How much would a 5 pound bag of sugar weigh on the Moon? _____

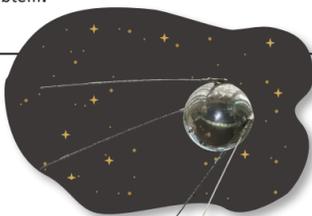


4 If you weighed 25.5 pounds on the Moon, what would you weigh on Earth? _____

For some math activities from NASA, visit: <http://spaceplace.nasa.gov/math-activities/en/>.

To find your weight in different worlds, visit: <http://www.exploratorium.edu/ronh/weight/>.

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



Did you know that data from satellite instruments are used by fishermen to find areas where fish are most likely to be found? Fish find food in zones where cold and warm water mix.

DID YOU KNOW?

- ▶ NASA became operational on October 1, 1958 — one year after the Soviets launched Sputnik 1, the world's first artificial satellite.
- ▶ The United Nations declared October 4-10, 1999, as World Space Week. These dates commemorate the launch of Sputnik in 1957 and the 1967 Outer Space Treaty.
- ▶ On March 16, 1926, Dr. Robert H. Goddard successfully launched the first liquid fueled rocket.

The following facts are from www.nasa.gov:

MAP CORNER

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

Activity One — Context Clues: Find 10 unfamiliar words in the newspaper. First, use your

analogy
[ub-nal-ub-jee]

context clues to guess what the word means. Next, use the dictionary to write

linguistics
[ling-gwis-tiks]

a synonym and antonym for the word.

Activity Two —

Alliteration: Alliteration is the repetition of first consonant sounds in words close to each other. For example, "The Sweet Smell of Success" Find 3 examples of alliteration in the newspaper. What is the purpose of alliteration? Choose a consonant and use it to create an alliterated headline.

Learning Standards: I can use the newspaper to locate information. I can apply context clues and use dictionary skills. I can evaluate the purpose and use of alliteration. I can create alliteration.



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

