



## 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  
csewell@stlamerican.com or 314-289-5422

### CLASSROOM SPOTLIGHT

#### Walbridge STEAM Academy 3rd grade teacher Cassandra Thornton

works with students Keyshaun Brown, Kameron Noldon and Damiya Bevely on how to build a bridge using the newspaper's education page. *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](mailto:nie@stlamerican.com).



### SCIENCE STARS

#### AFRICAN AMERICAN METEOROLOGIST: Samuel Williamson



Samuel Williamson was born in Tennessee on March 5, 1949. After graduating from W.P. Ware High School in 1967, he attended Tennessee State where he received his bachelor's degree in mathematics. Nine years later, he earned his master's degree in management from Webster University.

In 1971, he began his career with the U.S. Air Force's

Air Weather Service as an atmospheric scientist. Six years later, he joined the National Oceanic and Atmospheric Administration (NOAA), where he worked to help create the Doppler Weather Radar System. This is the system that uses radars to detect precipitation and calculate its motion and intensity. This system is important because it allows meteorologists to warn citizens about upcoming storms so that they can prepare and be safe.

Williamson later served as the Senior Staff Associate for the National Science Foundation, where he worked to develop science education. He also served on the U.S. House of Representatives' Committee on Science. In 1998, he became the Federal Coordinator for Meteorological Services and Supporting Research. He used this opportunity to make positive changes in the use of aviation weather, space weather, wildland fire weather, weather for surface transportation, and tropical cyclone research.

Williamson is a member of the American Meteorological Society, the Montgomery College Foundation Board, the American Association for the Advancement of Science, National Guard Association, Committee for the Environment, Natural Resources, and Sustainability (CENRS), and the National Science and Technology Council. He was elected as a Fellow of the African Scientific Institute. In 2010, he received the Presidential Rank Award, and the NOAA Distinguished Career Award.

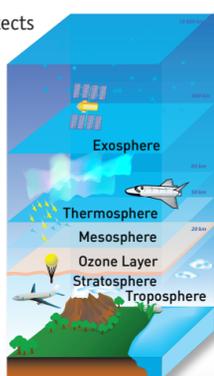
**Discuss:** An atmospheric scientist has a very important career. Explain why. If you are interested in this career, what could you do now to start learning about it?

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

### SCIENCE CORNER

#### What Is The Atmosphere?

The atmosphere is a thick layer of air that protects us from the sun's radiation, falling meteors, and toxic gas. The atmosphere consists of five layers: troposphere, stratosphere, mesosphere, ionosphere and exosphere. The layer closest to the earth is the troposphere. It is 11 miles thick and it controls our weather. The next layer is the stratosphere, which is 30 miles high, contains the ozone layer, which protects us from the sun. Next, is the mesosphere (about 50 miles from Earth), which is -180 degrees Fahrenheit. 430 miles above the earth is the ionosphere,



which is considered outer space. Ions in the ionosphere create an electrical layer used to transmit radio waves. Extending more than 6,000 miles is the final layer, the exosphere. The atmosphere is approximately 75% nitrogen and 25% oxygen.

**For More Information, Visit:**  
<http://www.kidsgeo.com/geography-for-kids/0040-introduction-to-our-atmosphere.php>

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

### SCIENCE INVESTIGATION

#### BUILD A PORTABLE CLOUD

##### Background Information:

In this experiment, you will see how moisture, temperature, and condensation affect cloud formation.

##### Materials Needed:

- Gallon Jar • Hot and Cold Water
- Lamp • Rubber Glove
- Food Coloring • Matches
- Rubber Band

##### Process:

- 1 Pour  $\frac{1}{2}$  cup cold water into the jar. Add a few drops of food coloring and stir for one minute to allow some water to evaporate.
- 2 Place the plastic glove over the jar—with the fingers down in the jar and the open end of the glove over the mouth. Use the rubber band to secure the glove.
- 3 Adjust the lamp so that it shines on the jar and turn on the light.



- 4 Place your hand in the glove and quickly pull it outward without disturbing the seal. Record your observations.
- 5 Now quickly push your hand back into the glove and record your observations.
- 6 Carefully remove the glove from the lid, drop a lit match into the jar, and seal it with the glove placed in the previous position.
- 7 Put your hand into the glove, pull it out quickly, and record the observations.
- 8 Repeat the entire process using hot tap water. What differences do you notice?

**Analyze:** How does temperature affect cloud formation?

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

### MATH CONNECTION

#### THE PROBLEM WITH WEATHER

Solve these weather word problems. Remember to look for clue words and check your answer.

- 1 A hurricane has wind speeds as low as 75 miles per hour (mph). If the wind is blowing 87 mph, how many fewer mph until it is no longer considered a hurricane?
- 2 Sixteen inches of rainfall fell last year. Twelve inches fell this year. What is the total number of inches of rainfall over the past two years? \_\_\_\_\_ What is the average of the two numbers? \_\_\_\_\_

- 3 The temperature in New York City is 43 degrees. In San Francisco it is 70 degrees. What is the difference in temperature between New York and San Francisco? \_\_\_\_\_
- 4 If a cloud is 18 feet long, how many inches long is it? \_\_\_\_\_
- 5 If snow is falling at a rate of  $\frac{3}{4}$  inch per hour, how much snow would you have in 5 hours? \_\_\_\_\_

**Learning Standards:** I can read word problems to determine clue words. I can add, subtract multiply, and divide to solve a problem.

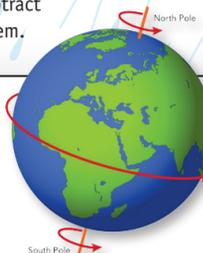
### DID YOU KNOW?

The Earth's molten iron core creates a magnetic field—extending from the surface of the Earth out several kilometers. This is known as the magnetosphere.

The Earth's atmosphere extends out to 10,000 km.

Earth doesn't take 24 hours to rotate on its axis; it actually takes 23 hours, 56 minutes and 4 seconds.

For more facts about the atmosphere, visit <https://easyscienceforkids.com/all-about-the-atmosphere/>.



### MAP CORNER

Use the newspaper to complete the following activities.

##### Activity One — Conflict:

Locate a news story that has a conflict. What is the conflict? Is it an internal conflict or an

external conflict? Is there an effort to resolve the conflict?

**Activity Two — Weather Watch:** Are there any cause/effect news stories about weather? Can you find an

article that has timely information related to weather—for example: weatherizing your house, the importance of sunscreen, gardening tips for the spring, etc.

##### Learning Standards:

I can use the newspaper to locate information. I can identify conflict and cause/effect relationships.

Ready to weather the spring storms?



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

