Mrs. Dixon’s 5th Grade Class
Patrick Henry Elementary
5th Grade Class
Mrs. Dixon

Inventor, Physicist, and Mathematician: Valerie Thomas

Valerie Thomas was born in May of 1943. At a young age, she was fascinated with electronics and enjoyed watching her father take things apart and put them back together. When she was 8 years old, she checked out a book called “The Boy’s First Code on Electronics” in hopes her dad would help her with her project. Her dad did not encourage this interest because, during this time, women were often discouraged from pursuing careers in math and science. Thomas received no encouragement from her private all-girl school to pursue these topics, but chose to take all of the advanced math and science courses that she could. Thomas attended Morgan State University and earned a degree in physics. At that time, she was one of only two women that majored in physics.

After graduation, Thomas worked as a mathematician/data analyst for NASA. She was one of the first women to work in the Landau Solid State Group. She conducted research on Halley’s comet, Voyager satellite development, and ozone hole studies. On Oct. 21, 1980, she received a patent for the Halley transmitter. This device uses a concave mirror on the transmitting and receiving end to produce optical images. The Halley transmitter paved the way for our current technology.

Thomas mentors young students through the National Technical Association (NTA) and Science Mathematics Aerospace Research and Technology (SMArT).

Learning Standards: I can read a biography about a person who contributed to the fields of math, science, and technology.

STEM

Science, technology, engineering, and math

Science Corner

How Many Types of Mirrors Are There?

Did you know there are many types of mirrors? reflection is curved to bulge outward, it is called a convex mirror. A concave mirror creates an image that is smaller than its actual size and slightly distorted. Concave mirrors are also sometimes used in dressing rooms because they project an image that is taller and more slender. Concave mirrors curve inward, like the shape of a spoon. Concave mirrors create images by bouncing light from their curvature to a focal point in front of them. Although this image appears upside down from a distance, it will flip and magnify when you are closer. Concave mirror designs have been used in shaving mirrors and lighting the Olympic torch.

Two-way mirrors are made by lightly coating one side of a sheet of glass with a very thin, reflective material. When the coated side faces a lighted room, some of the light reflects and some goes into a dark room behind the mirror, making it possible to see into the lighted room but not out. If you have seen a television show or movie where police interview a witness while others watch the interrogation, you have seen one of these mirrors. Plane mirrors are simple mirrors such as a bathroom mirror. The images they reflect look like photographs.

Learning Standards: I can identify different types and purposes of mirrors.

Math Connection

How to Classify Angles

A component of mathematics is to classify types of angles. Angles can be classified in one of four ways: a right angle measures exactly 90 degrees, an acute angle measures less than 90 degrees, an obtuse angle measures more than 90 degrees, and a straight angle measures exactly 180 degrees.

Looking at the angles below and classify them as right, acute, obtuse, or straight.

Learning Standards: I can describe the four types of angles to identify angles.

Did You Know?

According to estimates by the Environmental Protection Agency (EPA), everyday U.S. businesses and consumers can generate 72 million to 94 million pounds of E-waste each year, and 355,000 cell phones.

The National Safety Council predicts that between 115 million and 650 million computers will become obsolete within the next five years.

E-waste is growing at two to three times the rate of any other waste source. Already, electronics products account for more than 40 percent of the total found in landfills.

Some computer components can be reused in assembling new computer products, while others are reduced to metals that can be reused in applications as varied as construction, furniture, and jewelry.

Bangladesh Garment Workers Changes

- Wage Increases
- Better Working Conditions
- Tackled Housing
- Improved Standards
- Increased wages prices of goods to meet increased costs
- Health Care

Tougher Standards

- Safer Buildings
- Less Flammable
- Improved ventilation
- Less exposure to chemicals
- Safer buildings
- Better ventilation
- Increased awareness of workplace hazards
- Improved worker education

Increased sales prices of goods to meet increased costs

Health Care

MAP CORNER

ST. LOUIS AMERICAN

Valerie Thomas had to overcome discrimination due to her race and her gender as she pursued her passions in science, technology, and mathematics. Look in the newspaper for examples of people or groups of people being treated unfairly. You can look at articles, photos or cartoons. Write down the points you see that identify unfair conditions or treatment. Once you have done that, write down some ways that this unfair treatment can be changed. Write a fully developed paragraph outlining the issues presented in the article or photo and how changes can be made to improve the situation presented. Be sure to use specific examples from your sources to support your idea. Share your information with your classmates.

Learning Standards: I can write a paragraph that explains purpose and audience. I can identify a problem, and a solution. I can use supporting details.

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