

THE ST. LOUIS AMERICAN

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The St. Louis American is proud to partner with Hazelwood, Ferguson-Florissant, Normandy, and the St. Louis Public School Districts to provide this classroom tool for STEM education for students in 3rd, 4th and 5th grades, with content based on Missouri Learning Standards.

STEM

science, technology, engineering, and math

CLASSROOM SPOTLIGHT

Mullanphy Investigative Learning Center 5th grade teacher Lewis Nager

works with students Raelena McKinney and Kevin Long, as they do STEM work in the classroom. The school is in the St. Louis Public Schools district. 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: nie@stlamerican.com.

SCIENCE STARS

AFRICAN AMERICAN ZOOLOGIST & ECOLOGIST:

Shirley Malcom



Shirley Malcom was born on September 6, 1946, in Birmingham, Alabama. As a young child she knew she wanted to be a doctor. She worked hard in school and graduated as one of the top students in her class. Malcom earned her bachelor's degree in zoology from the University of Washington and her master's degree in zoology from the University of California at Los Angeles. Then, she earned her doctorate degree in ecology from Pennsylvania State University.

Malcom taught biology at both the high school and university level, working at the University of North Carolina. After teaching, she became a program officer for National Science Foundation. In 1994, she was appointed to the National Science Board by President Bill Clinton and became a fellow of the American Academy of Arts and Sciences. From 1994 to 2001, she was named to the President's Committee of Advisors on Science and Technology. From there, Malcom went to work for the American Association for the Advancement of Science, working to increase opportunities for women, minorities, and those with disabilities in the STEM professions.

Malcom addressed students in Dar es Salaam, in 2010. Photo courtesy U.S. Embassy, Dar es Salaam.



Malcom addresses Ridhwa Seminary students in Dar es Salaam, in 2010. Photo courtesy U.S. Embassy, Dar es Salaam.

She has won many awards, including the Alumna Summa Laude Dignata Award from the University of Washington and the Public Welfare Medal of the National Academy of Sciences. Malcom has fifteen honorary degrees and has participated in many national committees that focused on scientific education and literacy. Finally, she has authored several reports on engaging women and minorities in science.

Discuss: Malcom has worked as an administrator of education and has a background in zoology. What do you think a zoologist does? What topics does a zoologist study? Dr. Malcom also received her Ph.D in ecology. How is ecology different than zoology? How would you describe the ecology of your neighborhood?

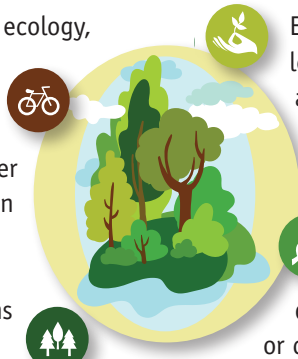
Learning Standards: I can read a biography to learn about a person who has made contributions to the fields of science, technology, and math.

SCIENCE CORNER

What Is Ecology?



Shirley Malcom had a PhD in ecology. What is ecology, you may ask. Ecology is the relationship of living things to each other and to what's around them. So, if you are learning about what kinds of relationships fish have with other plants and animals in their neighborhood, then you are learning about ecology. Did you know the word "ecology" comes from Greek words meaning "study of the household?" That means that ecology is the study of the "household" of living things, which includes their neighbors and their neighborhood (their habitat). Ecology includes not only how living things interact with each other, but how they interact with their physical environment: things such as climate, water, and soil.



Ecologists are scientists who study ecology. They learn about living things by observing them and analyzing what happens. They apply the scientific method. There are many different jobs in ecology. Some ecologists study a specific species or habitat. Some study the behavior of a species to see how it interacts with other organisms and the environment. They might study many different species that either depend on each other or compete with each other for food and space.

To Learn More About Ecology, Check Out: <http://www.ecokids.ca/pub/index.cfm>

Learning Standards: I can read nonfiction text to find main idea and supporting details to learn about a topic.

SCIENCE EXPERIMENT

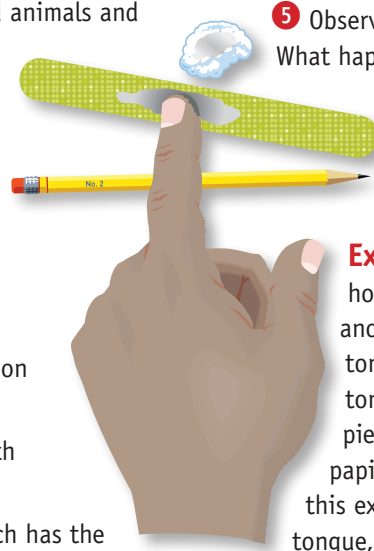
HOW TO CLEAN YOUR FUR—IF YOU HAD ANY!

Shirley Malcom was a zoologist, who studied animals and their behavior. In this experiment, you will see a process that simulates the method an animal uses to clean its fur.

Materials Needed: Cotton Ball • Fingernail File • Pencil

Process:

- Rub the side of the sharpened end of a pencil across the end of your finger to collect a layer of graphite (pencil lead) on your fingertip.
- Gently rub a fingernail file back and forth across the graphite layer on your finger.
- Observe your fingertip and the file. Which has the most graphite present?
- Rub the fingernail file back and forth across a cotton ball.



- Observe the surface of the cotton ball and the file. What happens?

Think About It: This experiment might remind you of how one of your pets keeps itself clean. Which animal uses its tongue to clean its fur?

Explanation: This experiment demonstrates how a rough surface can be used to clean another surface. Cats use a rough surface (their tongue) to lick their fur and clean it. A cat's tongue feels rough because of the coarse pieces of skin (papillae) on its tongue. The papillae are similar to the fingernail file used in this experiment. When the cat rubs its fur with its tongue, the papillae remove dust, dirt, and loose hair.

Learning Standards: I can follow directions to complete an experiment. I can make observations and analyze results.

MATH CONNECTION

ECOLOGY-BASED MATH PROBLEMS!

Scientists are excellent problem solvers. Use your problem solving abilities to answer these ecology based word problems.

- You are planting 48 flowers and want them to grow in rows. If there were 8 flowers in each row, how many rows would you have? _____ If there were 4 flowers in each row, how many rows would you have? _____ If there were 12 flowers in each row, how many rows would you have? _____



- During the summer, you earn money by mowing lawns. If you mow 6 lawns an hour, and you have 21 lawns to mow, how long will it take you? _____
- If you want to build a fence to enclose your flower garden, and your garden is 6 feet wide and 9 feet long, how many feet of fencing material do you need? _____

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

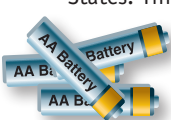
DID YOU KNOW?

Each person throws away approximately four pounds of garbage every day, yet 84 percent of all household waste can be recycled.

Each year billions of used batteries are thrown away in the United States. This constitutes 88% of the mercury and 54% of the cadmium deposited into our landfills.

It takes 90% less energy to recycle aluminum cans than to make new ones and 5 billion aluminum cans are used each year.

Computers pose an environmental threat because much of the material that makes them up is hazardous. A typical monitor contains 4-5 pounds of lead.



MAP CORNER

Use the newspaper to complete these activities:

Activity One — Examine Dialect:

As a class, talk about your area's dialect. Look for examples of local dialect in the newspaper. Pay special attention to local news stories and advertisements. Discuss examples found.

Activity Two — Meeting People's Needs:

Locate pictures of groups and organizations that help meet people's needs. Cut and paste the picture on a piece of paper. Write an explanation that explains how each group or organization meets the needs of the people.

Learning Standards: I can state a claim and support it with evidence. I can use the newspaper to locate information.



You say greasy, I say greazy.

You say you, I say youse. He says y'all.

You say wash, I say warsh.



St. Louis Area Foodbank helps fight hunger in St. Louis City and County, as well as in 26 area counties.

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



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