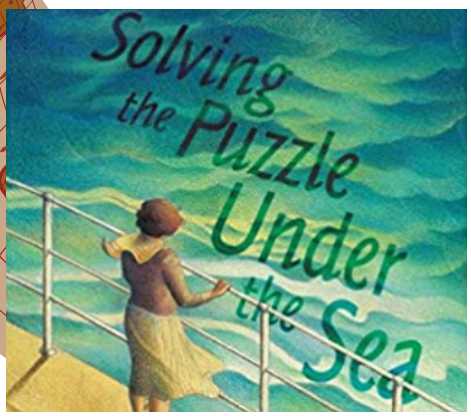
CONNECTIONS TO SCIENCE GUIDES

GEORGIA YOUTH SCIENCE & TECHNOLOGY CENTERS, INC.

SOLVING THE PUZZLE UNDER THE SEA: MARIE THARP MAPS THE OCEAN FLOOR

BY: ROBERT BURLEIGH

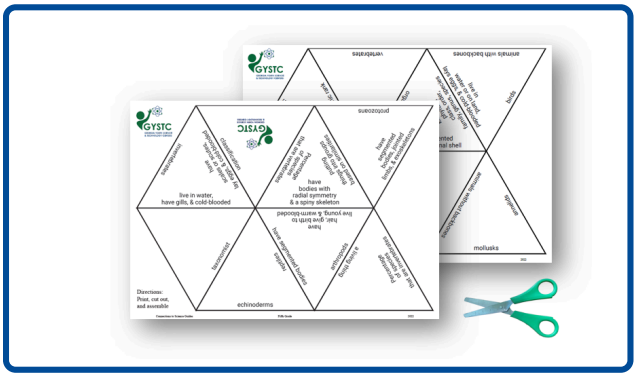


ASK

- Have you ever wondered what the ocean floor is like? What do you know about the ocean floor?
- What is a topographical map?
- Why do scientists use a topographical map to show the ocean floor?
- Have you ever thought about being a geological oceanographer?

EXPLORE

MID-ATLANTIC RIDGE: MAGNETIC FLUX PLATES



Materials:

- Mid-Atlantic Ridge: Magnetic Flux Plates stencil
- Crayons (at least two colors)
- Scissors
- Tape
- A piece of thin cardboard (like from a cereal box)

Directions:

- Begin by printing out the Mid-Atlantic Ridge: Magnetic Flux Plates stencil.
- Select two crayon colors. Color the N rectangles one color and the S rectangles another color.
- Cut the paper out on the dotted lines.
- Tape the ends together with the sides that you colored facing each other.
- Carefully, make a slit in the cardboard. Label the cardboard "Mid-Atlantic Ridge."
- Slide the colored paper through the slit, using the arrows to guide you.
- With your fingers, slowly separate the two pieces of colored paper apart. You will begin to see paired bands emerge from the cardboard.
- As you work, think about:
  - How do oceanographers measure the magnetic flux on the ocean floor?
  - How do oceanographers know how long it took for each of the magnetic bands on the ocean floor to be made?

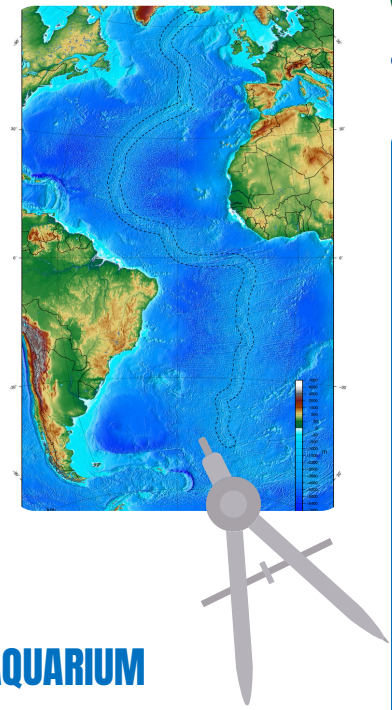
Fun Facts:

- If the Statue of Liberty was stacked on top of itself forty-seven times, that would be equal to the depth of the ocean (around 14,000 feet).
- We have better maps of the planet Mars than we do of the ocean floor.

EXPLAIN

MID-ATLANTIC RIDGE

The Mid-Atlantic Ridge is a long volcanic ridge running the length of the Atlantic Ocean. As volcanic activity pushes magma up through the ridge, the lava pushes the ocean floor away from the ridge. Magma is magnetic and when the magma cools and forms lava, the lava is oriented in the direction of the prevailing Earth's magnetic field, which reverses over millions of years. As this happens, there become bands of magnetic lava on the ocean floor which is the fingerprint of the Earth's magnetic field.



EXTEND

UGA MARINE EDUCATION CENTER & AQUARIUM

The UGA Marine Education Center and Aquarium is located on Skidaway Island, about 20 miles from downtown Savannah. In partnership with the Skidway Institute of Oceanography, the UGA Marine Education Center and Aquarium works to educate the citizens of Georgia on the preservation of the marine ecosystem.

STEM CAREER

GEOLOGICAL OCEANOGRAPHER

A geological oceanographer is a scientist who studies the ocean floor and the processes that form it. At work, geological oceanographers study undersea volcanic activity and the movement of tectonic plates. Geological oceanographers can work in labs or institutions. If you are interested in exploring the ocean floor, being a geological oceanographer might be for you!

GYSTC
GEORGIA YOUTH SCIENCE & TECHNLOGY CENTERS

BACKGROUND

The Georgia Youth Science and Technology Centers, Inc. provides quality programs for teachers of STEM subjects that improve the teaching and learning process at the kindergarten through eighth grade levels. We present programs that change students' perceptions and inspire an appreciation for science, technology, engineering, and mathematics subjects.

ABOUT US

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