

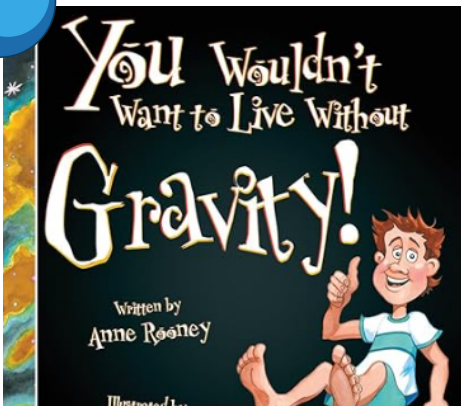
CONNECTIONS TO SCIENCE GUIDES

GEORGIA YOUTH SCIENCE & TECHNOLOGY CENTERS, INC.

YOU WOULDN'T WANT TO LIVE WITHOUT GRAVITY!

BY: ANNE ROONEY

CAN'T FIND THE BOOK?
READ-ALOUDS ARE AVAILABLE
ON YOUTUBE.



ASK

- What are tides?
- What makes tides go in and out?
- Does the moon have gravity?
- What effect does the moon's gravity have on the ocean?
- Have you ever thought about being a physical oceanographer?

EXPLORE

DRAWN TO THE MOON

Materials:

- A piece of string (about 2 feet long)
- A hole punch
- A paper cup
- Water

Directions:

- Begin by finding a place to conduct your activity - we recommend outside.
- Use a hole punch to punch two holes in the cup parallel to each other near the top.
- Thread each end of the string into the holes on either side of the cup. Tie securely to create a handle.
- Fill the paper cup about 1/4 full of water. Turn the cup upside down outside or over a sink. Observe.
- Refill the paper cup about 1/4 full. Using the handle, swing the cup around in a circular motion so that it goes over your head. Observe.
- As you are experimenting, think about:
 - In what other ways do gravitational forces affect Earth?

Fun Facts:

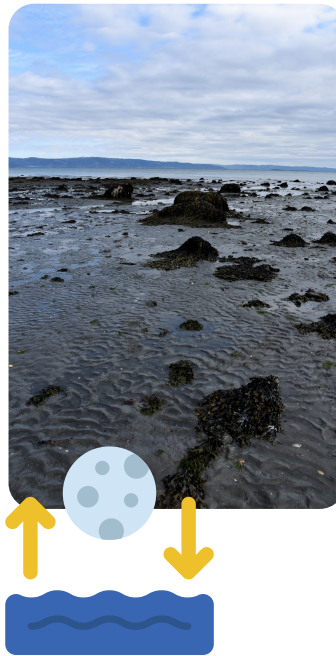
- Georgia has 110 miles of coastline.
- The same tidal forces that cause tides in the oceans affect the solid Earth causing it to change shape by a few inches.



EXPLAIN

GRAVITATIONAL FORCES

Gravity is the force that attracts objects towards another physical body that has mass. The tides are a result of the moon's gravitational pull on the world's oceans. The moon exerts a stronger pull on the water molecules closest to it, while the molecules on the other side of the Earth receive a weaker pull. The difference in the moon's pull on the two sides of the Earth creates a stretched effect on the oceans causing high and low tides twice a day.



EXTEND

SKIDAWAY ISLAND STATE PARK



Skidaway Island State Park is located near historic Savannah, Georgia. The park offers a High Tide Hike to learn about the forces that cause the high and low tides that effect coastal Georgia.

STEM CAREER

PHYSICAL OCEANOGRAPHER

A physical oceanographer is a scientist who studies physical conditions and physical processes within the ocean such as waves, currents, eddies, gyres, and tides. At work, physical oceanographers can monitor coastal erosion, and examine the ocean-atmosphere relationship that influences weather and climate. If you are interested in the ocean tides, being a physical oceanographer might be for you!



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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