deSTEMber

SCIENCE ★ TECHNOLOGY ★ ENGINEERING ★ MATH

PRESENTED BY: girlstart

Splash Zone

Watch out for that wave! Discover how plants and animals living along rocky shorelines adapt to the changing tides. Create your own tide pool and sea creature to observe how organisms withstand the force and pull of crashing water.

TEKS:
4.5B Predict and draw conclusions about what happens when part of a system is removed.
4.8C Collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time.
4.11B Summarize the effects of the oceans on land.
6.3C Represent the natural world using models and identify their limitations.

Materials for Tide Pool:
- 1- 8oz cup of water
- Mini foil loaf pans (one per student)
- Pebbles
- Sand
- Shells
- Water

Materials for Sea Creature:
- Foam pieces
- Fuzzy balls
- Modeling clay
- Old newspaper
- Pipe cleaners
- Potato halves/stryofoam balls
- Toothpicks

How To

1. To make your tide pool add sand and pebbles to fill the bottom layer of the dish pan. (Keep in mind the topography of coastal shorelines, showing pictures can be helpful)
2. Using the sea creature materials, create your own sea creature.

   Helpful questions:
   - What feature on your animals will help them against the forces of gravity?
   - Does your creature have any defense mechanisms?
   - Where can your animal navigate, above ground, underwater or both?
3. Place your sea creature in your tide pool.
4. Add extra shells or rocks as protection around your creature.
5. Fill tide pool with ¼ cup of water to observe how your creature survives the low tide water flow.
6. Record what happens by drawing a picture, or list observations.

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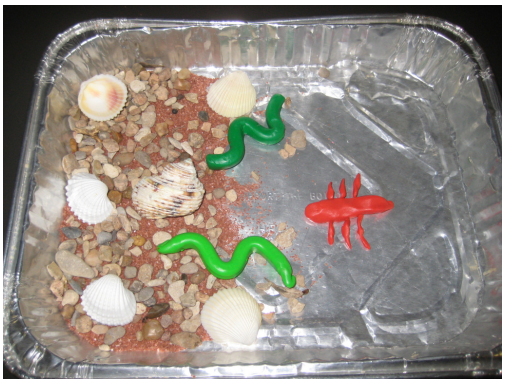
How To Continued...

7. Add more water to observe the differences in your sea creature's habitat as high tide enters the tide pool.
8. Record what happens by drawing a picture, or list observations.
9. Move the water around to test how well your creature can withstand living in the tide pool.



Why Does it Work?

The moon's gravitational force causes the tides. The Earth and the moon are attracted to each other like magnets. The moon and Earth never run into each other because they have enough mass to outweigh the gravitational pull of each other. The moon's gravity tries to pull anything on the Earth closer. The water moves closer to the moon as the moon rotates around the Earth. It creates low and high tides.

Career Connection:

Marine Geophysicists work on projects such as ocean drilling, understanding seismic activity in the ocean, and how oceanic geology changes. Studying coastal geology is extremely important because humans and natural processes change the coast lines continually, so marine habitats and populations will also change.

Resources: http://oceanservice.noaa.gov/education/kits/tides/media/supp_tide06a.html

