

Ocean Literacy

What all kids should know...

U.S. Commission on Ocean Policy

On September 20, 2004, the U.S. Commission on Ocean Policy fulfilled its mandate to submit recommendations for a coordinated and comprehensive national ocean policy to the President and Congress. The Commission's final report, "[An Ocean Blueprint for the 21st Century](#)," contains 212 recommendations addressing all aspects of ocean and coastal policy. The 16 members of the Commission call on the President and Congress to take decisive, immediate action to carry out these recommendations, which will halt the steady decline of our nation's oceans and coasts.

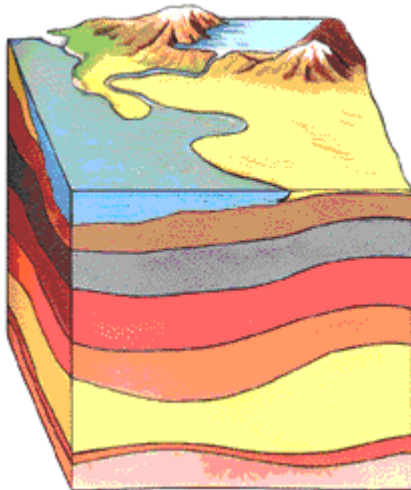
1. The Earth has one big ocean with many features

- The oceans hold *48 Billion* cubic feet of water or 1,358 cubic decimeters.

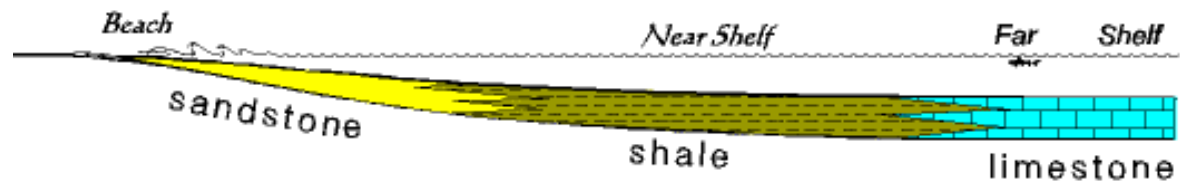


2. The ocean and life in the ocean shape the Earth

For millions of years, little pieces of our earth have been eroded--broken down and worn away by wind and water. These little bits of our earth are washed downstream where they settle to the bottom of the rivers, lakes, and oceans. Layer after layer of eroded earth is deposited on top of each. These layers are pressed down more and more through time, until the bottom layers slowly turn into rock.



Here we see river transported sediment entering the ocean. Waves crashing on the beach keep the sediment continuously stirred up. The quartz, being relatively heavy, settles quickly to the bottom, the clay remains in suspension until it drifts to the quieter near shelf, where it finally settles to the bottom to form shale.

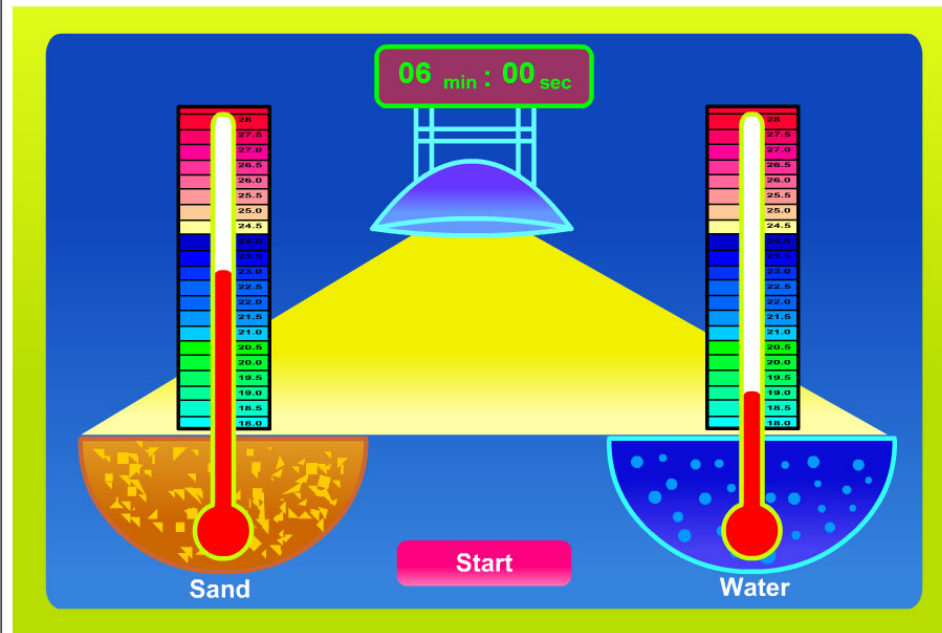
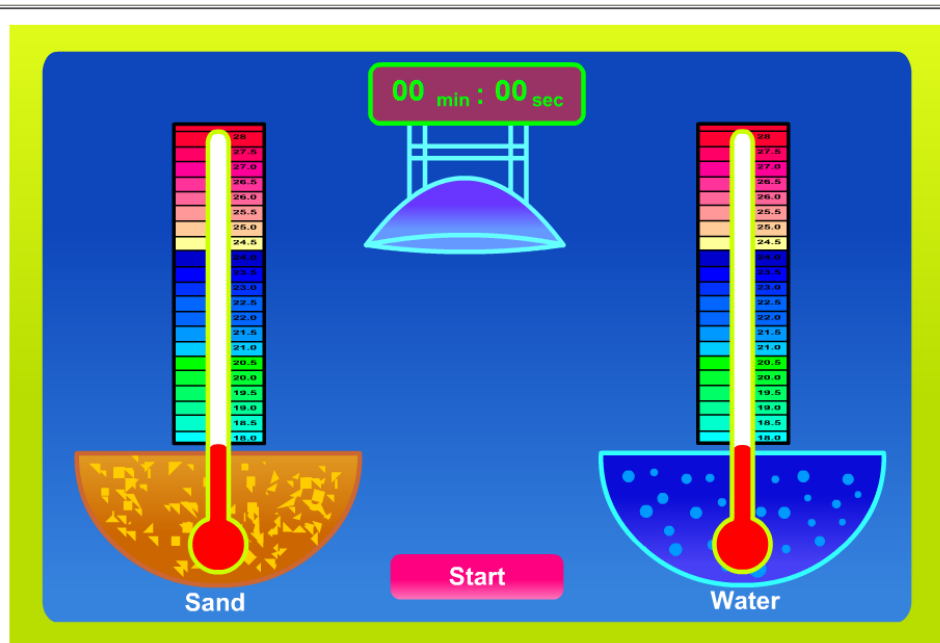


Finally, the dissolved CaCO_3 precipitates out of suspension in the far shelf, beyond the range of sand and clay to form limestone. The calcite is deposited because plants and animals extract it from sea water and use it to build their skeletons. After death their calcite skeletons form the limestone sediment.

3. The ocean is a major influence on weather and climate.

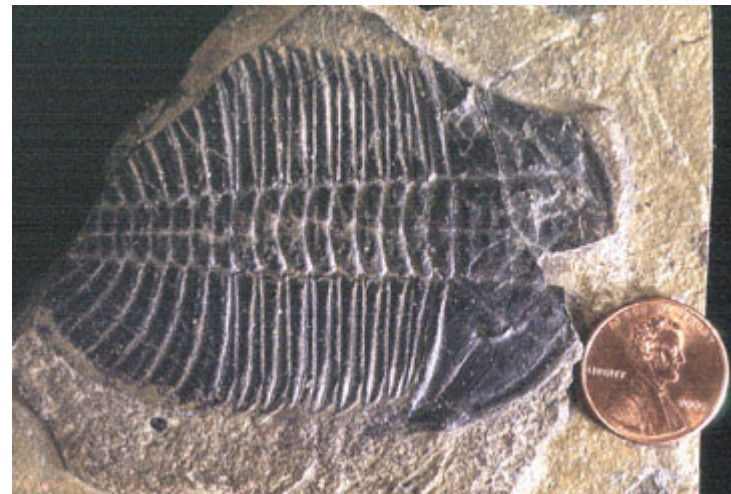
The ocean helps keep earth's temperature constant from day to night and summer to winter by storing and releasing heat and water.

<http://www.marine.rutgers.edu/~jdastur/SandWater.html>



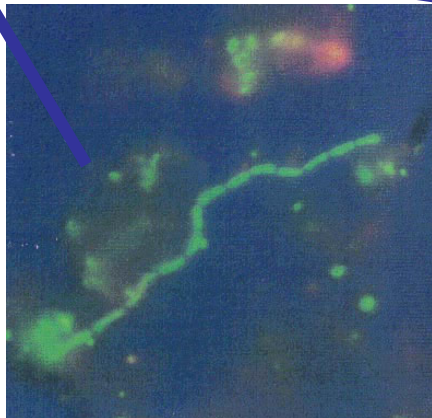
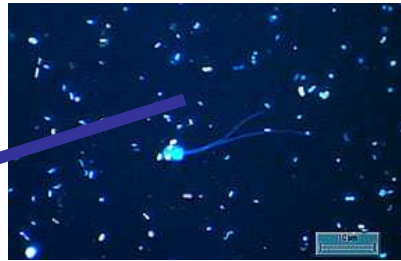
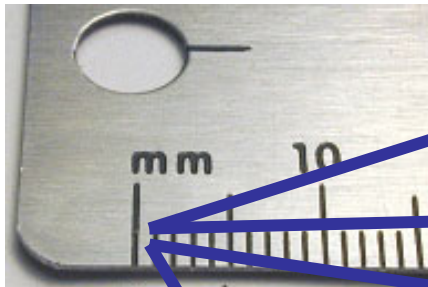
4. The ocean makes the Earth habitable.

Trilobites were some of the first multicellular animals to live in the world's oceans. Their fossil record extends back 530 million years to the early part of the [Cambrian Period](#) and indicates that trilobites evolved rapidly in the shallow seas of this time. In fact, trilobite fossils are so common in Cambrian rocks that the Cambrian Period is sometimes called the age of trilobites.



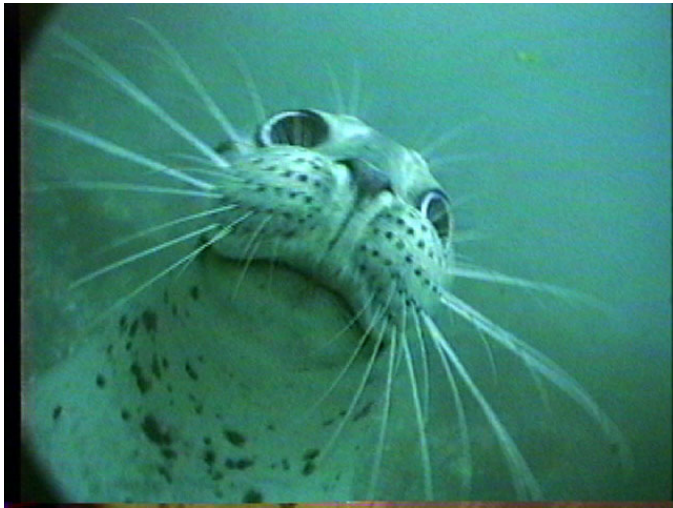
5. The ocean supports a great diversity of life in ecosystems.

1 millimeter of seawater contains a million bacteria of 1000 different types, viruses (more than all other organisms combined), phytoplankton, and zooplankton.



6. The ocean and humans are interconnected.

The ocean affects every human life



Freshwater supply

Oxygen

Moderates climate/weather

Food

Medicines

Minerals

Energy

Provides jobs

Transportation

National security

7. The ocean is largely unexplored.

We have better maps of Moon, Venus, and Mars than we have of the sea floor.

The sea floor is poorly mapped, although recent global maps based on satellite altimeter observations are much better than older maps.

