

A photograph of ocean waves with white foam, set against a clear blue sky. The text is overlaid on the image.

# *OCEANS*

*SOL 5.6*

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# OCEANS

*Why are oceans important to us?*

- ◆ *Source of food*
- ◆ *Source of minerals (salt, manganese, gold, etc.)*
- ◆ *Source of fossil fuels (gas, oil)*
- ◆ *Part of the water cycle*
- ◆ *Affects weather and climate*
- ◆ *Area of recreation*
- ◆ *Way to earn a living*
- ◆ *Transportation route*

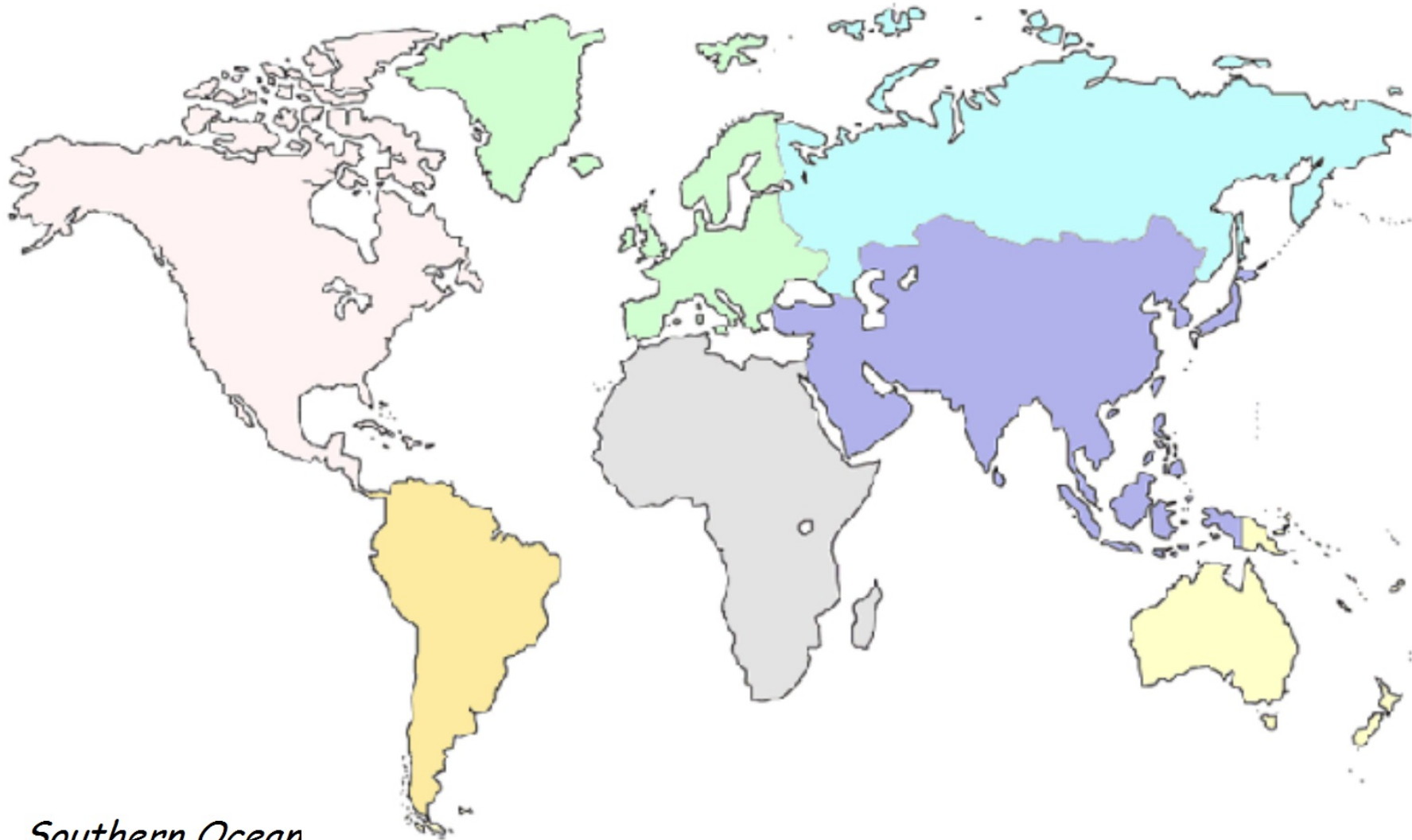


# OCEANS

*In reality, there is only one ocean. It encircles the earth and stretches from the north pole to the south pole. However, because the continents break up the ocean, it is divided into 5 areas. The 5 major oceans are the Pacific, the Atlantic, the Indian, the Southern, and the Arctic. The Southern Ocean was recognized in 2000.*



*Drag the labels to where they belong.*



*Southern Ocean*

*South America*

*Pacific Ocean*

*Asia*

*Africa*

*Atlantic Ocean*

*North America*

*Europe*

*Australia*

*Arctic Ocean*

*Indian Ocean*

# OCEANS

*71% (approximately 3/4) of the earth is covered with water.*

*The hydrosphere is all earth's waters, including ground water, run-off, rivers, lakes, oceans, and ice.*

*97% of the hydrosphere is salt water.*



# OCEANS

*Salinity is the measure of the amount of salt in water. The salt comes from the earth's crust. As water flows over land, it picks up minerals and carries them to the oceans. Salinity is not the same everywhere. The lowest salinity is found where a river enters the ocean. When there is more evaporation in the ocean, the salinity is higher. This occurs in warmer climates. There will also be higher salinity when there is little precipitation.*

*Ocean water is a complex mixture of gases and dissolved solids. Marine organisms are dependent on dissolved gases for survival.*

# OCEANS

*Have you ever floated on your back in a pool? In the ocean?  
Which one is easier?*

*Things are more **buoyant**, or float more easily, in salt water because it is more dense than fresh water. The more salt there is in a solution, the greater the density. **Density** is how much mass something has per unit of volume.*

# OCEANS

*Extreme pressure is another characteristic of ocean water.*

*Water has weight. **The deeper you dive, the greater the water pressure becomes.** Therefore, you must use special equipment to travel in the the oceans. Submersible vehicles have been built with very thick sides as well as having a supply of oxygen, etc.*

*In addition to pressure increasing, **the temperature of the water and amount of light decrease as you go deeper into the ocean.***

# OCEANS

## *Natural treasures found in the oceans*

- ♦ *Minerals such as copper, nickel, and manganese are found in rocks called nodules*
- ♦ *Minerals such as gold and silver are dissolved in the water*
- ♦ *Deposits of natural gas and oil*
- ♦ *Fresh water can be obtained from desalination of sea water*
- ♦ *Food sources*
- ♦ *Sponges*
- ♦ *Pearls*

## *Problems in the ocean*

- ♦ *Overhunting animals leads to endangered species*
- ♦ *Pollution such as trash and sewage*
- ♦ *Pollution such as oil spills*

## Review

1. The amount of salt in the water is the \_\_\_\_\_.
2. How well an object floats is its \_\_\_\_\_.
3. As you go deeper in the ocean, the pressure \_\_\_\_\_.
4. As you go deeper in the ocean, the temperature \_\_\_\_\_.
5. As you go deeper in the ocean, the amount of light \_\_\_\_\_.
6. Ocean water has gases and minerals dissolved in it.  
It is a \_\_\_\_\_.
7. All of the earth's waters are the \_\_\_\_\_.



## *Images from:*

<http://nessus.gunslingers.org/2004-03%20-%20Breezes%20Varadero,%20Cuba/1613%20The%20Ocean.jpg>

<http://www.dicander.com/pix/files/wave.jpg>

<http://www.theodora.com/maps/new8/oceans.gif&imgrefurl>

<http://www.evl.uic.edu/pape/Gallery/OceanPlanet2.jpg>

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[http://www2.ocean.washington.edu/seabreeze/sb03/pix/100\\_0085.JPG](http://www2.ocean.washington.edu/seabreeze/sb03/pix/100_0085.JPG)