Waves, Currents, and Tides!

**Waves!**

* A wave is a \_\_\_**rhythmic**\_\_\_ movement that carries \_\_**energy**\_\_\_ through matter   
  and space. In the ocean waves move through \_\_\_**mattere**\_\_\_.
* When \_**wind**\_\_ blows across a body of water, energy is \_**transfered**\_\_ to the water.
* When the wind speed is great enough water begins to pile up, forming a \_**wave**\_\_.
* Waves continue to moving for long distances even if the wind \_\_**stops blowing**

**Ocean Currents!**

* Ocean currents are a \_\_\_**\_mass flow of ocean water.**
* There are two main types of currents:
  + **Surface Currents**
  + **Deep Ocean Currents**

Surface Currents

* Surface currents move water \_\_\_\_**horizontally**\_\_ and \_\_**parallel**\_ to the Earth’s surface.
* Surface Currents are powered by **wind.**
* There are \_\_\_\_\_**Warm**\_\_\_\_ and \_\_\_\_\_\_**Cold**\_\_\_\_\_\_ surface currents.
* Surface winds and surface currents are affected by the **rotation** of the Earth.
  + This is called the Coriolis Effect.

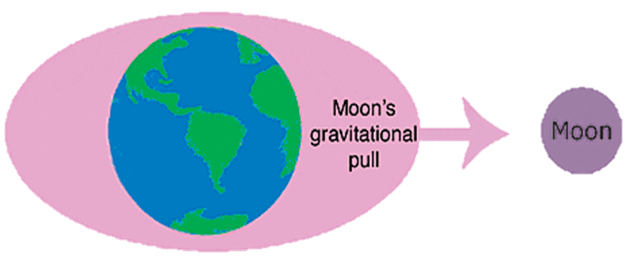
Deep Ocean Currents

* Deep ocean currents circulate because of \_\_\_\_**density**\_\_\_ differences.
* \_\_\_\_\_**\_More**\_ dense seawater sinks beneath **less** dense seawater.

**How it works!**

When water becomes colder it becomes more dense, causing it to sink. It flows along the ocean floor until it hits warmer regions and the water heats up. When the water heats up it becomes less dense and floats. It flows along the ocean surface until it hits colder regions and it cools off.

**Tides!**

* Tides are the daily \_\_**rise**\_\_\_\_\_ and \_\_**fall**\_\_ of Earth’s water.
* As the tide comes in, the level of water on the beach \_\_**goes up**, and as the tide goes out, the level of water on the beach goes down.
* The gravitational pull from the \_**moon**\_\_\_ , and the rotation of the \_\_\_**Earth**\_\_ on its axis, cause the ocean and sea water to bulge, producing the \_\_**tides**\_\_\_.
* The Moon pulls on the water on the side \_\_\_\_**closest**\_ to it more strongly than it pulls on the centerof the Earth. This pull creates a bulge of water on the side of Earth\_\_\_**nearest**\_\_the Moon.
* At times, the Sun and Moonpull together on Earth’s waters in the \_\_\_\_**Same direction (spring tide)**\_\_\_.
* At other times they pull in \_**opposite directions (neap tide).**