



# Tide me Over...

A close look at: High/Low Tides

Spring/Neap Tides

# What is a "TIDE"?

TIDES are daily changes in ocean water.

Tides are caused by the difference in the gravitational force of the SUN and MOON across the EARTH.

## What is a "TIDE"?

The difference in gravitational force is called **TIDAL FORCE**.

The tidal force exerted by the **MOON** is stronger than the tidal force exerted by the **SUN**.

## What is a "TIDE"?

This is because the MOON is much closer to EARTH than the SUN is.

Therefore, the MOON is mainly responsible for TIDES on Earth.

# High Tides



The bulges that occur in the Earth's oceans are called **HIGH TIDE**.

**HIGH TIDE** is simply a term given to water that is **HIGHER** than the average **SEA LEVEL**.



# LOW Tides



LOW TIDES occur in the spaces  
Between the high tides.

LOW TIDE is simply a  
term given to water that is  
LOWER than the average  
SEA LEVEL.



# HIGH-LOW Tides



As the **MOON** revolves around the Earth and Earth rotates, The tidal bulges move around Earth.

The tidal bulges **FOLLOWS** The movement of the **MOON**.



# HIGH-LOW Tides



Because the tidal bulges follow the Moon's revolution-

Many places on Earth experience 2 high tides and 2 low tides each day.





# Tidal Range

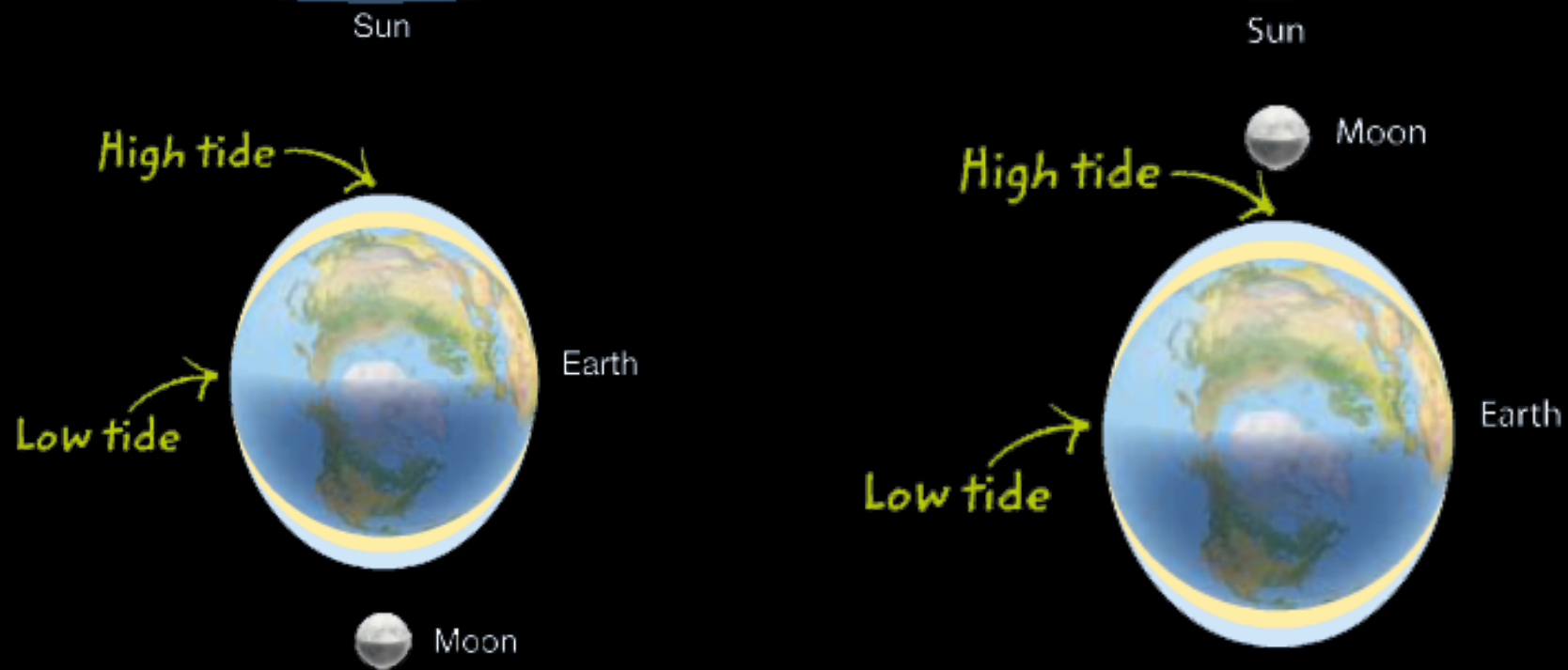
- Because the **MOON** is so much closer to Earth than the **SUN**, the **MOON's** gravitational force is much stronger than that of the **SUN's**.
- In fact, the moon's effect on tides is **TWICE** as strong as the sun's effect.

# Tidal Range

- The combined gravitational forces between the **SUN**, **MOON**, and **EARTH** result in different tidal ranges.
- A **TIDAL RANGE** is the difference between the levels of ocean water at high tide and low tide. That range depends on the sun-earth-moon's position.

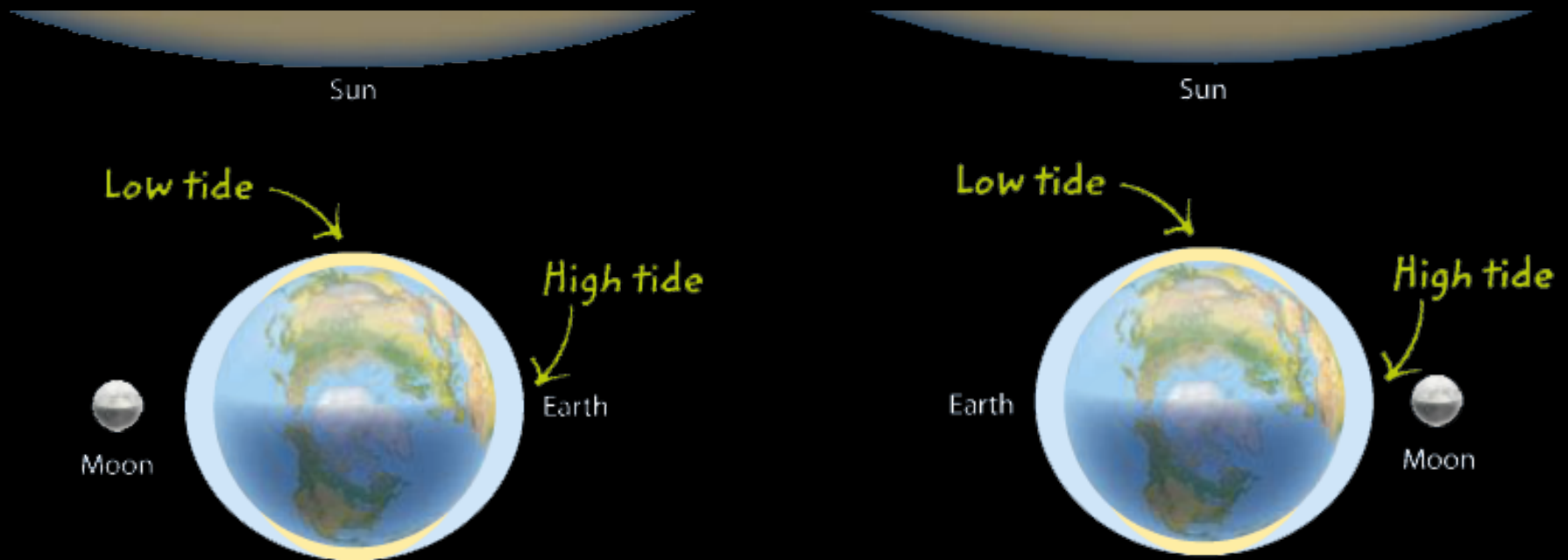
# SPRING TIDE

Spring Tides occur when the Sun, the Earth, and the Moon are in a STRAIGHT line.



# NEAP TIDE

Neap Tides occur when the Sun, the Earth, and the Moon are in a 90 degree angle.



Tide Name w/  
Lunar Phases

