



Do Now:

Label next 2 pages
in ISN "Tides"



Checkpoint – Seasons & Moon Phases (~6 min)

C.U.B.E² Strategy

- **CIRCLE** important words
- **UNDERLINE** the question being asked
- **BOX** key details in question
- **ELIMINATE** wrong answers
- **EXPLAIN** your answer





Video Clip

Think/Pair/Share

1. What do you notice in the video?
2. What could cause the water to rise and fall over the course of the day?





Tides





Essential Questions:

1. How does the position of the Sun, Earth, and Moon relate to ocean tides?
2. What are the characteristics of spring and neap tides?



Tides

Tides

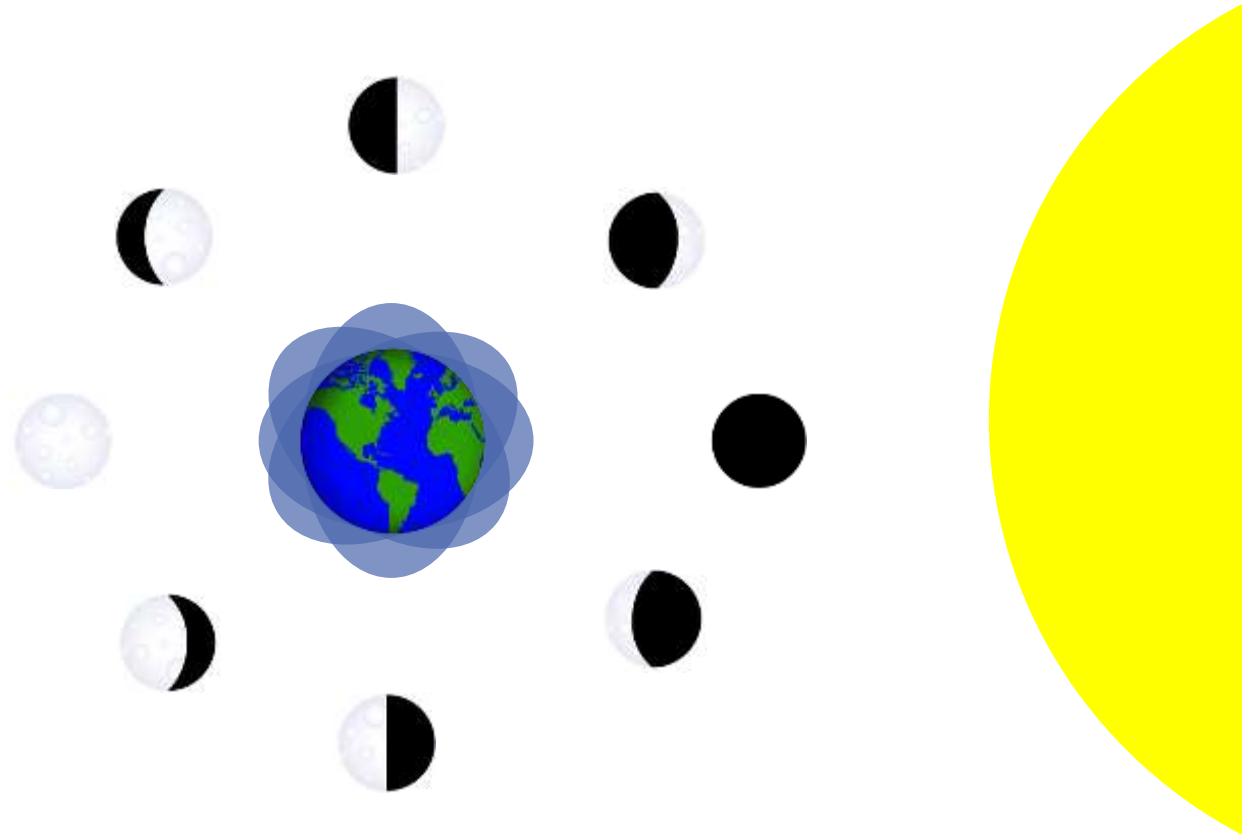
- The alternate rise and fall of the oceans
- Tides and waves are not the same thing
- Tides rise and fall about every 12 hours due to the rotation of the Earth
- 2 high tides and 2 low tides every 24 hours



Tides

Gravity and Tides

- Gravity of the Moon and Sun cause the tides
- The Moon is closer to Earth and has a much greater impact on the tides than the Sun.



Tides

Low Tide

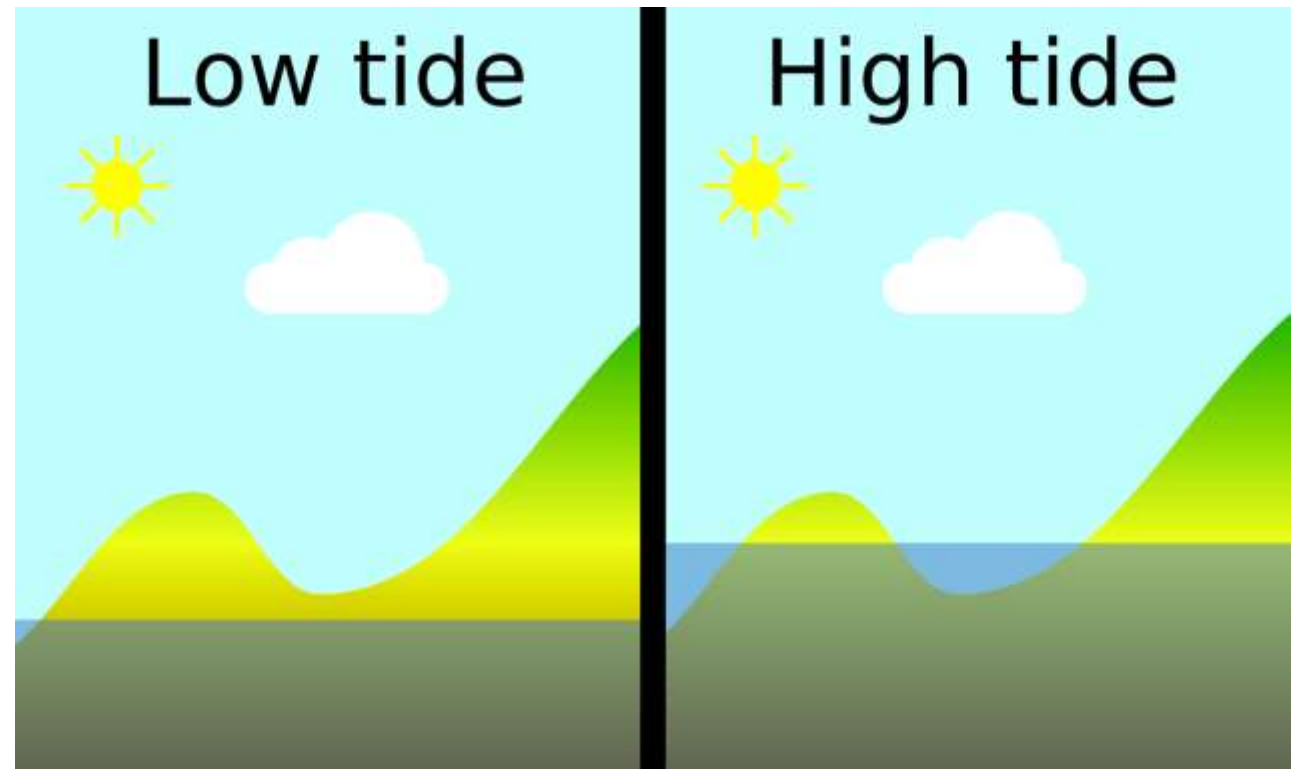
- Beach and environment exposed
- Organisms have adapted to long periods with limited water

High Tide

- Environment becomes flooded with ocean water
- Organisms have adapted to long periods of immersion in saltwater

Tidal Range

- The difference between Low and High Tide



Tides

Spring Tides

- The Sun, Earth, and Moon are in a straight line.
- Largest difference between high and low tides (tidal range)
- New or Full Moon



Tides

Neap Tides

- The Sun, Earth, and Moon form a ninety degree angle.
- Smallest difference between high and low tides
- 1st or 3rd Quarter Moon

First Quarter



90°

90°

Third Quarter





We Do– Tide Model

- Get into groups of 3 and stand up
- The oldest person is the Sun. The middle is the Earth. The youngest is the Moon.





We Do- Spring Tide Model

- Model how the Sun, Earth, and Moon would look during a **New Moon - Spring Tide**.
- Model how the Sun, Earth, and Moon would look during a **Full Moon - Spring Tide**.

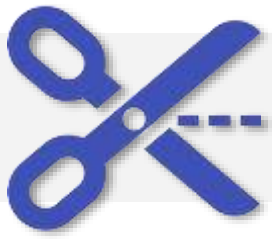




We Do– Neap Tide Model

- Model how the Sun, Earth, and Moon would look during a **First Quarter - Neap Tide**.
- Model how the Sun, Earth, and Moon would look during a **Third Quarter - Neap Tide**.

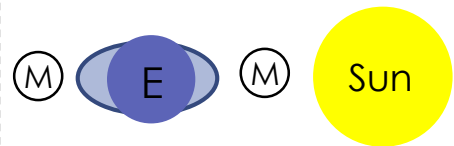
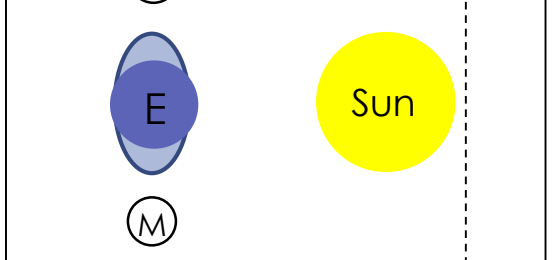




You Do– ISN Template

Tides ISN Template

1. Cut out the tides template.
2. Glue it to your journal along the 2 skinny tabs.
3. Answer the questions.

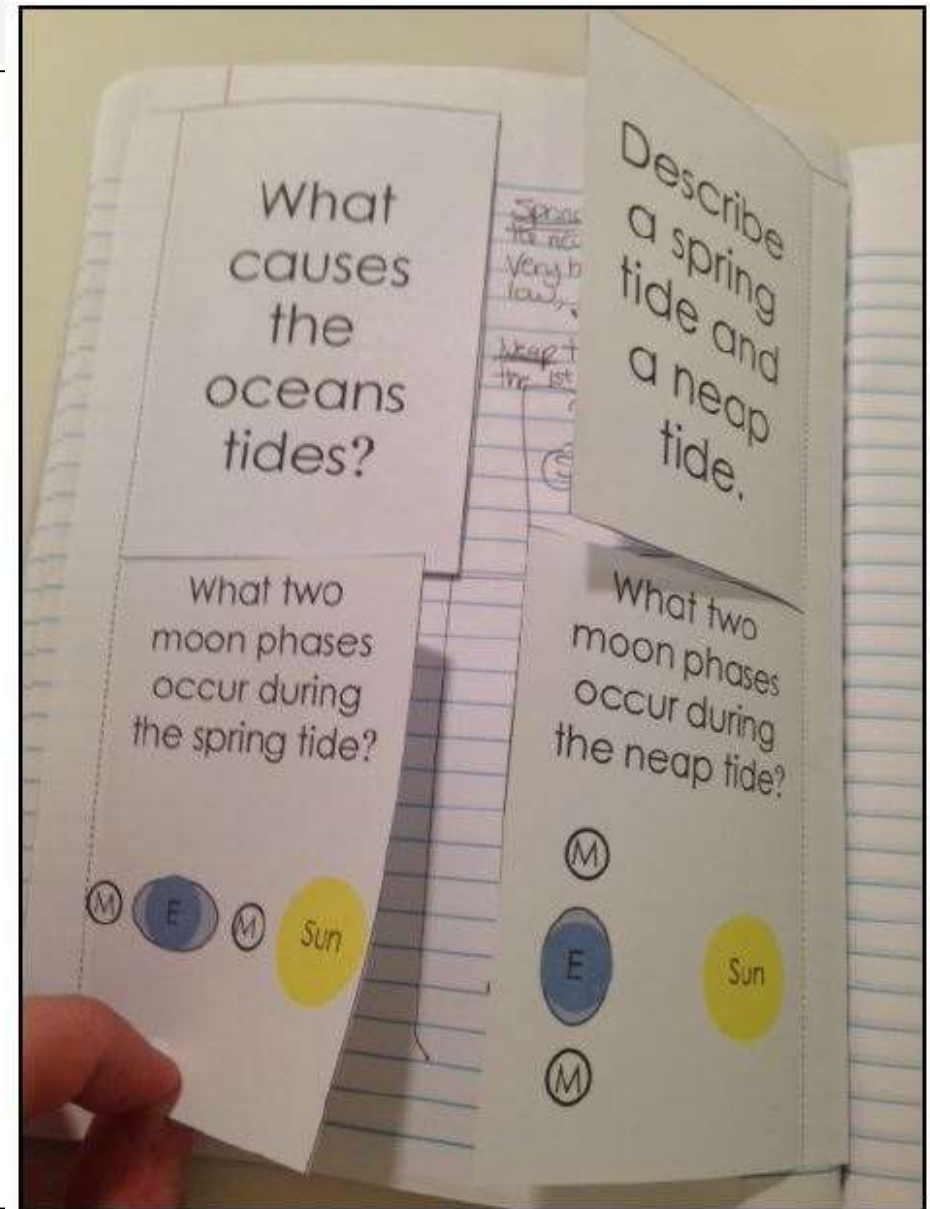
<p>What causes the oceans tides?</p>	<p>Describe a spring tide and a neap tide.</p>
<p>What two moon phases occur during the spring tide?</p> 	<p>What two moon phases occur during the neap tide?</p> 



You Do– ISN Template

Tides ISN Template

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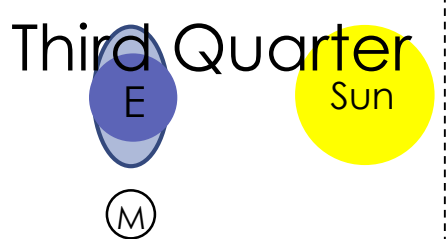




We Do- ISN Template

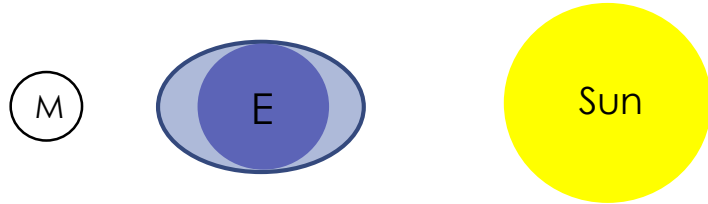
Tides INB Template

1. Let's discuss the answers.

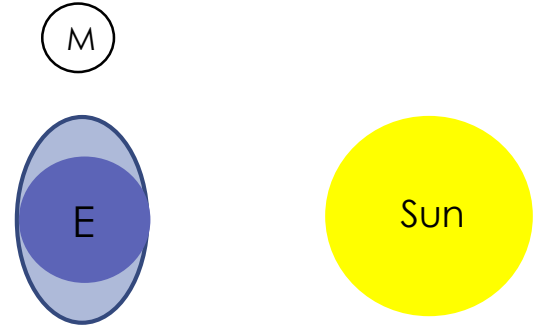
<p>The gravity of the Sun and Moon causes the tides are mostly controlled by the Moon's gravity.</p>	<p>The spring tide happens when the Sun, Earth, and Moon are in a straight line. They have the largest difference between high tide and low tide. The neap tide happens when the Moon is at a 90 degree angle from the Earth and Sun. They have the smallest difference between high tide and low tide.</p>
<p>What two moon phases occur during the Spring tide?</p> <p>New Moon & Full Moon</p> 	<p>What two moon phases occur during the Neap tide?</p> <p>First Quarter & Third Quarter</p> 



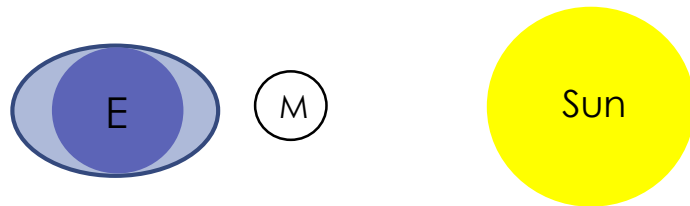
Name the Tide and Moon Phase



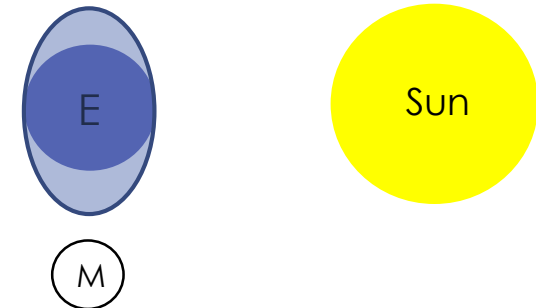
Spring Tide – Full Moon



Neap Tide – 1st Quarter



Spring Tide – New Moon



Neap Tide – 3rd Quarter



Check for Understanding

Can you...

1. Describe how the position of the Sun, Earth, and Moon affect the tides?
2. Describe the characteristics of spring and neap tides?

