

Tides



Chapter 1: Earth, Moon, & Sun

Figure 9 Predicting: What would happen if these people stayed on the beach too long?



- They could get trapped on the beach by high tide.

*The rise and fall of water,
every 12.5 hours or so is called*

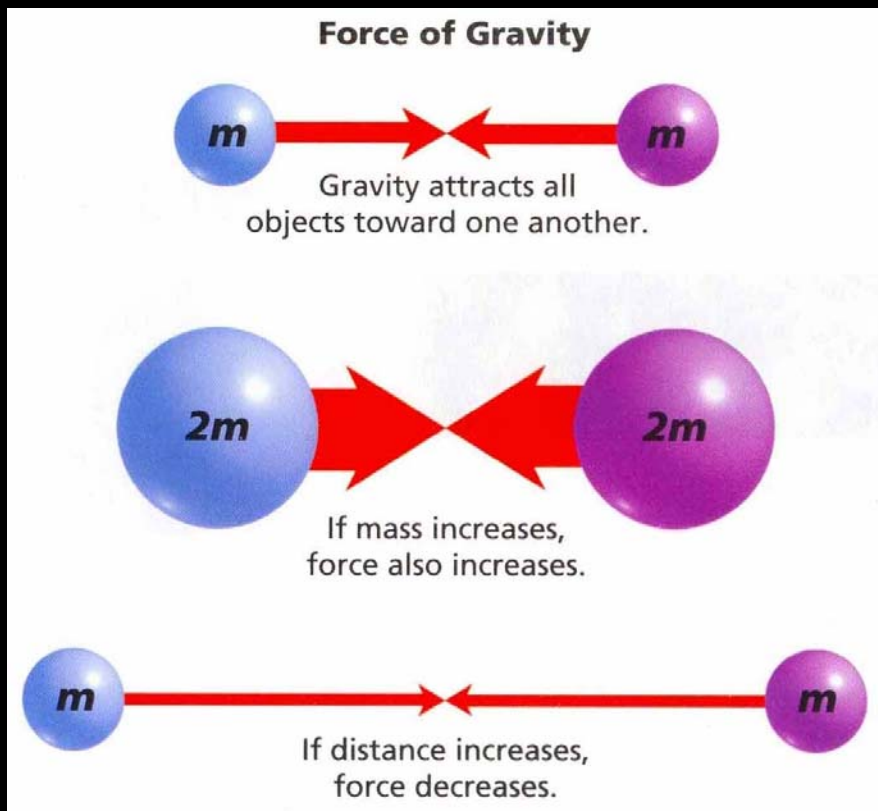
_____.

- tides

The water rises for about _____, then falls for about _____ in a regular cycle.

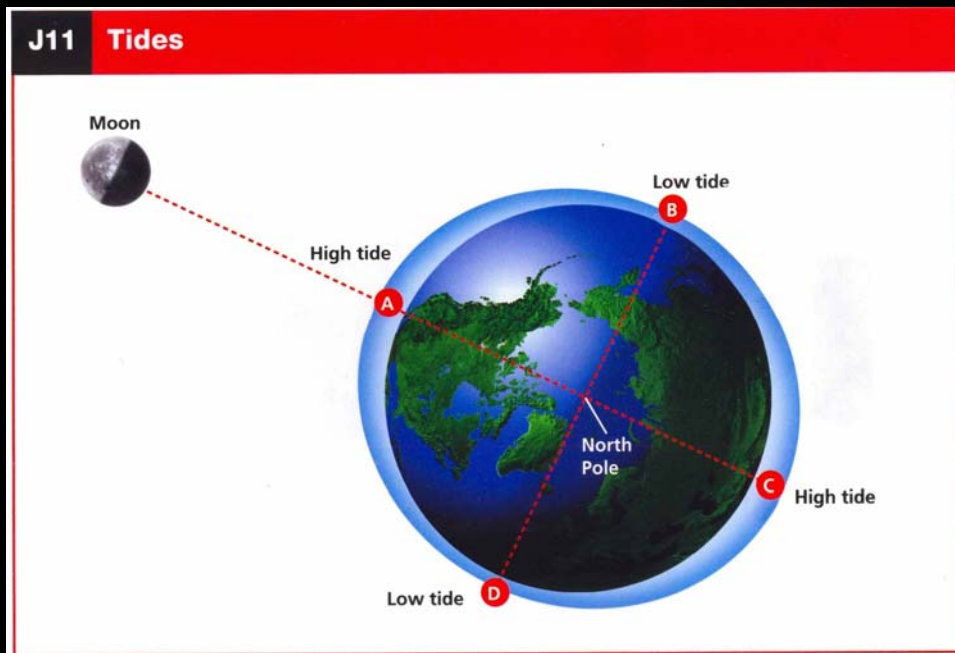
- six hours
- six hours

Gravity



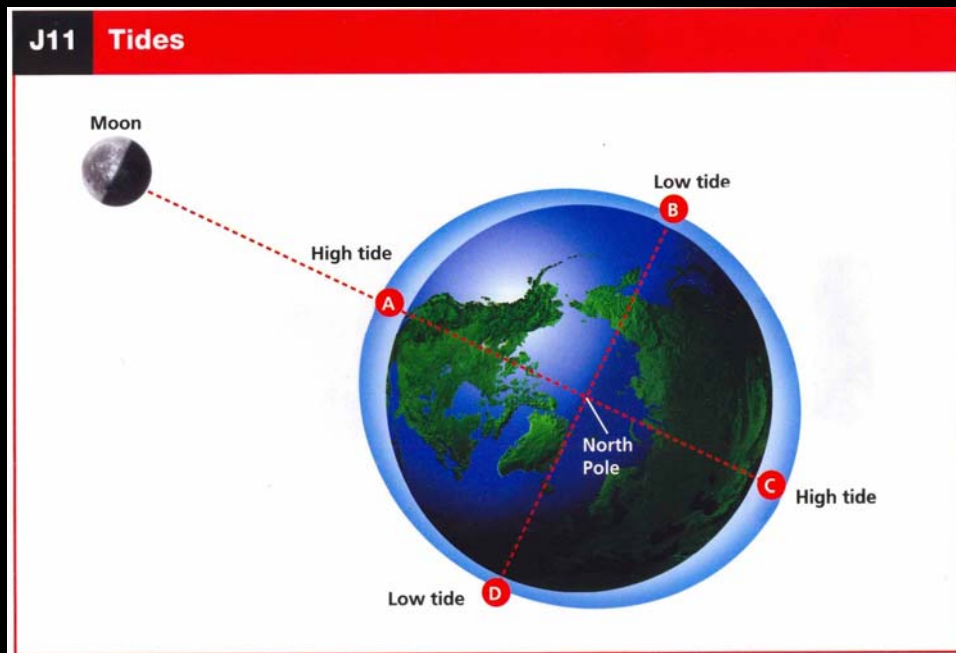
- The attractive force between two objects
- The magnitude of gravity depends on two factors:
 - The mass of the objects
 - The distance between the objects

Why are there high tides on opposite sides of Earth at the same time?



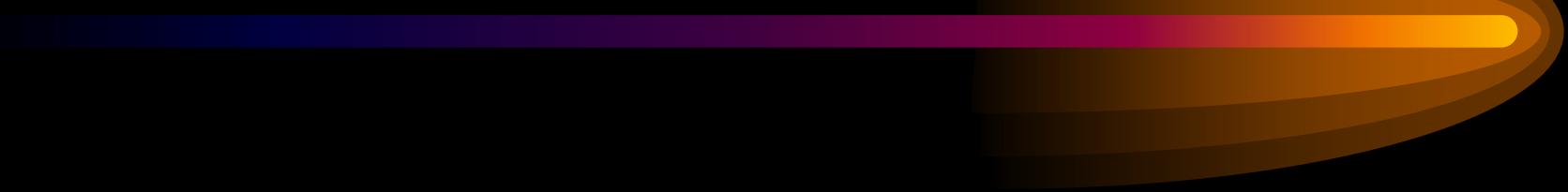
- One high tide forms when the moon pulls on the waters near it.
- Another high tide forms on the opposite side as the solid Earth is pulled toward the moon, leaving the waters behind.

Why are there low tides on opposite sides of Earth at the same time?



- The moon is pulling Earth's water and Earth itself causes high tides
- The remaining water in the other two zones is a lot less causing 2 low tides

Each location on Earth sweeps through those two high tides and two low tides in a ____ - hour cycle.

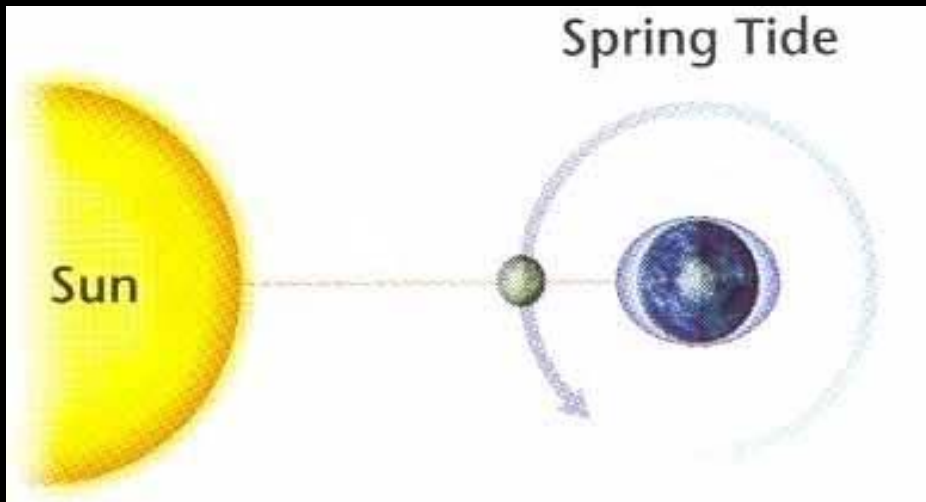


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Guide For Reading: What causes the tides?

- Tides occur mainly because of the differences in how much the moon's gravity pulls on the different parts of Earth
- As Earth rotates, the moon's gravity pulls water toward the point on Earth's surface closest to the moon
- The furthest point from the moon, the moon's gravity pulls less strongly on the water at Earth's surface than on Earth as a whole leaving water behind causing a second high tide

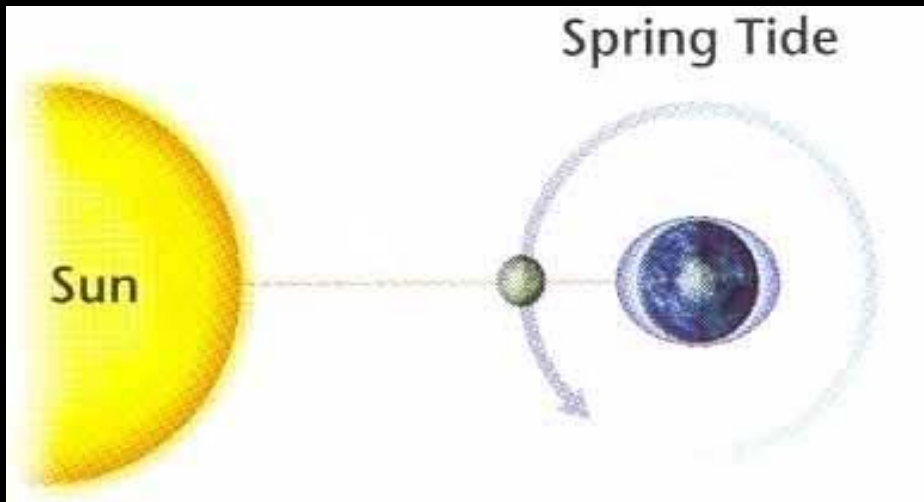
What is a spring tide?



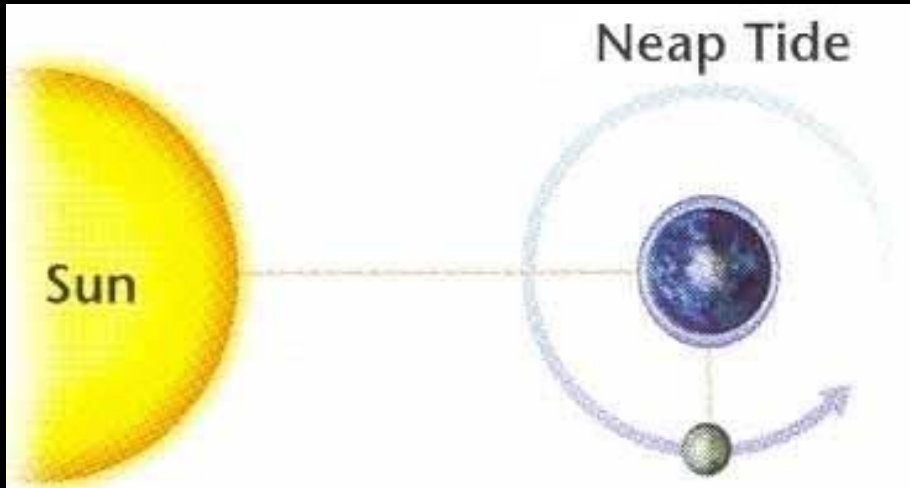
- A tide with the greatest difference between low and high tides
- The sun and moon pull Earth's water in the same or opposite directions

What two phases of the moon cause spring tides?

- New Moon
- Full Moon

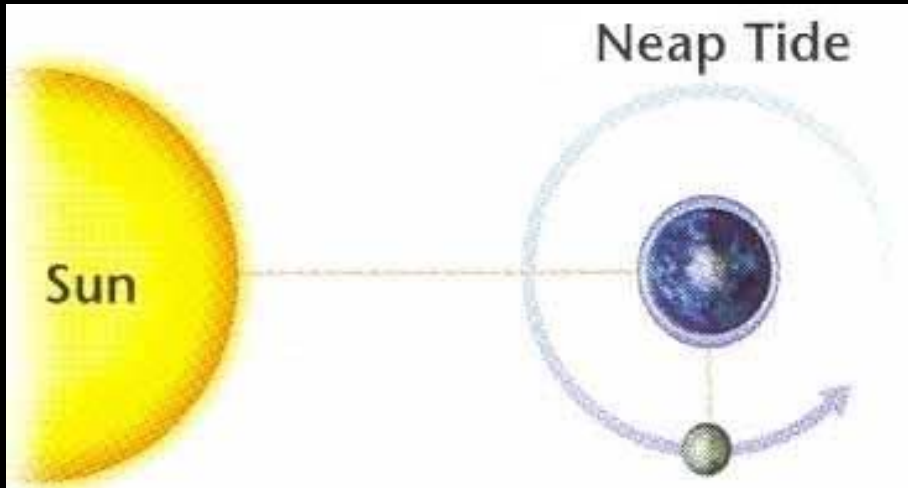


What is a neap tide?



- A tide with the least difference between low and high tides
- The moon and sun pull Earth's water at a 90° or right angle

What two phases of the moon cause neap tides?




- First Quarter
- Third Quarter

What is an intertidal zone?



- An area that becomes under water at high tide, and becomes dry land at low tide

Why must animals who live in intertidal zones adapt to this environment?



- The must adapt because they spend half of their life under water, and half on dry land