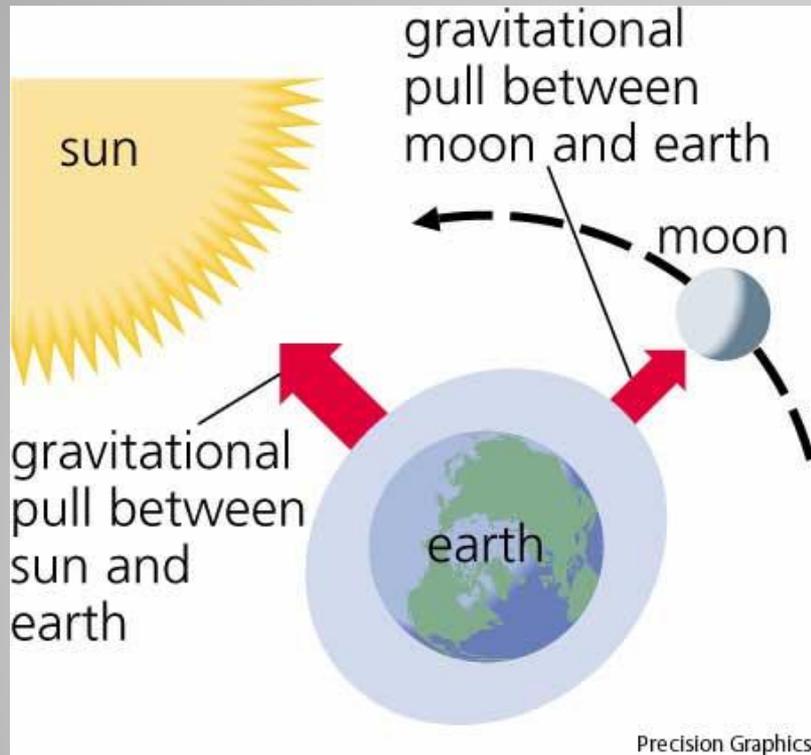




Tides

8.7C The student knows the effects resulting from cyclical movements of the Sun, Earth, and Moon. The student is expected to relate the position of the Moon and Sun to their effect on ocean tides.

What causes the tides?



- Tides occur mainly because of the position of the Moon and Sun in relationship to Earth.
- As Earth rotates, the moon's gravity pulls water toward the point on Earth's surface closest to the moon.



**21 foot
tides!**

**One of the
greatest
tidal
variations
on Earth!**

Bay of Fundy, Nova Scotia

High Tide

Low Tide



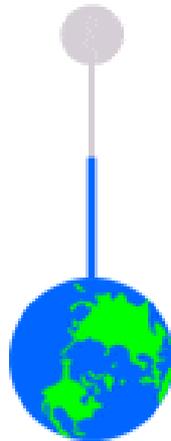
What would happen if these people stayed on the beach too long?



High Tide

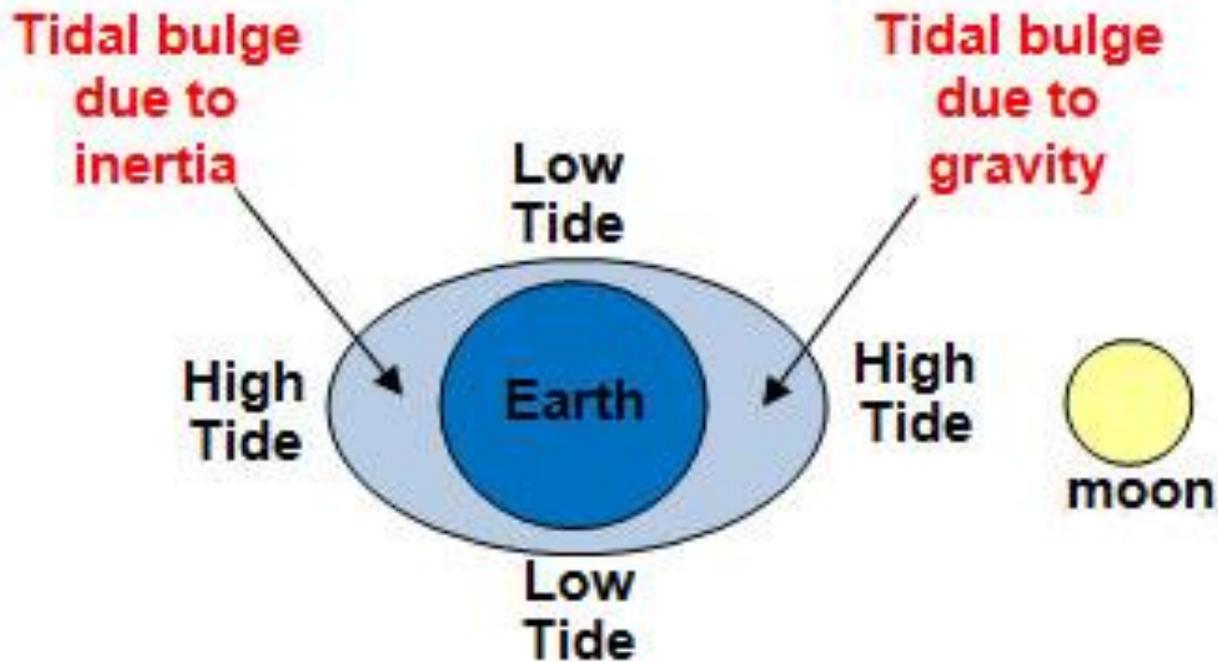


Low Tide



0 hrs

As the Earth spins, the water rises for about six hours, then falls for about six hours in a regular cycle.

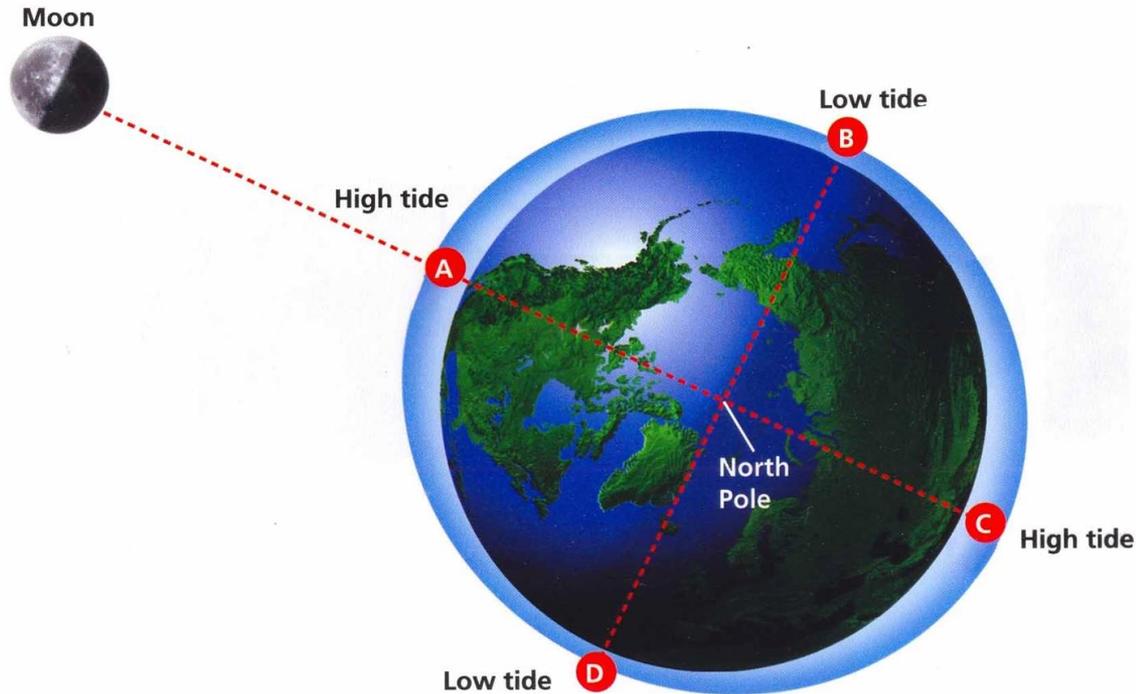


One high tide forms when the moon pulls on the waters near it.

Another high tide forms on the opposite side due to inertia.

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

11 Tides

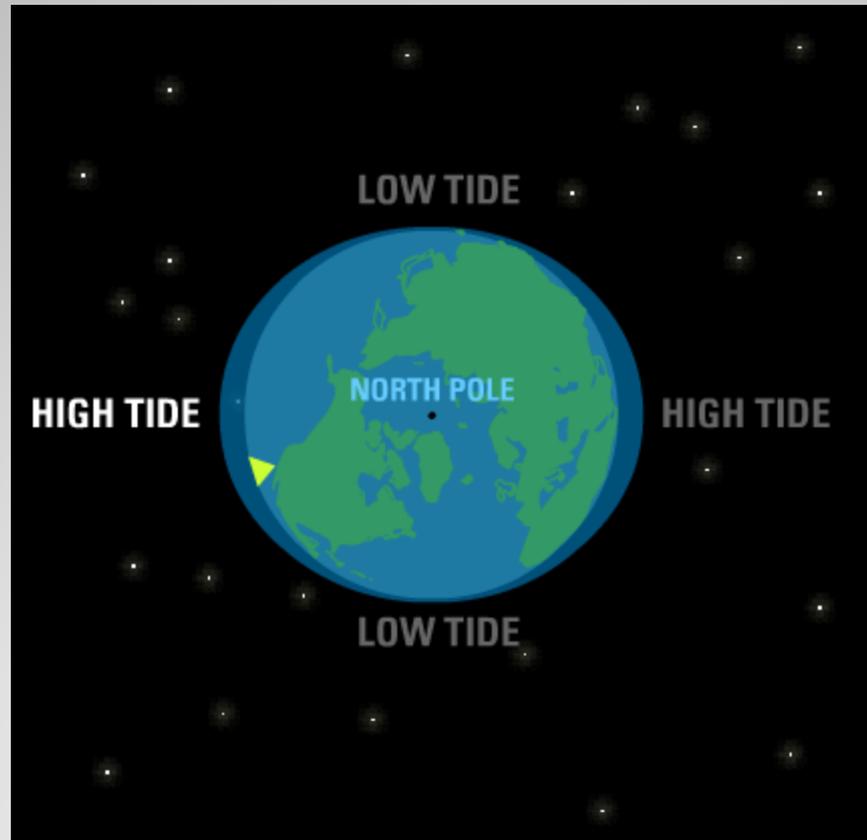


The moon is pulling Earth's water and Earth itself causing high tides

The remaining water in the other two zones is a lot less causing low tides

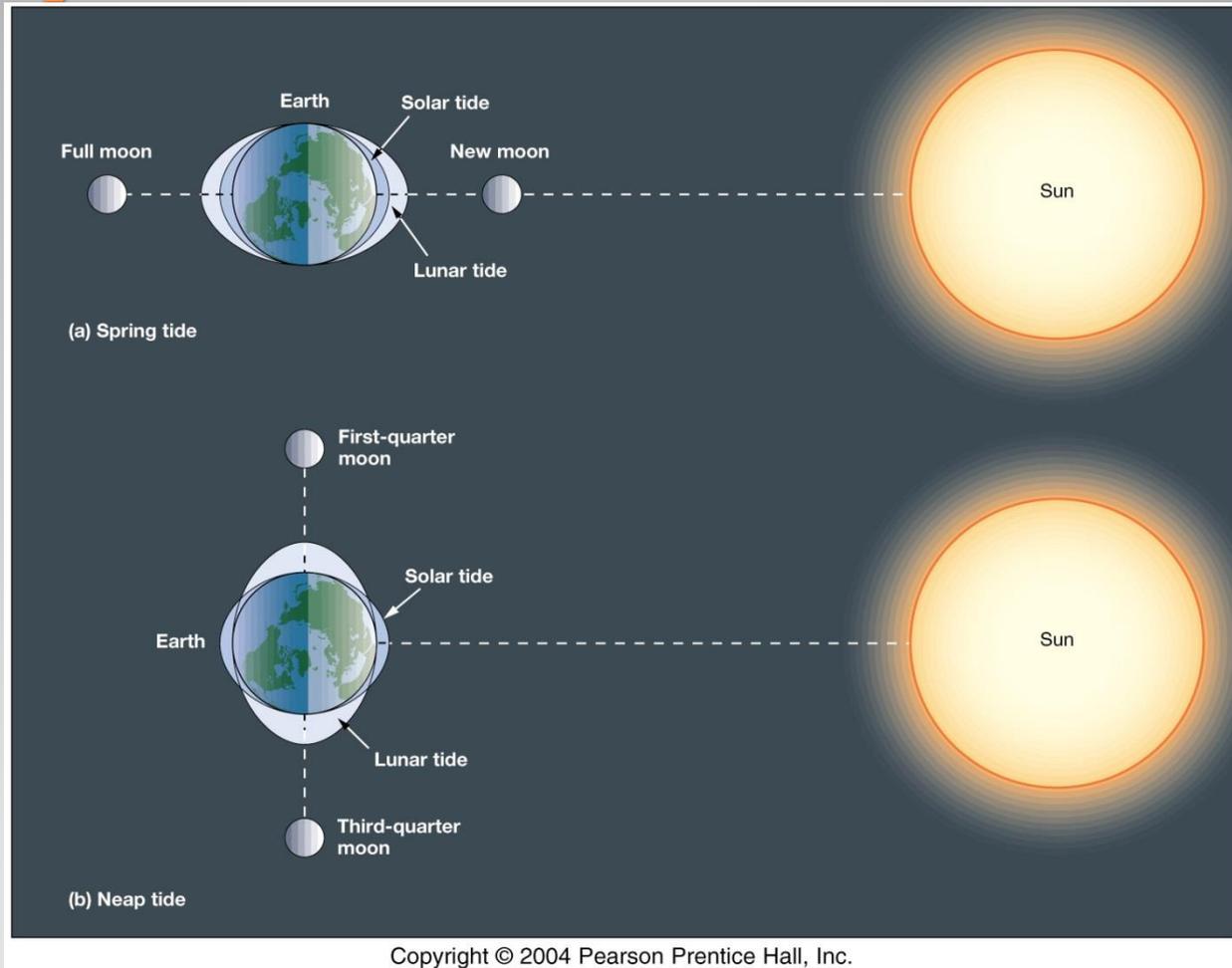
Why are there low tides on opposite sides of Earth at the same time?

Each location on Earth sweeps through two high tides and two low tides in a 24 hour 50 minutes - cycle.



Click on picture for animation.

Monthly variation in the tidal bulge

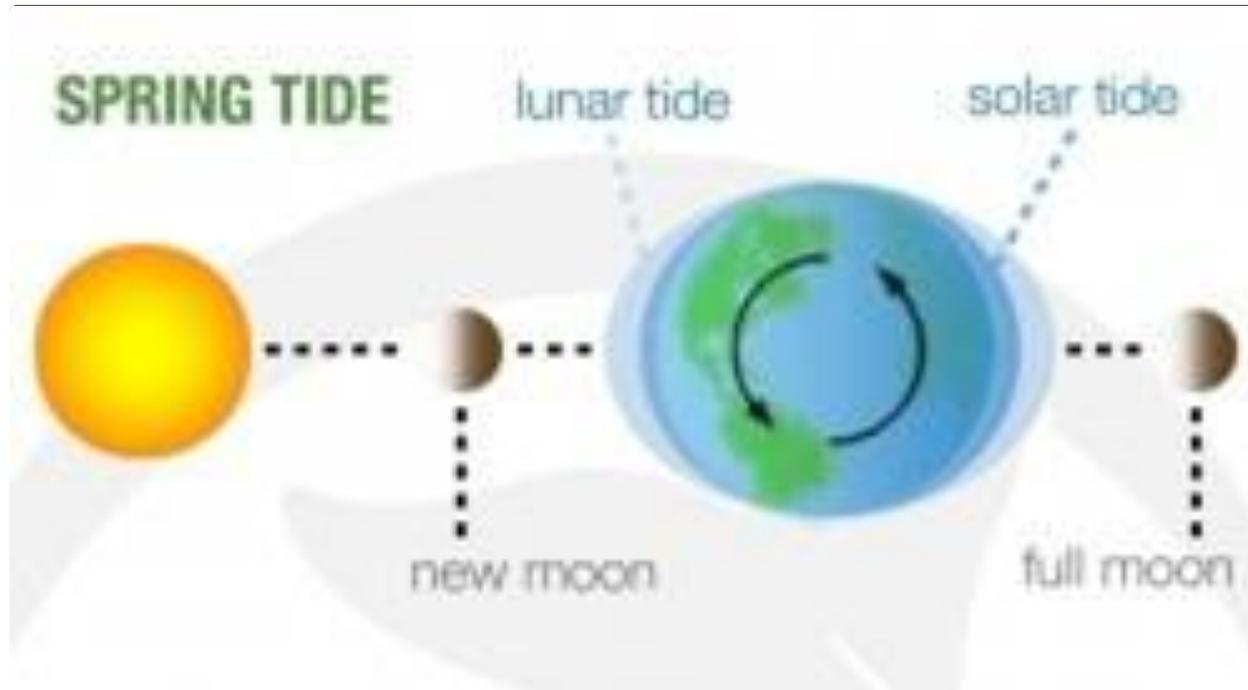


[Spring and Neap tide animation](http://www.nos.noaa.gov/education/kits/tides/media/supp_tide06a.html) ← click here!



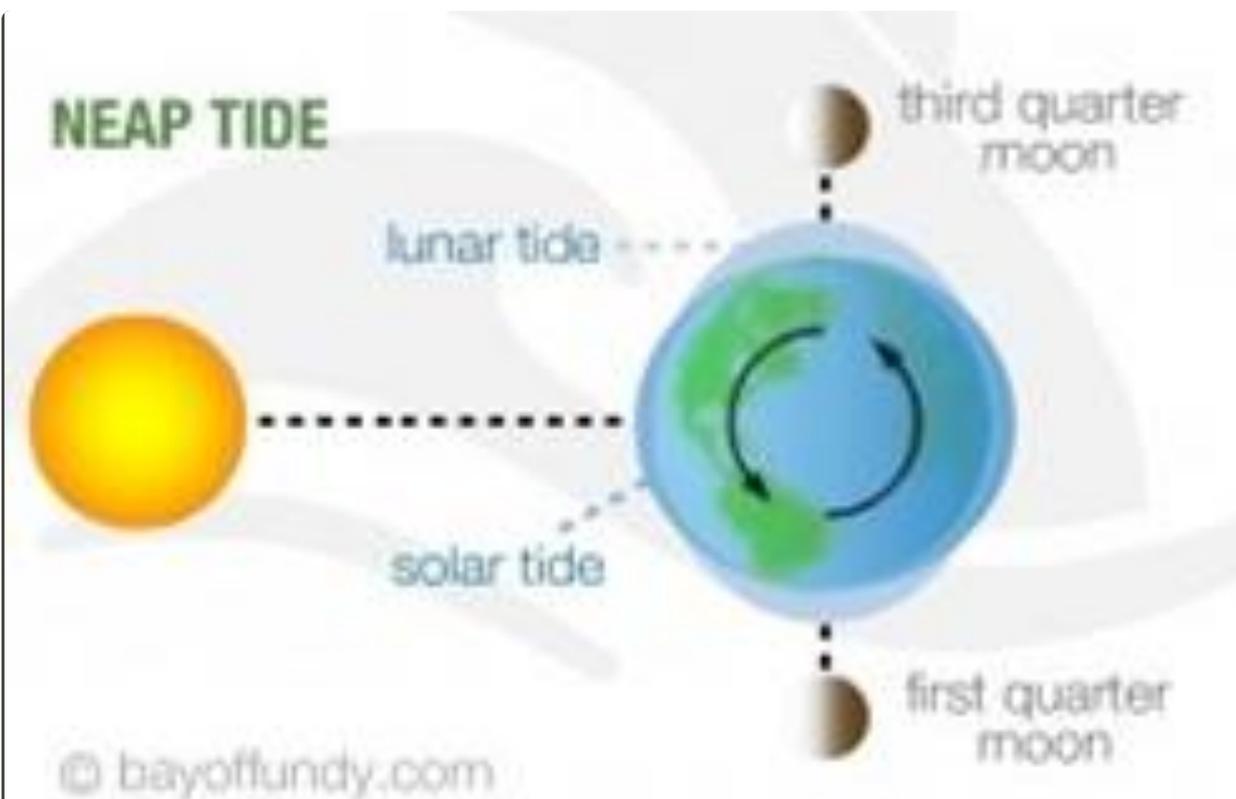
- A Spring tide is a tide with the greatest difference between low and high tides.
- The sun and moon pull Earth's water in the same or opposite directions.

What is a spring tide?



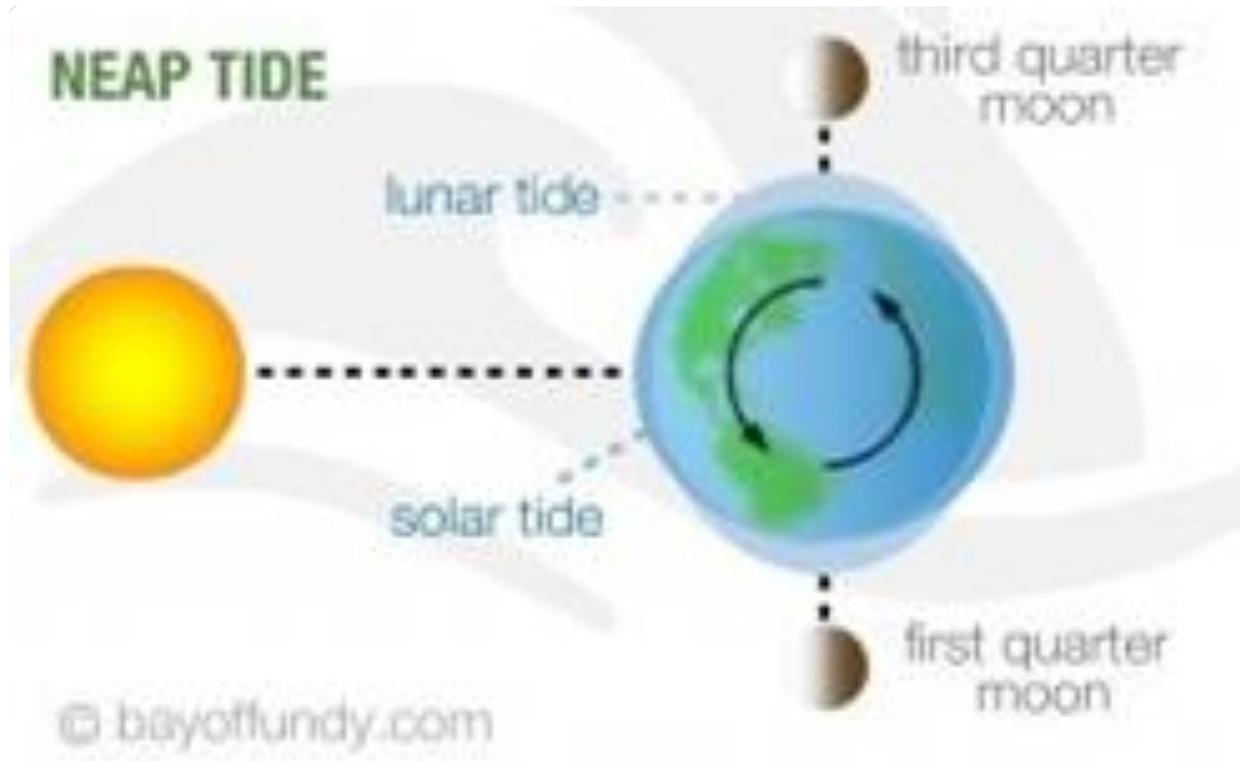
**New Moon
and
Full Moon**

**Which two phases of the moon
cause spring tides?**



- 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 is a neap tide?



**First
Quarter
and
Third
Quarter**

**Which two phases of the moon
cause neap tides?**

Name that:

1. Lunar Phase

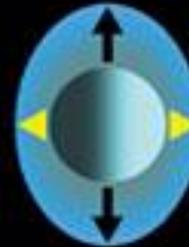
2. Tide

A



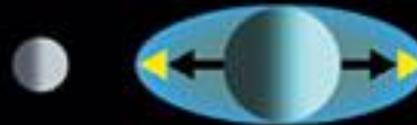
7 DAYS LATER

B



14 DAYS LATER

C



21 DAYS LATER

D

