

# Tide facts

Both the sun and the moon exert a gravitational pull on the earth. Although the pull is not strong enough to have any observational effect on solid objects like rocks and buildings, it is strong enough to have a visible effect on the world's oceans.

The ocean on that part of the earth that is facing the moon each day is pulled out by the force of the moon's gravity, producing a bulge, which is the high tide.

At the same time the spinning earth throws water on the opposite side of the earth into another bulge.

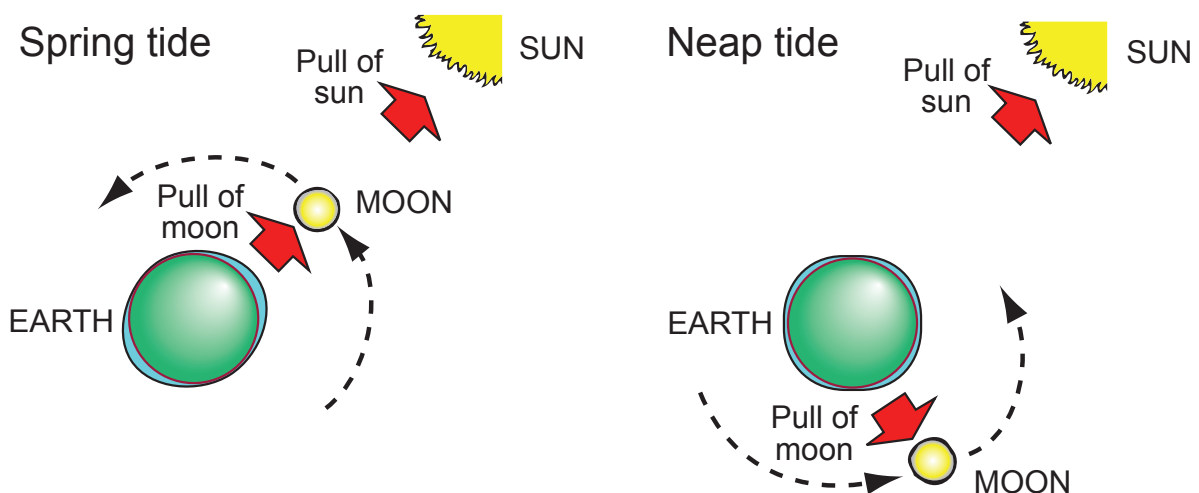
Water to fill these bulges is taken from the ocean waters between these bulges to produce low tides in those areas.

The sun also exerts gravitational pull on the earth but its pull is weaker.

Twice each month the sun and the moon are in line with the earth so their gravitational pulls combine to produce a much greater pull. The stronger pull produces a much greater bulge in the ocean, causing large tides, called spring tides. These have nothing to do with the seasons.

On two other occasions during each month the sun and the moon are at right angles to the earth. When this happens the gravitational pull of the sun and moon balance one another. The result of this is a much weaker force pulling on the ocean, producing much weaker tides called **neap tides**.

**King tides** are exceptionally high tides, which occur with the coming of the full and new moon.



*Tell Me How* by Mike Callaghan, Peter Knapp, Ross Latham and Peter Sloan, HBJ, 1990