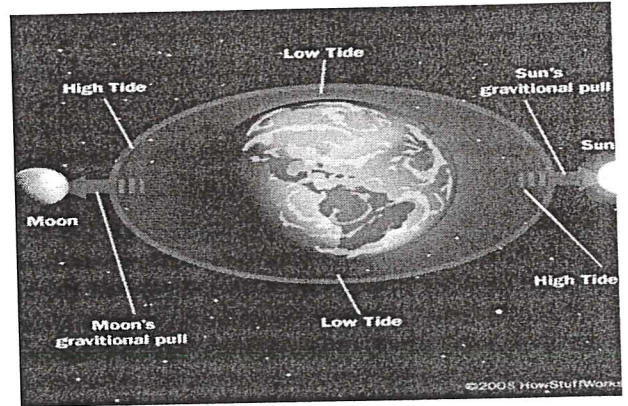


## Earth's Tides

- Tides: daily changes in the level of ocean water
  - Caused by the difference in gravitational force of the sun and moon across Earth → tidal force.
  - Tidal force exerted by the moon is greater than the one by the sun because the moon is closer to Earth.
  - Moon's gravity pulls on every particle of the Earth but because water moves more easily, the pull is much more noticeable on the liquids.
  - Part of Earth facing moon has greater pull so water bulges toward the moon on that side

## High and low tide

- High tide: water level that is higher than the average sea level
  - The bulges that form in Earth's oceans
  - 2 times a day
- Low tide: water level that is lower than the average sea level
  - Water level is lower because the water in high-tide areas
  - 2 times a day
- Tidal range: difference between the levels of ocean water at high tide and low tide
  - Depends on position of sun and moon relative to Earth



## Spring and Neap Tide

- Spring Tide: Highest of the high tide.
  - Created when the sun, moon, and Earth align creating a larger gravitational pull.
  - New and full moon phases
- Neap Tide: Lowest of the low tides.
  - Created when the sun, moon, and earth create a 90 degree angle and negate each other's gravitational pull
  - 1st + 3rd quarter moon phases

