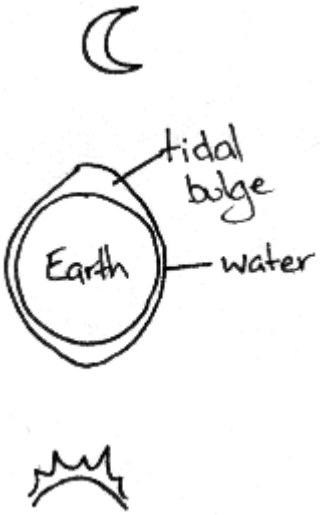
Tides - What makes the tide go in and out?
Updated v2

Fact

- The gravity of the moon is the main influence on the tides.
- The moon's gravitational attraction or pull on Earth creates tidal bulges in the Earth's oceans.
- When the Earth moves into a bulge the water levels rise, which creates high tide, and when it moves out of the bulge the water level drops, which makes low tide.
- The pattern changes to make this occur nearly an hour later each day.
- See the picture to the side. The moons gravitational pull is pulling the water towards it to make a bulge. The sun does it too, but only a little bit because it's so far away



Do you know

- High tide happens every twelve hours.
- Low tides happen between each high tide.
- Scientists believe that the Earth spins because a meteorite, about the size of Mars, hit it over 4500 million years ago. They also believe that the impact of the meteorite broke off a chunk of earth which became our moon.
- Most beaches have a high tide mark and a low tide mark and the tide seldom goes higher or lower than these marks.
- You'll find different types of sea creatures at the two tidemarks.
- Creatures at the high tide mark have to be pretty tough because they have to go without water for up to 12 hours.

Experiments you can do
Make a Tide Simulator

What you need:
A hula hoop
A piece of rope or cord

What you do:
Have someone step into the hula hoop and hold it up around their Waist.
Tie a piece of cord to the hula hoop and have another person hold the other end of the cord.
The person in the hoop is Earth, the hula hoop represents Earth's oceans and the person holding the cord is the moon.
When the "moon" pulls on the cord that's its gravitational attraction to earth.
What happens to the "Earths" ocean?

Slide the rope around the hoop until it reaches the back of the person in the hoop and have the person holding the rope/cord pull it again.

Notice what happens to both sides of the hoop.

Other Investigations
Time the tide.

Next time you make a day trip to the beach take a note of where the high tide mark is.
What stage is the tide at when you first get to the beah?
Is it high or low tide; is the tide coming in or going out?

Does it change while you're at the beach? What happens?

If you're at the beach at low tide, look for creatures living in the area that's uncovered at low tide. Then investigate the creatures that live at the high tide mark. What do they have in common and how are they different?

Jokes
What can't get any wetter no matter how much it rains? The ocean.