

Date: _____

Name: _____

Ocean Tides Experiment

This activity was created by Toni.

Everything in the world with mass has a gravitational field. This means that anything that weighs something, has gravity acting on it so that it stays on earth.

The moon also has a gravitational field - one that pulls on the Earth. Although the Earth is heavy enough not to move because of the moon's pull, water isn't. This means that twice a day, when the moon is closest and furthest from certain oceans, those oceans bulge. The water level of those areas rise, and flood onto the land that is closest to them. This is called a "high tide".

1 Take your scissors and make two small holes near the cup's rim, one on each side.

2 Tie each side of your string through a hole.

3 Fill your cup about halfway up with water.

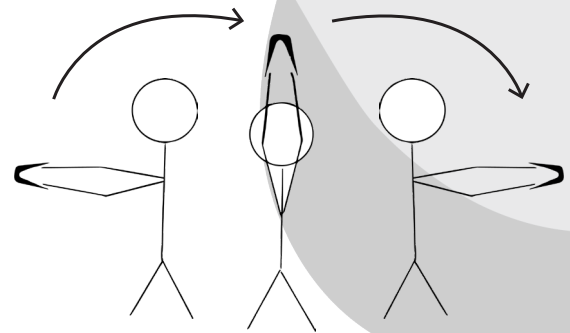
You now have your tide making machine! Take your water filled cup outside so that you have plenty of space to do your experiment.

4 Hold your string with both hands so that your cup of water is dangling close to the ground.

5 Start swinging your cup back and forth, making sure you don't spill any water. When you think you've gained enough speed and momentum, start swinging the cup in a large circle above your head and back towards your feet. If you go fast enough, the water will stay in the cup, even when it's upside down above your head!

MATERIALS

- One piece of string (2-3 feet long)
- One plastic or paper cup
- Scissors
- Water



By swinging the cup at a certain speed, you were able to demonstrate how tides work. Let's look at what's happening inside the cup while you were swinging it.



Just like the oceans when they are being pulled by the moon's gravitational field, the force you created while swinging your cup caused the water to bulge at the sides.