

# Waves

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Waves are all around us! We can see waves in people's hair, as squiggles on a page or in the lines of tree branches but these are not the kind of waves that we will talk about today. Today, we will talk about the waves that transfer energy. We can find these kinds of waves everywhere too; for example, there are waves that allow our microwaves to heat up our food or that pick up sound from radio towers, even light travels in waves and these are the kind of waves that move energy around in our world. Can you think of any other kinds of waves?

We can see how waves move as energy by studying them as they move through water. Can you guess where we might find waves in the water? We can find lots of waves in oceans and lakes and they can teach us about how waves work because we can see how they move in the water! Maybe you've noticed waves while swimming; do you remember how the waves rolled back and forth across the shore or how they lifted you up and down while you were floating in the water? Perhaps you've seen them rolling forward across the sand and you've wondered more about them. Well, today we will take an even closer look at waves.

The top of a wave is called the crest and the bottom of a wave is called the trough. We can measure waves by looking at the distance from one crest to the next or from one trough to

another. We can also measure waves by looking at how high the crest is from the middle of a wave or we can measure waves by looking at how quickly they are moving. (An image here could be useful)

When we look at waves, it is important to remember that the water that we can see isn't the wave, the wave is the energy that is moving through the water and causing it to go up and down. So, where does this energy come from and why does it move through the water? Most of the waves we can see in our oceans and lakes are actually caused by wind. When the wind blows across the surface of the water, it creates friction and pressure, and results in waves. Other kinds of waves can also be caused by the pull of gravity on the earth from the sun and the moon (tidal waves) or by disruption caused by earthquakes and volcanoes (tsunamis).

You may be wondering, if waves move through the water but they don't move the water itself, then why do logs and water-floaties drifting near the shore get pulled up onto the beach? Well, as the bottom of the waves hit the shore, it creates friction that makes the waves tumble over themselves and push objects like the logs and floaties closer to the shore. (An image here could be useful here too)

So now we know a bit more about how waves work and how they can help us to better understand the sea. Can you imagine how other waves in our world might work similarly or differently? How do ocean waves compare to microwaves or radio waves? One thing is for sure, the sea is a whole lot more fun with waves moving around in it.