



Waves are connected particles or oscillators, which are connected. An oscillator is a particle which swings. When a few particles are connected and one of them starts to swing the other particles begin to swing, too. A wave was created.

This explanation is very abstract. Therefore we will use an image again. In order to understand the physical phrase: wave. Imagine a plane lake. Throwing a stone into the lake will create wave in a circular shape around the impact location. Lets connect the this image with the abstract explanation of the beginning.

### Where are the particles or oscillators in this example?

The particles are the water [molecules](#) , which are connected. By watching water, you cannot see the [molecules](#) , but water consists of [molecules](#) .  
(To learn more about the connection of water [molecules](#) , have a look at the wiki-article: [adhesion](#) .)

At least one water [molecule](#) will start swinging, when it is hit by the stone. The stone push it down and triggers the vibration. For sure the stone is big and will hit a lot of [molecules](#) , which start vibrating. If the [molecules](#) would not be connected, just the parts of the water, which is hit by the stone would move. But as we know the wave spread and a lot of water is moved and not only the impact area.

Now we have the connected particles, which are able to vibrate.

### Why can I see a wave, which is moving?

The wave is "moving", because the vibration spreads step by step. The first oscillator is triggered by the stone, the second will be triggered by the first [molecule](#), the third molecule will swing because of being triggered by the second [molecule](#) and so on.

This is the theory of a wave. One very important characteristic of a wave that has to be mentioned is that a wave does not transport material. The [molecule](#) which is triggered by the stone just swings and does not move in the direction of the wave. The oscillators trigger each other but they do not move. What is moving is just the wave or to be more precise the spreading vibration of the first [molecule](#), but not the [molecule](#) itself.

Imagine a Mexican wave. The action of standing up is moving and not each person. Therefore it is not possible to transport material with wave, only energy. In order to trigger a movement, you have to invest energy. The movement spreads, therefore energy spreads.