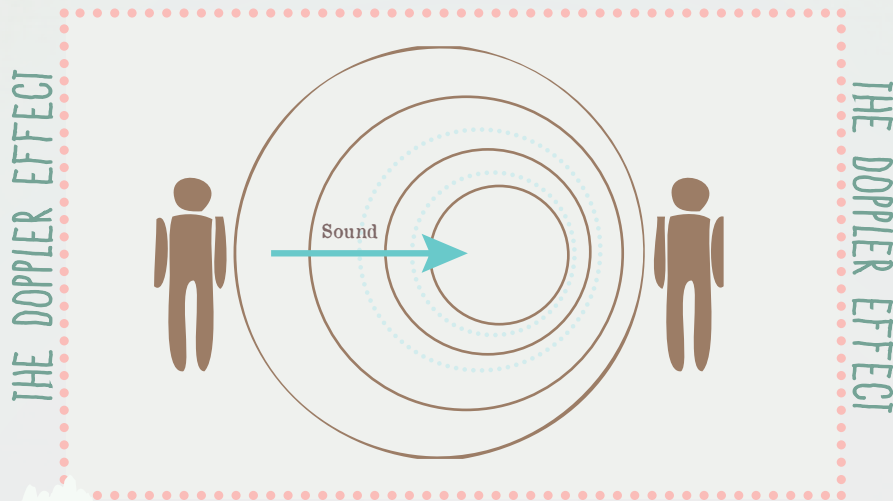


# Moving Sound The Doppler Effect

Ever notice how sound changes and warps as it gets nearer or farther away? For instance, as a train comes closer the sound is high pitched, and it increases in pitch until it passes you. Then when it passes the pitch drops very quickly. This is called the Doppler effect.

## WHAT'S HAPPENING?

The Doppler effect happens because the air in front of a moving object is compressed. That means the air particles are closer together, so the sound waves are closer together and create a high pitched frequency. The air behind a moving object is not compressed.



## THINK ABOUT IT!

We are most familiar with the Doppler effect because of our experiences with sound waves. Perhaps you recall an instance in which a police car or emergency vehicle was traveling towards you on the highway. What do you remember happening as the car passed by? Why do you think that is? Draw an example using the diagram above to show a police car driving by with the sound waves!

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## DID YOU KNOW?

The Doppler effect is actually very useful for astronomers. They are able to get lots of information about stars and galaxies by studying the frequencies of electromagnetic waves that are produced by moving stars.