

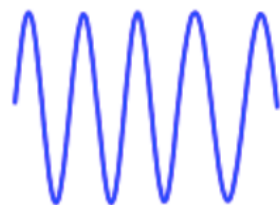
Lesson 5: How can we change the pitch of a sound?

Quick Quiz

1. Bigger vibrations mean that the sound produced will be
 - a. Quieter
 - b. Louder
 - c. Higher
 - d. Lower
2. Smaller vibrations mean that the sound produced will be
 - a. Quieter
 - b. Louder
 - c. Higher
 - d. Lower

The **pitch** of a sound is how high or low it is. A high sound vibrates the air around it faster. A low sound vibrates the air slower.

The soundwaves of a high sound are closer together than those of a low sound:



High frequency soundwave
Faster vibrations = higher pitch



Low frequency soundwave
Slower vibrations = lower pitch

Investigation time: How can we change the pitch of a sound?

Choose the investigation you would like to carry out. You can do more than one!

Bottle:

Blow across the neck of a bottle containing some water and listen to the note.

Add more water. Blow across again. Listen to the note.

To keep the same: the way the instrument is played

To change: the amount of water in the bottle

Elastic band:

Pluck an elastic band. Listen to the note.

Stretch the band tighter and pluck it again.

Listen to the note.

To keep the same: the way the instrument is played

To change: the tension in the rubber band

Ruler:

Vibrate a ruler over the end of the table.

Listen to the note.

Increase the length overhanging the table and vibrate it again. Listen to the note.

To keep the same: the way the instrument is played

To change: the length of ruler overhanging the table

Coat hanger:

Hit a wire coat hanger with a metal spoon

Listen to the note.

Hit a thicker coat hanger. Listen to the note.

To keep the same: the way the instrument is played

To change: the thickness of the coat hanger

Repeat each investigation as often as possible to get a good series of results.

In each case, record whether a sound is higher or lower pitch than the previous one.

Results

Choose how you would like to present your results

Bonus home learning task



Go to : <https://www.youtube.com/watch?v=VxcbppCX6Rk&app=desktop> to find out how old your ears are. Try the challenge with other members of your family!