

STEAM Festival

For Young Learners

An UNTAME Event



Music Makers



Organised by



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Science Centre Singapore

RAINBOW WATER XYLOPHONE

Synopsis

Let's make your own rainbow water xylophone! Learn how you can produce sounds through vibrations and experiment with different water levels to produce different pitches.



Learning Objectives

1. Experiment how different water levels affect the pitch produced
2. Learn that sound comes from vibrations

Materials Needed



Glass cups



Food colouring



A jug of water



Metal spoon

Instructions



Pour the water into glass cups. (Fill the cups with different volumes of water)



Add different food colouring into each cup of water.

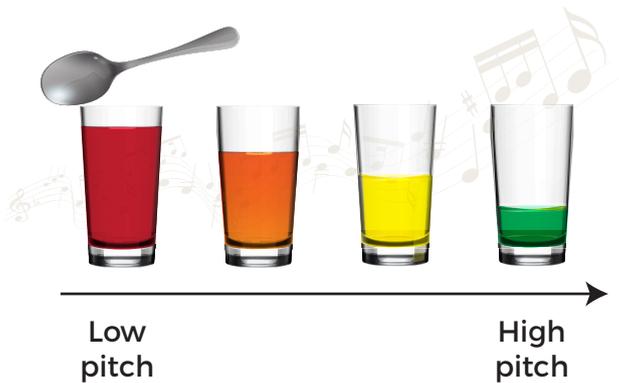


Use a metal spoon to hit against the glasses of water. Have fun playing with your rainbow glass xylophone!

Tip

Use a tuner (or mobile application) to adjust the water level to reach your desired pitch.

Science Facts



When you hit the glass with a spoon, vibrations are produced. These vibrations travel through the air to our ears as sound.

The more water there is, the lower the pitch.

Guiding Questions



Why are there different pitches produced when you hit the glass cups?



What may happen to the pitch if we change the water to other liquids (e.g. corn syrup)?



How does the volume of water affect the pitch produced?

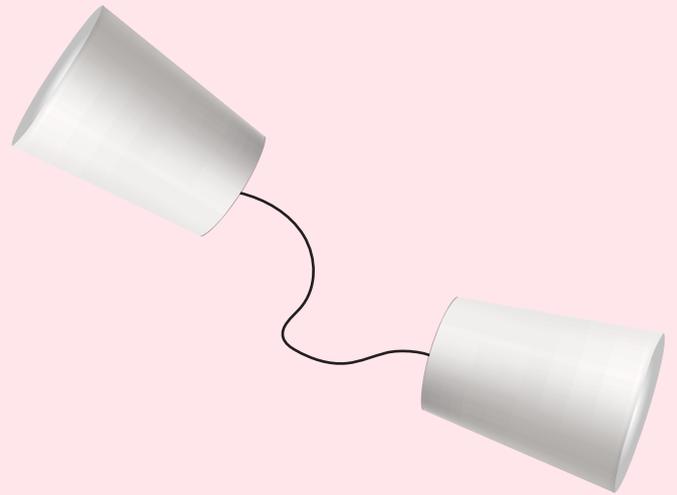
Science At Home



Make a paper cup telephone together with your child using paper cups, strings and some paper clips!

Science fact:

When we speak into the cups, the sound waves produced travel through the paper cups and string as vibrations.



Small Group Learning



Children will be able to "see" sound through vibrations with the following simple experiment.

Materials needed:



Beans



Cling wrap



A mini speaker



Rubber bands



A bowl

Steps:



Play a loud music with the speaker and place it in the bowl.



Stretch the cling wrap over the bowl and secure it with rubber bands.



Sprinkle some beans on the cling wrap and watch the beans dance!