



Singing wine glasses




The activity

Make a musical instrument using wine glasses and water.

ExpeRiment with different amounts of water in the glasses to see how it affects the sounds you can make.

Learn about the connection between sounds and vibrations. Discover how running your finger around the rim of a wine glass produces a musical note.





What you'll need



Special materials

This activity can be done with just a single wine glass, but it can be more fun to experiment with a range of different glasses.

- At least one glass with a stem, like a wine glass
- Water
- Other glasses of different shapes and sizes
- A plastic spoon or wooden spoon or pencil

What to do

Use the plastic spoon or wooden pencil to gently hit the glasses one at a time and see what sounds they make.

Pick a glass you like the sound of and see what happens to the sound it makes when you add different amounts of water to it.

Try making a musical note by holding a wine glass steady and running a wet finger around its rim like Marieke demonstrates in the video.

Try out different shaped wine glasses.

Try adding different amounts of water to a wine glass and see what happens.

Try adding just the right amount of water to make a particular note

Try using more than one wine glass to play a tune.

Questions to ask children

Before each activity: Can you predict what will happen? Why do you predict that? (For example, can you predict what will happen when you hit that glass? Can you predict what will happen if we add water to the glass then hit it?)

Continues >>



**Questions to ask children
(continued)**

What do you think will happen to the sound if you hit the glass a bit harder?

What do you think will happen if you hit a different part of the glass? (Compare hitting the side of the glass with hitting the rim and the bottom)

How does the shape or size of a glass affect the sound it makes?

What do you think will happen if we run a wet finger around the rim of a wine glass?

What happens if we press a little harder?

What happens if we run our fingers around quicker?

What do you think will happen if we try this with water added to the glass?

How does adding water change the sound the wine glass makes?

The science

When we hit a glass, it makes a sound because it vibrates. All sounds are made by making something vibrate. It might not always look like it, but if something is making a sound, some part of it **must** be vibrating. Different objects vibrate in different ways depending on how they are being made to move. The sound you hear depends on exactly how the object is vibrating.

When you run a wet finger around the rim of a wineglass, it repeatedly sticks to the glass and then slides. This makes the glass vibrate and produce a sound. When you do this with water in the glass, both the water and the glass vibrate. If you look closely and try it with a really full glass, you can see ripples on the surface of the water. Changing the amount of water in the glass changes the way it vibrates and this changes the note you hear.



Being safe

- Take care when hitting the glasses to make sure you don't hit them too hard.
- Hold the wine glasses firmly down on the table when running a finger around the rim.
- Don't press too hard. Have a towel on hand to wipe up any spilled water and to dry your hand.

Going Further

You could try and put together a collection of glasses that let you play a musical tune like Marieke does at the end of the video.

You could investigate other ways of making music using household equipment, like blowing across the mouth of a bottle: <http://bit.ly/BottleMusic>

You can read more about the science of sound here: <http://bit.ly/SoundScience>

You could listen to and watch someone play Dance of the Sugar Plum Fairy by Tchaikovsky: <http://bit.ly/SugarPlumWine>

You could read lots more about the physics of singing wine glasses in this report by Anita Nose: <http://bit.ly/WineGlassScience>