

## DIY SCIENCE ACTIVITIES



### SHOUTING BOWL

USE THE POWER OF SOUND – AND YOUR BEST OPERATIC VOICE  
– TO MAKE SALT DANCE!

#### SAFETY:

- Make sure you are using your voice safely! Try taking some long, deep breaths before you start and then warm up your voice by gently humming and/or blowing bubbles in a glass of water through a straw for a minute or two.
- Be careful not to use air to blow on the salt, causing the salt to fly up into your eyes! Just use the power of your voice. If you're still concerned, you could put on some glasses, goggles or other eye protection.

#### WHAT YOU NEED

- A bowl
- Plastic wrap/cling wrap
- A rubber band that will fit around the bowl
- Table salt (not coarsely-ground rock salt. Fine salt works best)
- Optional: some small light objects such as pipe cleaners, confetti, matchsticks etc

#### WHAT TO DO

1. Cover your bowl in plastic wrap so that it is taut and secure it with a rubber band.
2. Sprinkle some salt on top of the plastic wrap – try different formations and amounts of salt and see what changes.
3. Lean in very close to the salt and make a mixture of high- and low-pitched sounds/sing some different notes or songs (without touching the bowl or plastic wrap) and watch what happens to the salt.
4. You may want to try adding other light objects, like confetti, to see what happens.

#### WHAT'S HAPPENING?

All sounds are vibrations, which we can't see with our eyes. As sound waves move through the air, they transfer energy.

The bowl is set up to work a lot like a drum, with plastic wrap stretched tight over the bowl. This 'drum' is very sensitive to sound vibrations. The technical term for a drum is timpanic membrane – if you've heard of a big drum called 'timpani' this is where the word comes from. Your ear drum is designed in a very similar way to a musical drum – the membrane is taut and therefore sensitive to vibrations produced by sound.

The vibrations produced by your voice, or any sound, makes the plastic wrap vibrate, which makes the salt move around, causing it to 'dance.'