# Making Music

## Creating a glass musical instrument

### INTRODUCTION

Glass is a good material to help children explore and understand sound, as it produces a pleasant tone when struck. The sounds produced can easily be altered. In this activity, children will be able to explore making musical sounds by creating vibrations in a glass tumbler, bottle or jar and investigate how the pitch of sounds can change. Children will learn that sounds can be higher or lower in pitch. This activity encourages the children to think about the properties of glass, the sounds it produces when struck and its stiffness compared to other containers made from different materials.

### LEARNING INTENTIONS

- ☑ To investigate how sounds are made
- ☑ To know that sounds are made when an object vibrates
- ☑ To find and describe relationships between the pitch of a sound and features of the object that produced it.

### RESOURCES (PER GROUP)

- 3-5 glass drinking tumblers, bottles or jars
- Water
- Spoon (metal)
- Food colouring (optional)
- Measuring jug

### WHAT TO DO:

Today we are going to be acousticians

1. Ask the children to think about sounds and how they are made, drawing out how all sounds come from vibrating materials.
2. Show the children 3-5 glass tumblers, bottles or jars of the same size and shape.
3. Using a metal spoon, ask the children to strike the glass and listen to sounds that they make. Give the children the opportunity to discuss their observations.
4. Now pour water into one of the glasses and then strike it again. Encourage the children to discuss whether or not the sound changed.
5. Spend some time talking about children's ideas on how different sounds could be made using different amounts of water.
6. Using a measuring jug, pour different amounts of water into the glasses. Food colouring could be added to show the water levels more clearly.
7. Using a metal spoon, the children should tap the glases and listen to the sounds that are made. Can they 'tune' the glasses and place them in order from low to high pitch?
8. The children could record which glass made the lowest-pitched sound and which made a higher-pitched sound.

### KEY QUESTIONS

1. How are the sounds made/what materials are vibrating?
2. What materials do you think sounds can travel through?
3. How can we change the pitch of the sounds?
4. Which glass made the highest/lowest pitched sounds?
5. How do the amounts of water and air in the glass change as the pitch changes?

### KEY VOCABULARY

Vibrate / Vibration
Sound
Pitch
High
Low
Volume

### EXTENSION / FOLLOW UP ACTIVITIES

Children could create a graph to show how the pitch changes during the investigation, by measuring specific amounts of water and creating their own scale from 1-10 to represent the pitch of the sounds.

Children could create their own melody or play a simple tune.

Children could compare the sounds produced by other materials (such as plastic, wood or metal beakers).

Ask the children to think about other ways that a glass can make a sound. They could then explore these practically (e.g. by blowing across the opening of a glass bottle, or making a wine glass 'sing').

### ADDITIONAL RESOURCES (IF REQUIRED):

- Plastic, wooden, metal or ceramic containers

ANTICIPATED ACTIVITY TIME: **15 – 20 MINS**