

Design your own Xylophone

Not your average xylophone with wooden bars – this one uses water!

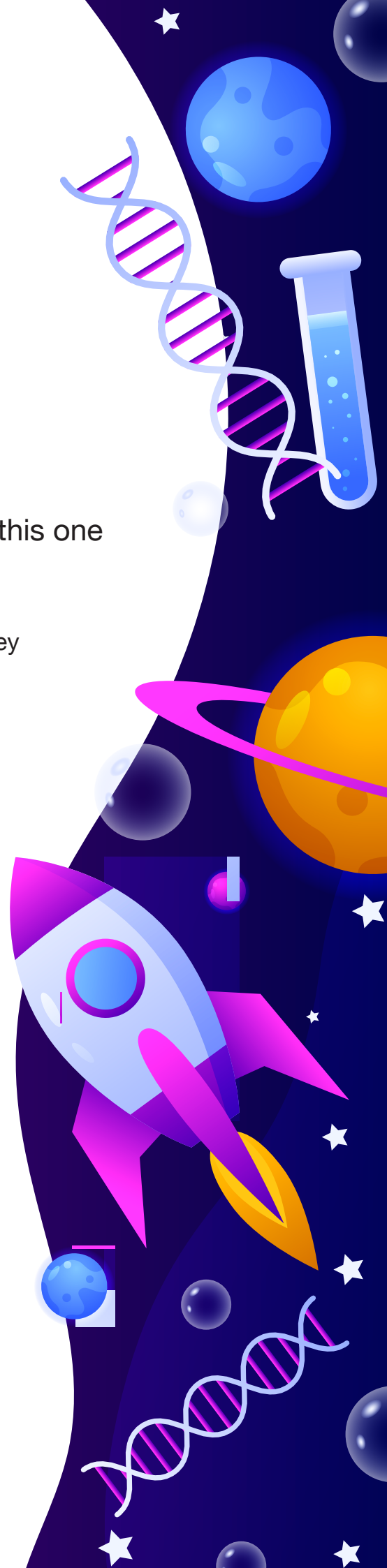
You will need

- Empty glass jars, bottles or sturdy drinking glasses – they must all be exactly the same.
- A large jug of water.
- Food colouring (optional) – water based or gel (not oil based as this will not mix with the water).
- A wooden spoon or pencil.



How to make your Xylophone

1. Line up your jars – I used 4 here but you can use more – as long as they are the same.



2. Start by filling the first jar almost to the top, then fill each jar one by one, decreasing the amount of water each time – the last jar should be almost empty.
3. If you like, you can add a different colour to each jar using food colouring. Stir well!



4. Now you can play - use a wooden spoon or pencil to gently tap the side of each jar. The more jars you have, the more notes you have – see if you can play a simple tune on your xylophone.



What do you notice about the different sounds from the jars depending on how full they are?



The Science Part

When you tap a jar, you make it vibrate. That vibration also makes the air around it vibrate - and that's the sound you hear.

When you add water, that changes how the jar vibrates

- More water = slower vibrations = lower pitch
The larger amount of water slows down the vibrations.
- Less water = faster vibrations = higher pitch
With less water, the jar can vibrate more quickly.

Did you know?

One of the world's leading xylophone players has been profoundly deaf since childhood! Can you find out what helps Evelyn Glennie 'hear' the different pitch on each bar she plays?

