



SUPER POWER: Vibration!

SUPER-HARMONICA

LAB NOTES...

WHAT'S GOING ON?

Both a harmonica and a kazoo are types of musical instruments that use vibrations to produce fun sounds. When you blow into your harmonica, the air from your mouth makes the baking paper vibrate really fast, which makes a squeaky sound!

You might also be able to feel the vibrations as a 'buzzzzzzing' feeling that tickles your lips.

When you hum into your kazoo, the vibrations from your voice make the baking paper wobble which produces a different vibration that makes your voice sound different.

Some musical instruments like the flute, trumpet or harmonica use our breath to create sound vibrations. You can make different notes on the same instrument by changing the vibrations. In your harmonica, you can do this by sliding the rectangle of card along the length of the baking paper. This will shorten the length of the paper that is vibrating and change the pitch of the sound.

TO MAKE A HARMONICA...

- Trace around the outline of a popsicle stick onto a piece of baking paper, and then do the same again so you have two outlines.
- Cut out both outlines. Put them to one side for now.
- Take a sheet of thin card, and cut out two small rectangles about 3cm long and 1 cm wide, and one larger rectangle about 5cm long and 2cm wide.
- Fold the larger card rectangle in half once.
- Fold each smaller rectangle in half twice to create a thick wedge.
- Build your harmonica like a sandwich. Start by putting down one popsicle stick and laying one sheet of baking paper on top.
- Place one small card wedge on top at one end, then the other baking paper and finally the second popsicle stick on top.
- Make sure that your baking paper is flat in the sandwich
- Wrap one elastic band tightly over where the card wedge is to secure the stack in place.
- Build the same stack at the other end, and wrap another elastic band around it.
- Take the larger card rectangle and slide it in between the two layers of baking paper.
- Purse your lips and blow into your harmonica to make a sound!

WATCH & BUILD
20 MINS

AND A KAZOO...

- Roll a piece of plain paper into a tube and tape it in place.
- Cut a square of baking paper big enough to fit over the end of your tube with a bit of space around each edge.
- Cover one end of the tube with baking paper and hold it in place with an elastic band
- Hum (don't blow!) into the open end of the tube.

YOU WILL NEED

- Baking paper.....○
- 3 x small elastic bands.....○
- 2 x flat sticks e.g. popsicle sticks...○
- Scissors.....○
- Thin card.....○
- Plain paper.....○
- Pencil.....○
- Ruler.....○
- Tape.....○

What do you notice about the sound when you move the card rectangle up and down the baking paper in your harmonica?

Can you play different notes, or even your favourite tune on one of your instruments?

If you put your finger on the baking paper at the end of your kazoo, can you feel it vibrating?

What happens if you use something different to baking paper in your harmonica or kazoo?

Investigate using something different like plain paper, tissues or food wrap.

IF YOU HAD A SUPERHERO FANFARE – WHAT WOULD IT BE?

Can you play it on one of your instruments?