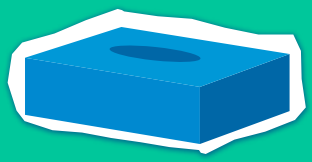
VOID DECK
SCIENCE CENTRE SINGAPORE

LET'S MAKE A MINI SPEAKER!

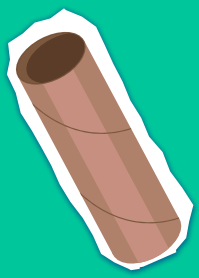
Turn trash into tunes using household items to make your very own DIY Mini Speaker! Give old materials a new purpose and merge science, creativity and sustainability in this activity for curious minds!

MATERIALS NEEDED:

2 paper or plastic cups

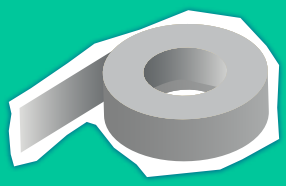


1 empty tissue box



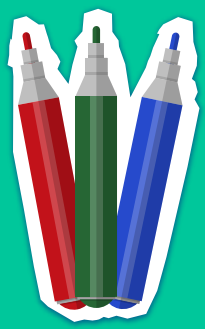
1 empty toilet roll

Scissors



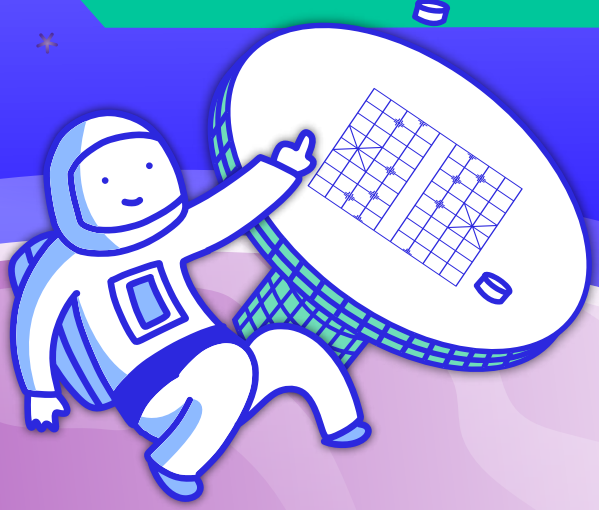
Duct tape or masking tape

Penknife



Coloured markers

Ruler



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INSTRUCTIONS

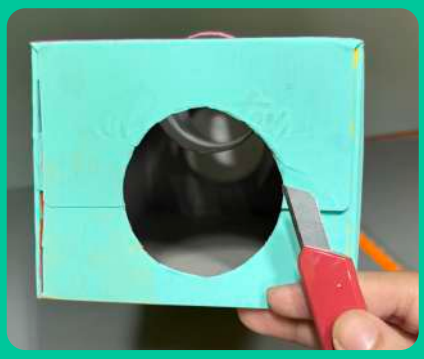
Step 1 Prepare the box base

Remove any plastic film inside the tissue box opening. Let children decorate the tissue box with stickers or drawings to make it 'theirs'.

Step 2 Trace the tissue box

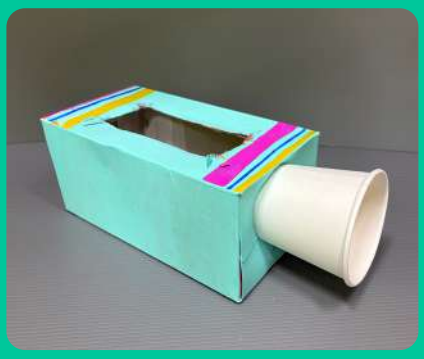
On each short side of the tissue box, trace the rim of a cup. (Make the traced circle a little bigger so that the cup can fit in nicely!)

Step 3 Cut the traced hole



After you finish tracing the cups, gently use the pen knife to cut along the lines.

Step 4 Add the speaker horns



Cut a hole at the bottom of each cup. Push the cups into the two box holes on the sides. Tape the cups securely inside and out.

Kids STOP sometimes Adults Allowed!
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Step 5 Cut the Sound Tunnel

Cut a hole on top of the box to fit the toilet roll. Make a phone-sized slot in the toilet roll (about 1.5 cm x 5–6 cm).

Step 6 Secure the Sound Tunnel

Tape the toilet roll into the hole on top of the box, making sure the slot faces upward so a phone can be inserted.

Step 7 Insert and test

Align the sides of the toilet roll with the sides of each paper cup. Make sure everything is connected for sound to flow through. Insert a phone into the slot and play your favourite song!

Step 8 Design Final Product

Let children decorate the tissue box with stickers, drawings, paint or scrap paper and you're done!

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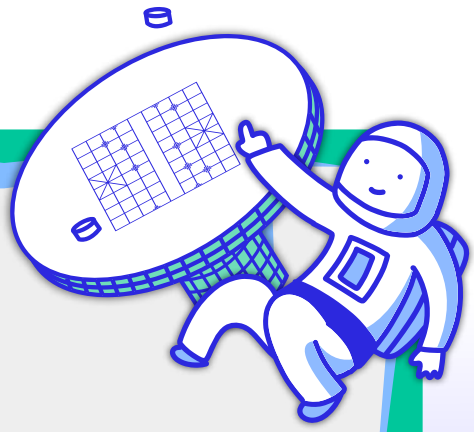

HOW IT WORKS?

This DIY speaker doesn't use wires or batteries. Instead, it uses acoustic amplification, a fancy term for how sound can be made louder just by shaping and directing it.

When you place your phone in the cardboard holder and hit play, the sound travels through the toilet roll, into the tissue box and out the cups, just like how a megaphone works. It's a fun way to explore how sound travels through vibrations and materials.

LET'S THINK!

- How does the sound change when it travels through the cups?
- What happens if we block one of the cup openings?
- How are we helping the Earth by reusing things instead of buying new items?

This simple project isn't just about making something cool, it's a chance to spark wonder and connect everyday play to the world of science. Plus, who knew old tissue boxes had such good vibes?

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