

Sounds of the Universe.

Children listen to sounds made from real space data, make something inspired by one, and add it to a shared sound map.

Electronics

Type

4

Parts to the station

6

Printables

2

Boards

What it is

Four places

- the **listening station**, iPads and headphones
- the **information display** on sonification
- the **making table**, with the testing board
- the **sound map** installation

A creation

A made thing with one conductive touch point. Touching it on the map plays its sound. The map fills through the day.

What it is made of decides whether it works.

Explore



Listening station

iPads run the Sounds of the Universe programme. Children tap the buttons, listen on headphones, and choose one sound to make from. The sonifications are from NASA and ESA.



Information display

Context on sonification and the individual sounds, for parents and older children.

YOU CAN SAY

What is a sonification?

Scientists turn information from space, like the brightness, position or movement of things, into sounds we can hear.

Listen, and imagine what created them.

Make

EXAMPLES

The sound map so far

Creations go on the area for their sound.

The two trays

Tested materials sorted into Conductive and Not conductive.

The printed sheets

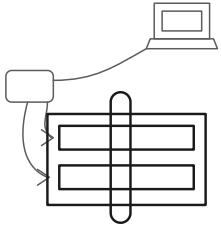
Six sheets, one print job.

The six, and where each goes

TECHNIQUES



Materials Testing



A Makey Makey on the testing board, running the Is It Conductive? experiment: two foil strips on card with a gap, one clip to each. A material laid across the gap closes the circuit.

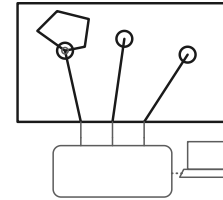
The child is not part of it.

Children sort what they test into the two trays, and use a conductive material as the touch point on their creation.

Nothing happening means the USB is out, a clip is off its foil, or the material is not touching both strips.



Sound map



A large cardboard installation wired to a Spoke Board, one path per sound into its own terminal.

A plain circle is an empty touch area; the ringed one has a creation joined on. The dotted line stub is the link to the computer, behind the panel.

YOU CAN SAY

Which materials can we use to trigger a sound? Some materials carry electricity. These are **conductive**.

Try it: choose a material, place it on the testing board, and see if it completes the circuit.

YOU CAN SAY

What does this sound make you imagine?

- Is it: rough, smooth, crunchy, hollow, sharp, fuzzy, echoing or heavy?
- Does it: ring, buzz, hum, crackle, tick, drift or rumble?

YOU CAN SAY

Explore the map! Touch the creations to hear the sounds that inspired them.

STEPS

- 1 Make something inspired by the chosen sound, from the conductive, craft and recycled materials. It can be a place, object, creature or abstract shape.
- 2 Find the path on the map for that sound.
- 3 Connect the creation to the path with split pins, copper tape or crocodile clips.
- 4 It is now part of the installation.

Reset the Spoke Board when a creation or a button is added. This may need facilitator support.

Setup

MATERIALS

Making

- conductive materials
- craft materials
- recycled materials
- split pins
- copper tape
- crocodile clips
- trays

Boards

- Spoke Board
- Makey Makey
- extension lead

Listening

- iPads
- headphones

Print

- six sheets, one print pack

Made in advance

- sound map installation

SETUP

Spoke Board and Makey Makey behind or under the installation, out of reach. Leads against a wall or under the table, taped down.

Test one creation through the whole path before the doors open: touch it and hear the sound it was made from.

RESET BETWEEN CHILDREN

Reset the Spoke Board whenever a creation or a button is added.

Trays tidied, split pins and clips back in the tin.

Safety

Hazard	Who it reaches	What we do
Mains electricity	Everyone at the station	The Spoke Board, the Makey Makey and anything they plug into stay behind or under the installation, out of reach. An adult at the station whenever it runs.
Trailing leads	Everyone, including under-5s	Against a wall or under the table, taped down along the length. Not across a walkway.
Split pins and crocodile clips as small parts	Under-5s	Handed out at the table, not left in an open tray. An adult at the making area.

Notes

- **How the Spoke Board reaches a computer is not written down.** Cable or Bluetooth, and how it is powered, decides where the mains lead runs. Settle it before the leads are laid.
- **Which sonifications are on the iPads.** One path per sound, so the sounds set the number of paths.
- **What happens to a creation at the end of the day**, taken home or left on the map.