**Designing and developing digital outcomes: Exemplar 4**

**PROGRESS OUTCOME** **1**

# Bottle-cap music

## Annotation

Priya and Angus show that they:

- can identify the inputs and outputs of a system
- understand that when we give a digital device an input, the device processes it and produces an output
- can use an application to create original content.

## Background

The students have been exploring how a Makey Makey® controller can act as an interface between a conductive material, digital devices and software. This has strengthened their understanding of inputs and outputs. It has also supported them to build on their science learning about circuits.
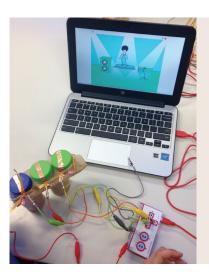
## Task

The students are given a brief to design and create a musical instrument out of everyday objects. They are to construct a Makey Makey controller circuit along with a program in Scratch Junior that will process the Makey Makey's commands to produce a sound. The musical instrument will provide the input and the sound will be the output.

The students are shown how to use an input part of the Scratch program (an event block) and an output part of the program (a sound block) in Scratch – for example:

## Student response

Priya and Angus use cardboard and bottle caps to make their instrument, and they connect it to the computer through a Makey Makey controller. When the bottle caps are touched, they hear the corresponding sounds they have programmed in Scratch.



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|---|---|
| **Mrs Kendall:** | *What are your inputs?* |
| **Angus:** | *The bottle caps.* |
| **Mrs Kendall:** | *What are your outputs?* |
| **Priya:** | *The sounds.* |
| **Mrs Kendall:** | *What is the digital device that turns your inputs into outputs?* |
| **Priya:** | *The Makey Makey. But the Scratch program we put into the computer helps too.* |

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