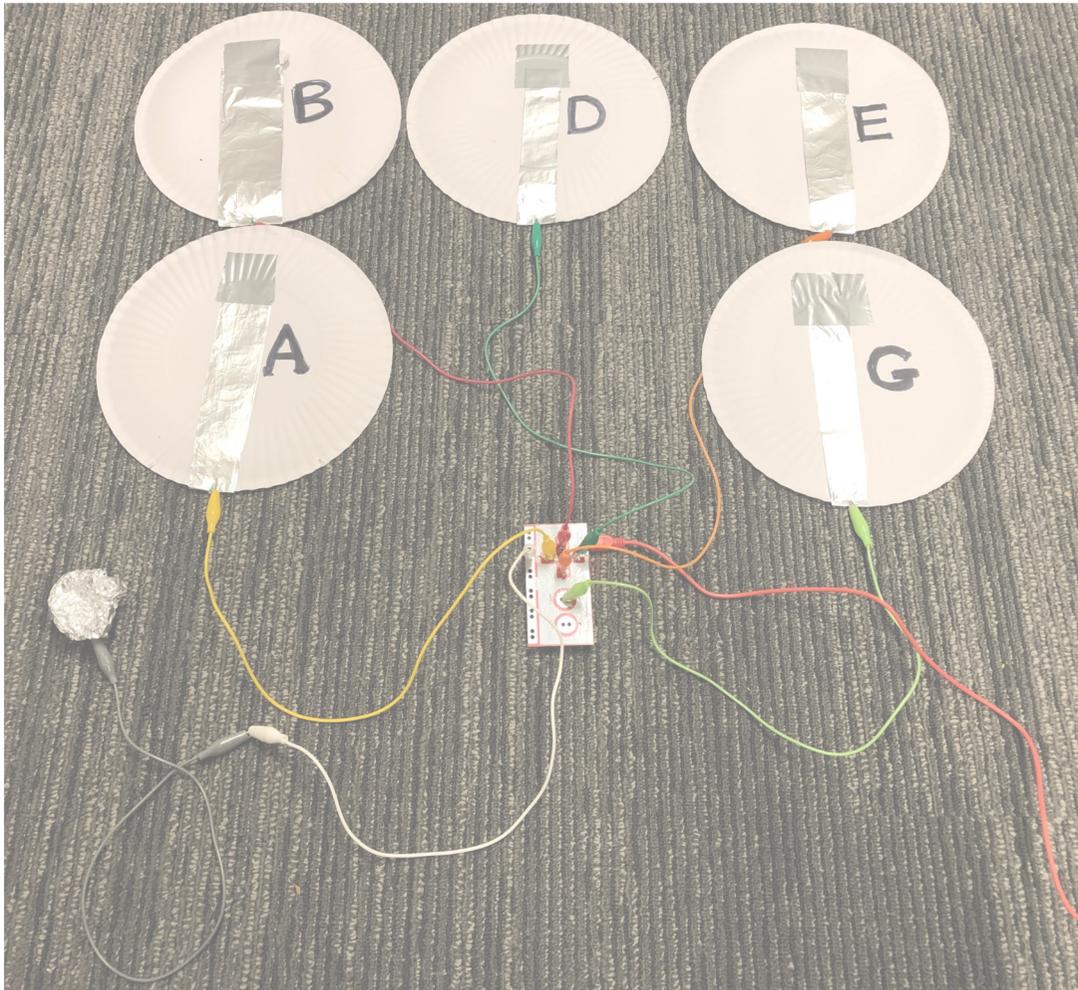




OurKidsCode
FAMILY CODING CLUBS

- 1 Setup
- 2 Warm up
- 3 Create
- 4 Share
- 5 Reflect
- 6 Plan



Dance Mat

Make a dance mat toy which plays musical notes when you step on the plates.



ourkidscode.ie/dance-mat

What you need

- Paper plates & foil
- Pencil and paper
- Sticky tape
- Colouring Pens
- Makey-Makey



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Science
Foundation
Ireland **sfi**
For what's next



Rialtas na hÉireann
Government of Ireland



Dream Space™

Be positive

1. Read the words below together as a family.
2. Write or draw what each of you is most interested in.
3. Write some kind words or draw pictures.
4. Write or draw one good thing each of you has done recently.



1 Setup

Discuss what jobs you will do in your team

An **organiser** sees that everyone is involved, writes down an agreed plan of what to do in what order, checks that it's working, changes it as needed and makes sure that you all start and stop at the right time.

The task for a **designer** is to draw & note down the team's agreement on what the challenge is and on how you will make it look and work.

A **coder** operates the computer to place blocks together to make the sequence of steps that make it work.

A **maker** cuts materials, fixes together and decorates.

A **reviewer** checks that all is good by asking:

1. Does it look right?
2. Is it working?
3. Are there steps missing?

Choreography

1. Each family takes five paper plates, turns them upside down and labels them A, B, D, E & G at the top of the plate. This is the basic dance mat (which will become the musical dance mat later when we add music).
2. Now try the dance on the right, with L = left foot, R = right foot and the letters = the plate to step on.
3. Next make up your own dance and 'code' it by writing the sequence of steps using the same symbols as in the one you just tried. Your dance code can even make you spin around!
4. Having choreographed and rehearsed your dance, swap dances with another family and challenge each other to perform it.

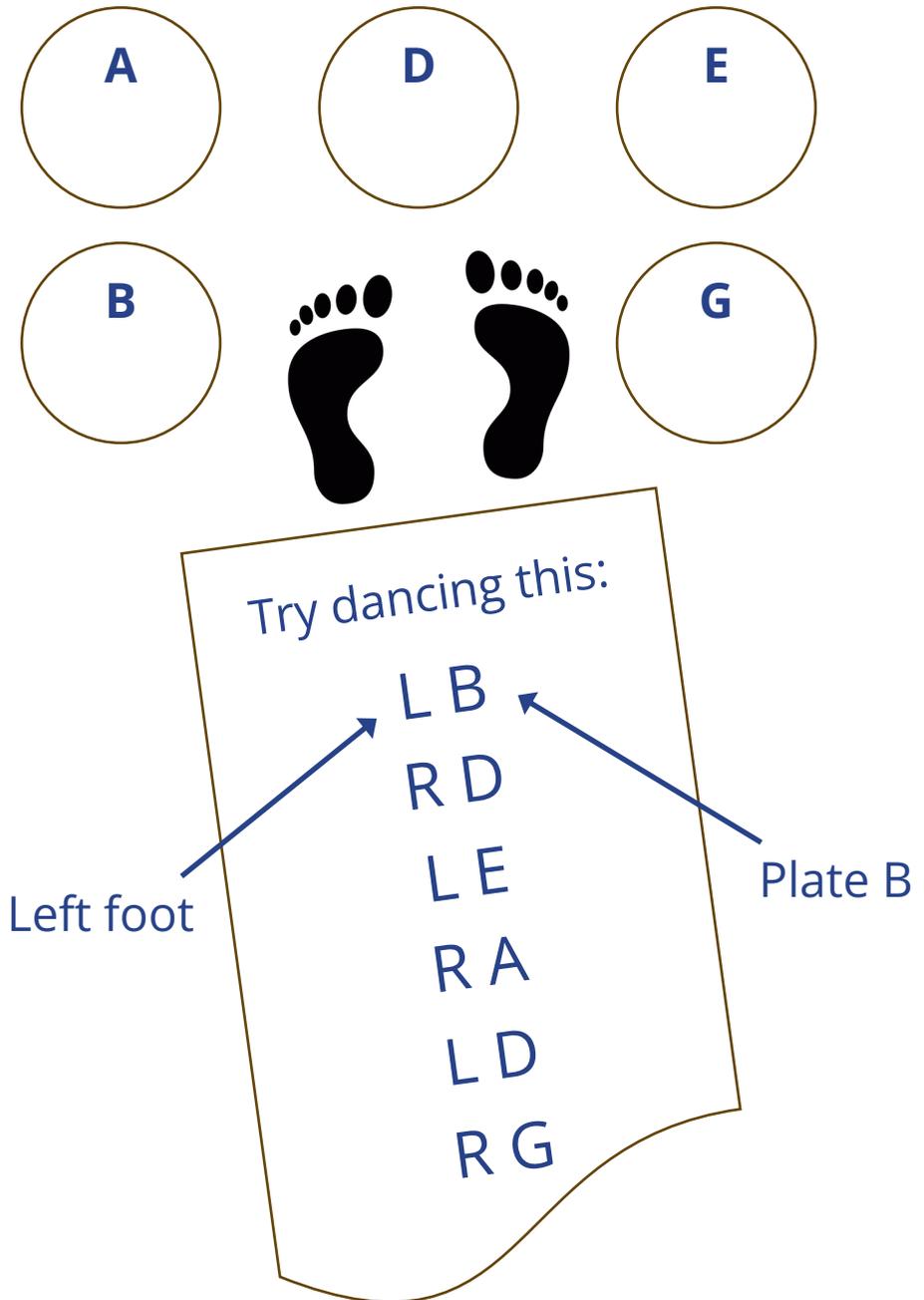
What's the idea?

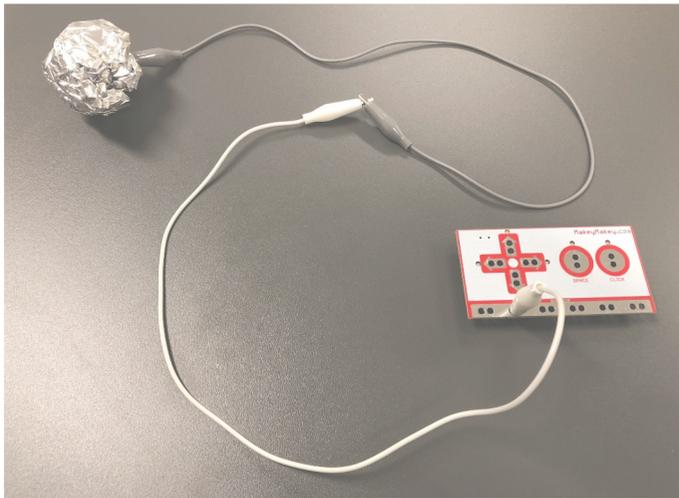
Choreographing the dance helps us to know how coding works as a sequence of instructions. When we try to dance the code, this can help us find and fix errors in code.

By rehearsing our dance and then challenging others to perform it, everyone is on their feet, active and losing inhibitions before settling down to more serious collaborative work.

2 Warm up

Paper plates on the floor:



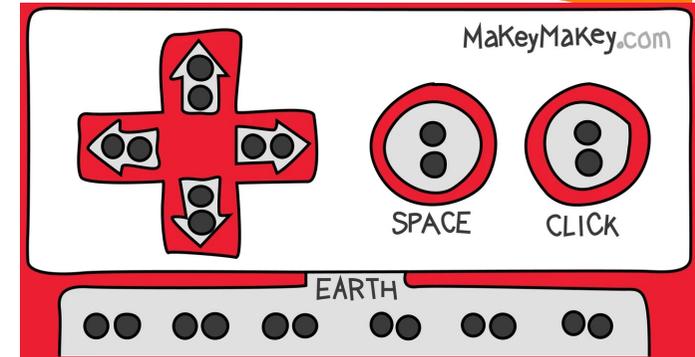


For each of your five paper plates:

1. Cut about 30cm of foil and fold along the length twice to make a strong strip.
2. Position the foil across the centre of the plate and wrap one end of the foil strip to the under side of the plate.
3. Stick the foil to the plate using tape to secure.
4. Clip a crocodile clip to the foil on the edge of the plate.
5. Clip the other end to the two holes for one of the 'arrows' or 'space' on the Makey Makey.
6. Connect the Makey Makey with the USB cable to the computer.
7. Hold the 'earth' on the Makey Makey and touch the foil on the plate - a light shows it is working.
8. Roll some tape, sticky-side out, to stick the plate to the floor.
9. Clip two crocodile cables together, clip one end to earth and the other to a ball of foil.

3 Create - make

Maker job



On step 5, speak to the Coder to check which plate should be connected to which holes on the MakeyMakey

Reviewer job

Test the Dance Mat

The final test is to try out a dance, but now with sounds!

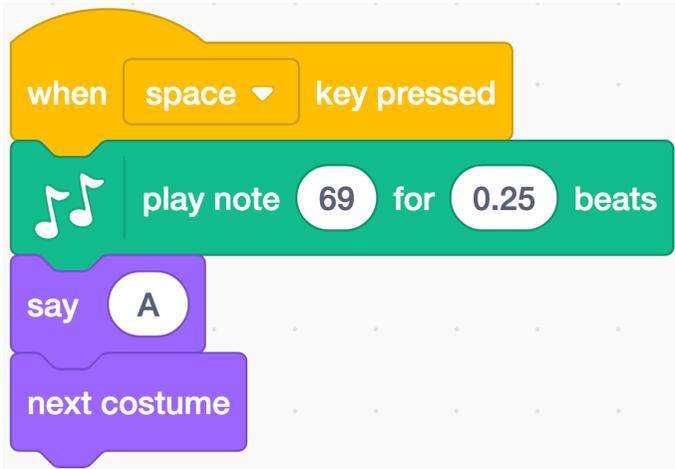
Try 'Old Macdonald Had a Farm':

G G G D E E D B B A A G

Invite other families to play with you, and look at their dance mat

Connect to the Scratch website:
scratch.mit.edu

1. Click 'Start Creating' and close the tutorial at the bottom.
2. 'Add Extension' at the bottom left and choose the Music extension.
3. You should now see a new icon which lets you use music commands in your program.

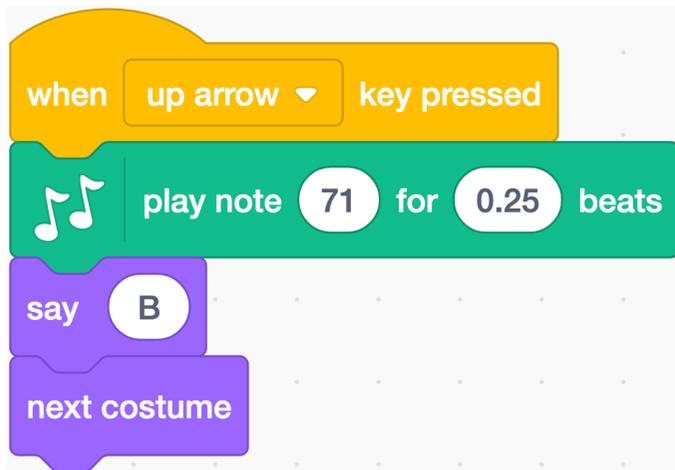


when space key pressed

play note 69 for 0.25 beats

say A

next costume

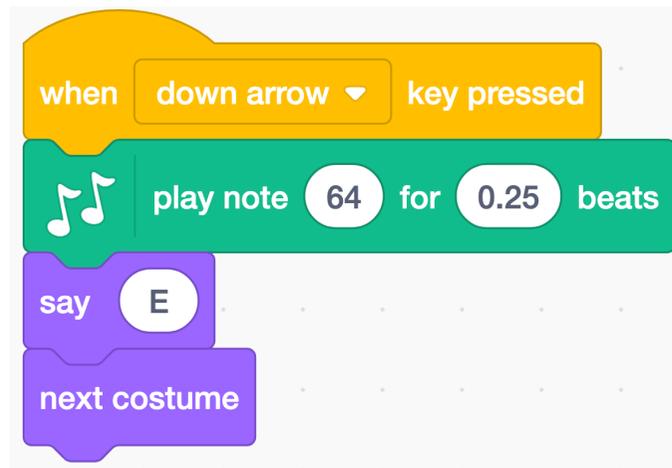


when up arrow key pressed

play note 71 for 0.25 beats

say B

next costume

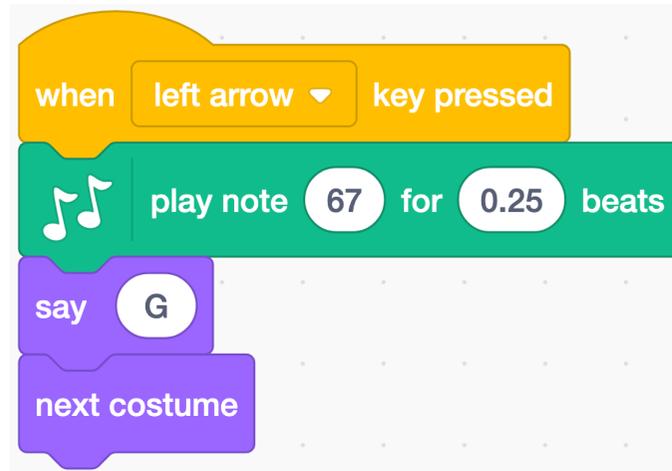


when down arrow key pressed

play note 64 for 0.25 beats

say E

next costume

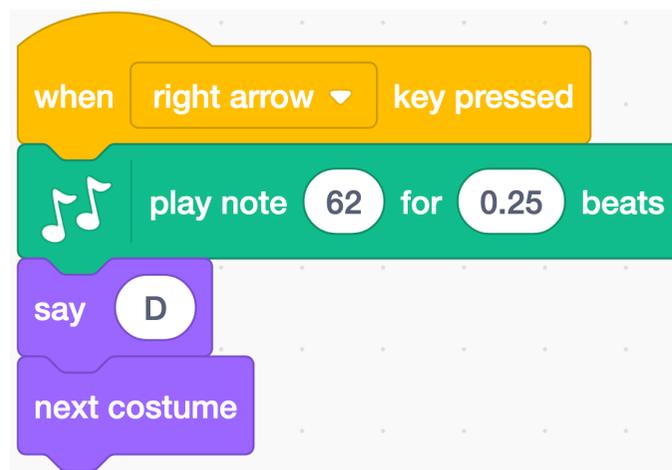


when left arrow key pressed

play note 67 for 0.25 beats

say G

next costume



when right arrow key pressed

play note 62 for 0.25 beats

say D

next costume

3 Create - code

Coder job

Help: Watch the making video at:
ourkidscode.ie/rock-paper-scissors

Speak to the Maker to check that they know which plate to connect to which holes on the MakeyMakey

Reviewer job

Test the program

Connect the Makey Makey to your device using the USB cord. Hold the 'Earth' strip in your left hand and touch the 'Space' pad and 'Arrow' pads with your right to see if it plays the notes you want.

4 Share

Play with what you have made.

Show it off to everyone else!

Look at everyone else's work and ask how it went for them.

5 Reflect

Please **fill in the reaction form** once for each person:



ourkidscode.ie/reaction

Discuss with everyone in the room what you felt and what could you do in future.

Did you have fun?

Learn anything? More confident?

Think you and your family might like to do more?

6 Plan

OurKidsCode offers a free training program for parents who want to get a creative computing club started in their local Broadband Connection Point community centre.

Starting a club requires a minimum of two families who would like to work together and are open to inviting more families to join them at their community centre.

If you'd like to know more, please contact us:



contact@ourkidscode.ie

What other families have said:

"It's great to have a club for kids who aren't sporty to get involved in."

"I was surprised we could organise this, but by working together with another family and with the help of my kids we did it! The support is out there!"

"My son and daughter love it..."

"We struggled with technical problems but simply had to learn to be calm and carry on. Even when it didn't work at first, we persisted and learnt a lot."



Acknowledgements and copyright

'Dance mat' © 2023 by Richard Millwood with Nina Bresnihan, Glenn Strong, Lorraine Fisher, Louise Caldwell, Mary O'Mahony, Grace Kelly, René O Malley and Sarah Chapman is licensed under Creative Commons: Attribution-NonCommercial-ShareAlike 4.0 <https://creativecommons.org/licenses/by-nc-sa/4.0/>