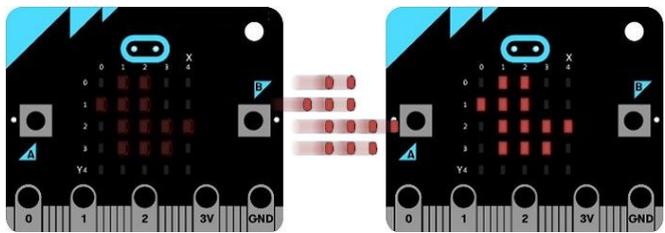


Teleporting Duck



In this activity you will make a duck move from one micro:bit to another, as if by magic!

Objective:

- Send a duck image to another micro:bit when it is shaken

Learning Outcome:

- Program your BBC micro:bit to send radio signals.
- Program your BBC micro:bit to respond to received radio signals.

Level of Difficulty:

- Intermediate

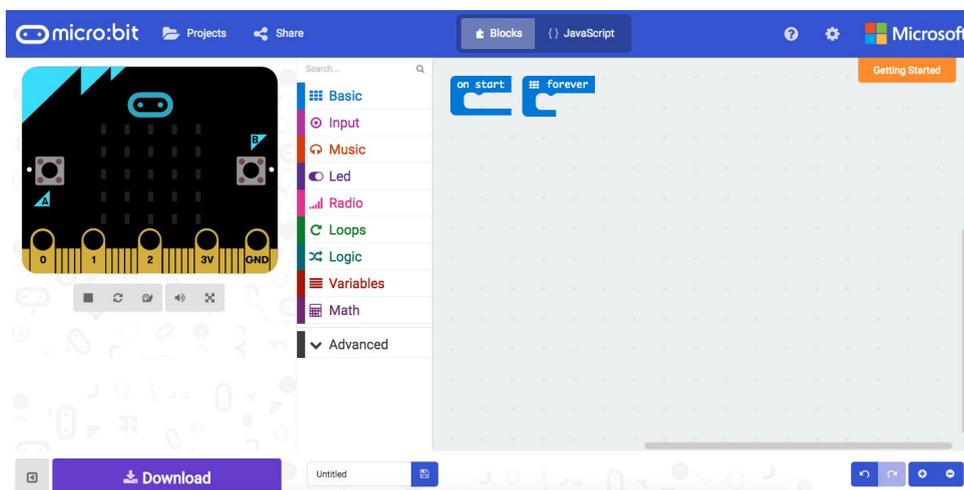
You will need 2 or more micro:bits for this activity. When you shake your micro:bit it will send a signal to a randomly selected micro:bit using the radio feature. If your micro:bit receives the radio signal from another micro:bit, it should show the duck image.

Coding

Step 1

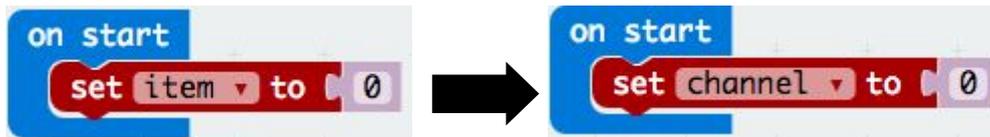
Start by opening the [micro:bit editor](#).

You should see a blank editor.



Step 2

From the  **Variables** section, drag in a “**set item to**” block into the “**on start**” block. Then rename **item** to **channel**.



In your group, give each person a different number from 0 upwards. For a group of four there will be 0, 1, 2 and 3.

Type your number into the **set channel to** value.

Step 3

From the  **Input** section, drag in a “**on shake**” block. Inside that, from the  **Basic** section, drag in a “**clear screen**”, and from  **Radio** drag in “**radio set group**”, “**radio send string**” and another “**radio set group**”.

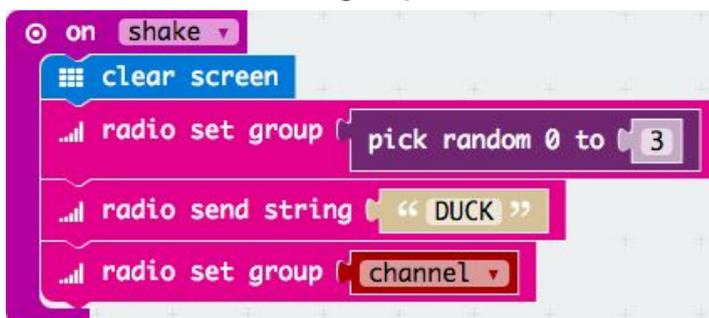


Step 4

For the first **radio set group**, from  **Math** add a “**pick random 0 to ...**”. Set the number to the number of **other** people in your group. So if there are 4 of you in total, set it to 3.

For the **radio send string**, type in **DUCK**.

For the second **radio set group**, add the variable **channel**.



This will send a trigger signal to a random micro:bit whenever you shake your micro:bit.

Step 5

From  **Radio** add a “**on radio received receivedString**” block. Inside that, add a “**show icon**” block and choose the duck icon. Or you can draw your own duck using **show leds**.



Great Work!

Test this out on your micro:bit by clicking  and copy the file to your micro:bit using the USB cable. Make sure the other members of your group have done the same and get shaking!

Challenge

At the moment, when you shake there is a chance that the channel number chosen at random will be your own. Try using a **while loop** to set the group to a different number if it is the same as your channel number.

You might notice that anyone in the group can send a duck, even if they don't already have it. Can you change the code so that the only time you can send the duck signal is if the duck is already on your micro:bit?