

micro:bit Doorbell



In this activity you will make a doorbell system using two micro:bits. One will act as the button on the door and the other will act as the alert. You can complete this activity in pairs because the code on each micro:bit will be the same.

Objective:

- Pressing a button on one micro:bit will send a radio signal to another micro:bit which will then display an alert.

Learning Outcome:

- Program your BBC micro:bit to react to an input
- Send and receive radio signals
- React to radio signals

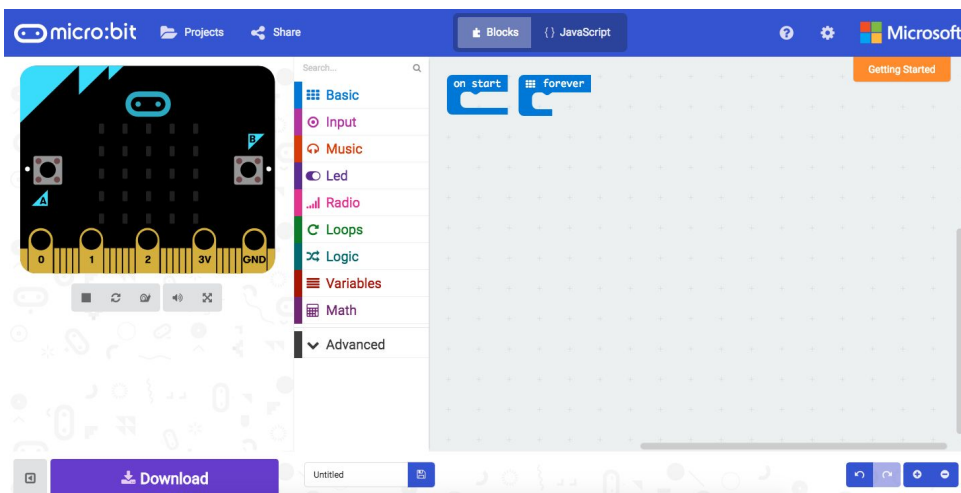
Level of Difficulty:

- Intermediate

Coding

Step 1

Start by opening the [micro:bit editor](#). You should see a blank editor.



Step 2

This system will be using the radio feature to communicate between micro:bit, so first set the group number.

From the  **Radio** section, drag in a **radio set group** block and add it to **on start**.



Set the group to the same number on each micro:bit. If there are other people doing the same activity nearby, your group number will need to be different from theirs.

Step 3

Next, display an image to show that this is a doorbell.

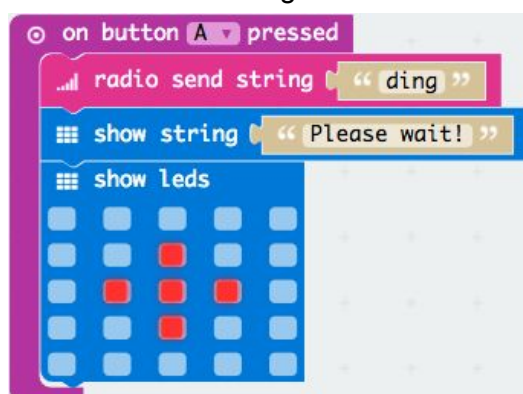


Step 4

When button A is pressed, send a radio signal with a string. The string of text that you type doesn't matter, you just need to send something.



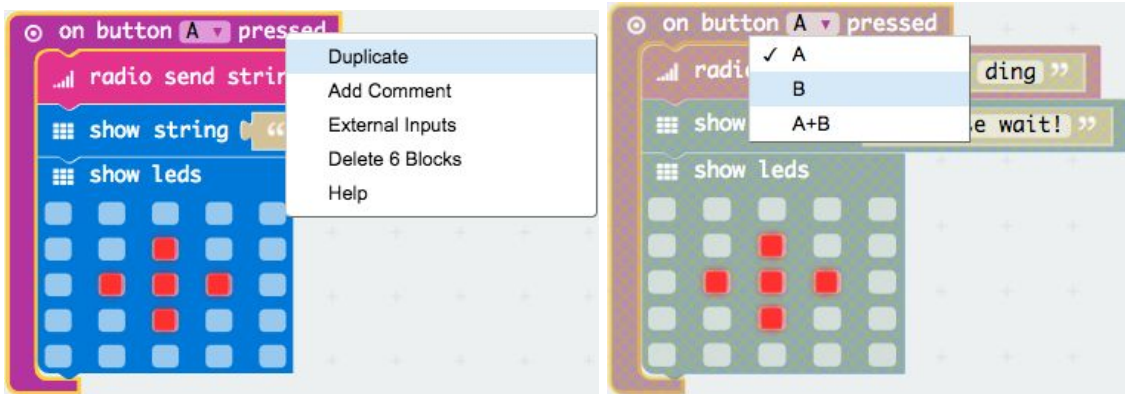
After the radio signal is sent, display some text to show the guest that they have pressed the button and then change back to the doorbell image.



Step 5

What if the guest presses button B instead of button A?

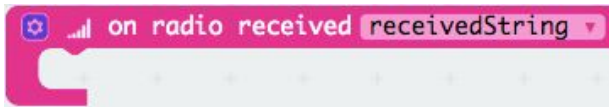
Simply duplicate the whole chunk of code and **change A to B**.



Step 6

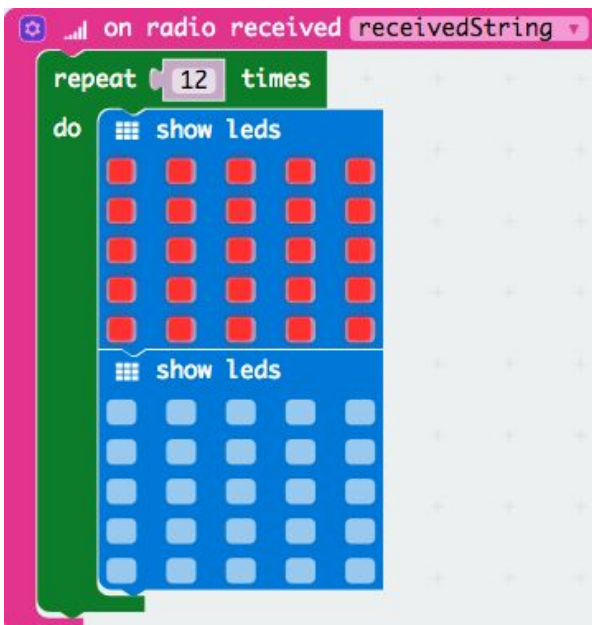
Next, we will deal with the alert on the receiving micro:bit.


From the **Radio** section, add the event block that checks for a **receivedString** (check that you haven't accidentally used `receivedNumber`)



Step 7

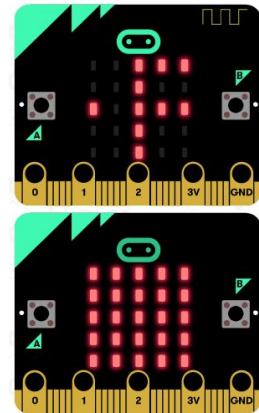
In this event, add an animation that will alert the house owner of the doorbell being pressed. You can try different animations to see what you like best. Here is a simple flashing screen.



This uses a **repeat N times** block which you can find in the  **Loops** section.

Great Work!

Test your doorbell system using the simulator. When you press a button, the simulator will load a second micro:bit to show the radio working. You may need to press it a second time to trigger the radio.



Test this out on your micro:bit by clicking [Download](#) and copy the file to both micro:bits using the USB cable.

Extra Challenge

See if you can program the receiver so that if you press A+B together, the doorbell will display a different message like "I'm on my way!"