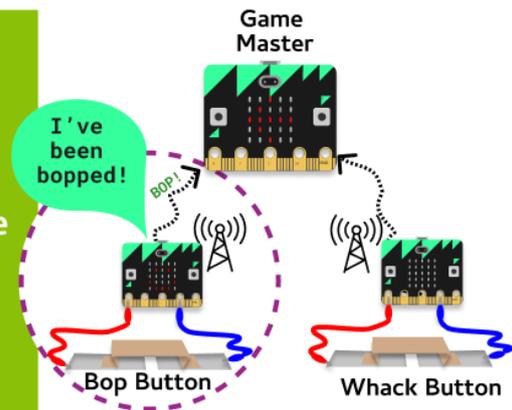


# Extension

## Co-op Bop! (Radio Button Code)

Link more buttons to your game using radio to communicate!

Spread them around the room and play as a team!



### Task 1.1: Configure the Radio

We'll need to start a new file for our game master!

1. Go to the **Co-Op Bop (Button) Playground** in the Grok course.
2. At the top of your file, `import` the `micro:bit` and `radio` modules.
3. Turn the radio on with `radio.on()`.
4. Configure the radio to use the channel that your tutors gave you using this code:  
`radio.config(channel=10)`

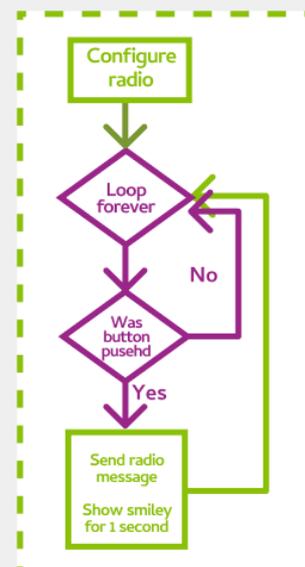
### Task 1.2: Loopy for radio

1. Create an infinite loop after you have set up the radio
2. Inside the loop create an if statement that checks for an action. (Use any action you like!)

**Actions:** We have the Micro:Bit buttons, shake and other gestures, and buttons you craft yourself! Remember to use the correct code, e.g. `is_pressed()` or `read_digital()`.

3. In the if statement, send your action to the game master: Remember to use your own message name!

```
radio.send("bop")
```



4. After you send a message **show a smiley face** for 1 second
5. **Run your code** in the Grok simulator to see it communicate to the other MicroBit!

## Task 1.2: Join the game

1. Now you have working code you can get your button to join the game!
2. You need to add your action to Master Game Code.  
(Go to your Game Master code if you have written one, or join someone else by getting them to add your button)
  - Add your action name to the list of actions in the Game Master Code. Make sure your name is different to all the other
  - Make sure there is an if statement that checks for your action and shows your chosen image

## ✓ CHECKPOINT ✓

**If you can tick all of these off you have finished this Extension:**

- You have configured your radio using the channel number the room coordinator gave you
- Everytime you press your button it sends a radio message to game Master.
- You show a smiley face every time you press your button

## Bonus 1.4: Add a display

**It would be better if the display light up when it was it's turn to be bopped!**

**Let's see if the other player gets the correct move!**

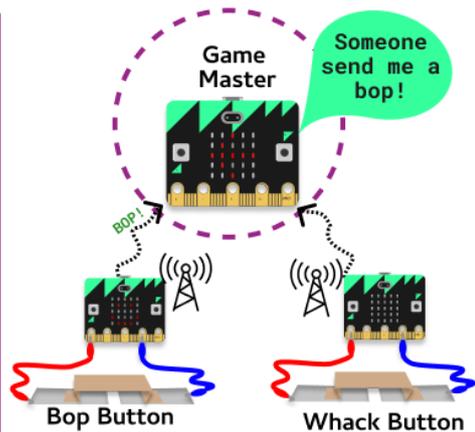
1. Inside your **while** loop, before the **sleep**, check to see **if** the radio message received matched the action. If it did, **display** a happy face and increase the **score** by 1.
2. If it didn't, just **continue**.

# Extension

## Co-op Bop! (Game Master Code)

Change your game to wait for radio messages to complete actions instead of button press!

Use this to make a room size bop it game to play as a team!



### Task 2.1: Configure the Radio

We'll need to start a new file for our game master!

1. We need a new file, go to the Grok Playground called **Co Op Bop - Game Master**.
2. At the top of your file, **import** the `micro:bit` and `radio` modules.
3. Turn the radio on with `radio.on()`.
4. Configure the radio to use the channel that the room coordinator gave you.

### Task 2.2: Play the game!

Let's play!

1. Create a **while** loop that keeps running until a radio message is received saying `"finished"`.
2. Inside the **while** loop, **display** a question mark.
3. Create an **if** statement that checks to see if `button a` was pressed. If it was, use the radio to send the message `"button a"`.
4. Add an **elif** that checks to see if `button b` was pressed. If it was, use the radio to send the message `"button b"`.
5. Otherwise, just **continue**.
6. At the end of your **while** loop, **display** an exclamation mark image, and then sleep for 200 milliseconds.

## Task 2.3: Game over!

### Play your game!

1. Try out your game! Don't forget you'll need to press what button the other player told you to!

## ☑ CHECKPOINT ☑

### If you can tick all of these off you have finished this Extension:

- You have configured your radio using the channel number the room coordinator gave you
- Your while loop runs while the message "finished" hasn't been received
- You send a message saying which button has been pressed