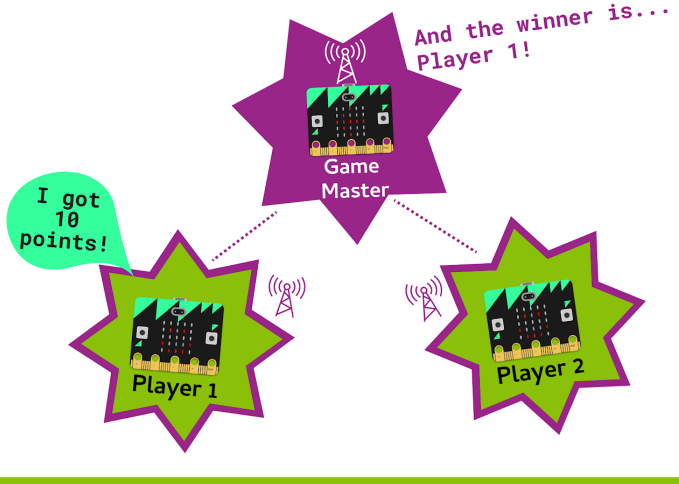
Extension: Race Your Friends

Want to play Bop It with friends?

We'll race our friend to 10 points!

The game master will get our games to start at the same time and wait to hear who gets 10 points first.

Our games will run just like before! But will talk to the Game Master at the start and finish!



Learning about Radio

We'll need to know how to use the radio for this extension. Here's some commands:

Action	Code
Set the channel, we set it to 6.	`radio.config(group=6)`
Turn the radio on	`radio.on()`
Send a message, we sent "bop"	`radio.send("bop")`
Receive a message, check if it matches "bop"	`if radio.receive() == "bop":`

Part 1

Give your game radio

Make your game start when the Game Master says to via radio. Radio back when you get 10 points!

Each players Microbit will still run its own game and generate it's own moves.

Part 2

Make a Game Master

Create a Game Master microbit. It will use radio to tell the players when to start their games.

It will wait until it hears back from the first player to get 10 points to announce the winner.

Part 2: Make a Game Master

We'll re-write our game so it uses radio to complete actions

It will:

- Choose actions, keep score, and loop, just like before.
- Listen for radio messages that match the action it is waiting for.

Task 2.1: Configure the Radio

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

1. Click the **Project** button to the left, and then click **Create file**.
2. Name your new "game_master" file.
3. At the top of your file, `import` the `microbit` and `radio` modules.
4. Turn the radio on with `radio.on()`.
5. Configure the radio to use the channel that the room coordinator gave you.

Task 2.2: Set up the game

Let's set up the variables we need!

1. Create a variable called `winner`, and set it to `None`.
2. Constantly scroll a message that says `"PRESS A to Start"`.
3. Make sure your message has a wait of `False`.

Hint - Scrolling messages

To make a message scroll constantly, and have a wait of false, you can use the following code:

```
display.scroll("Welcome to GPN", wait=False, loop=True)
```

Task 2.3: Start the game!

Send a message to the players when you're ready to start the game!

1. At the end of your code, create a while loop that keeps running `while` the winner is equal to `None`.
2. Inside the `while` loop, add an `if` statement that checks to see if `button_a` was pressed.
3. If `button_a` was pressed, send a message using the radio with the message `"start"`.
4. Outside of the `if` statement, but still inside the `while` loop, set the value of `winner` to be the message the radio receives.

Task 2.4: Configure the Radio

Display the winner!

1. At the end of your code, `scroll` who the `winner` was continuously!

☑ 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 radio sends a message of "start" when button_a is pressed.
- ☐ When there is a winner, their name is displayed!

★ BONUS 2.5: Images!

Our game master doesn't really do anything when it's waiting for a winner. Let's make it display some images!

1. In your code, just before when the `winner` variable is created, create a new list called `images`. Add as many images as you want in this, such as `Image.CHESSBOARD` and `Image.CHESSBOARD.invert()`.
2. Inside your `if` statement before the start radio message is sent, start displaying the images on repeat by using the following code:

```
display.show(images, wait=False, loop=True)
```