Run-in-Place Race | 1. Players

Connect the BBC micro:bit to MicroBlocks.

You'll need three BBC micro:bits, one for each player and one to keep score. Each player micro:bit sends the player's name and step count to the scorekeeper via radio.

Add the Radio, Scrolling and Web Thing libraries:

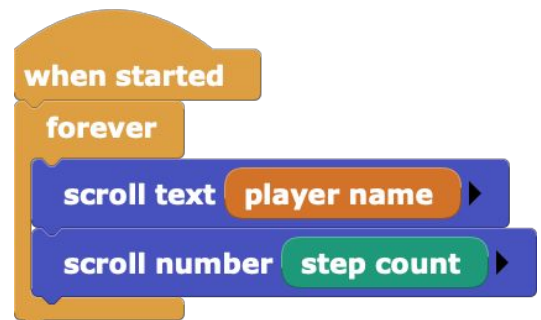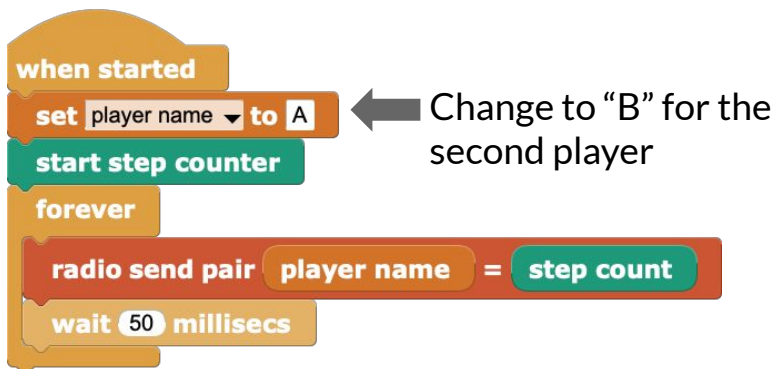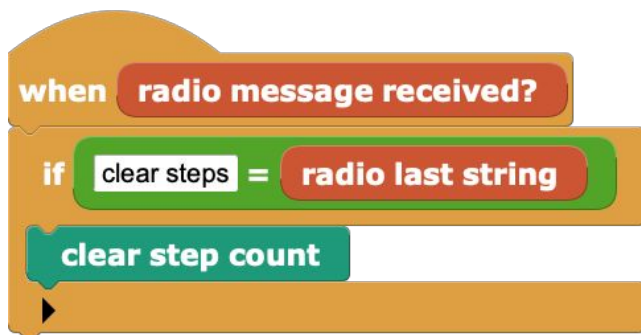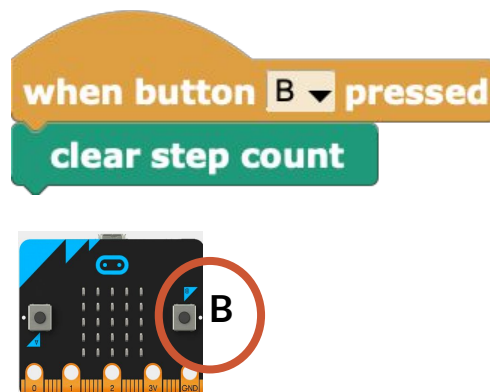Libraries **+**   ■ **Radio**   ■ **Scrolling**   ■ **Web Thing**

Make these scripts, then disconnect the micro:bit and attach a battery. Do the same for a second micro:bit but change the player name to "B".

```
when started
set player name ▼ to A          ⬅ Change to "B" for the
start step counter                  second player
forever
    radio send pair player name = step count
    wait 50 millisecs
```

```
when started
forever
    scroll text player name ▶
    scroll number step count ▶
```

This script lets the scorekeeper reset the steps via radio when starting a race:

```
when radio message received?
if  clear steps = radio last string
    clear step count
▶
```

This script lets you use button B on the micro:bit to clear your own step count:
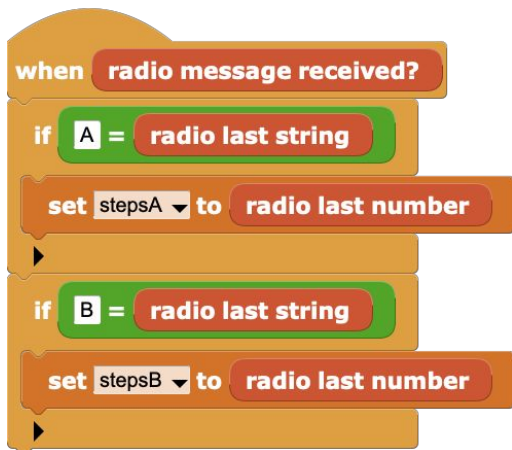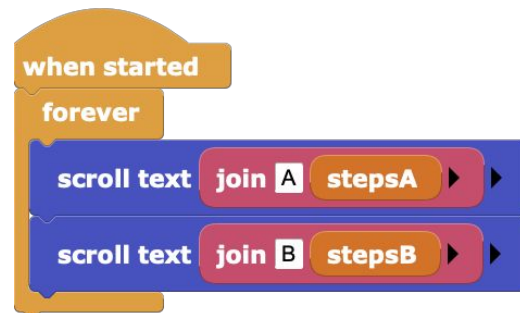
```
when button B ▼ pressed
clear step count
```

B

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The scorekeeper receives step count updates from both players via radio. The B button sends a message to clear all step counts.

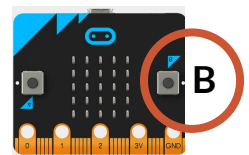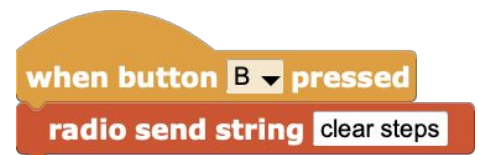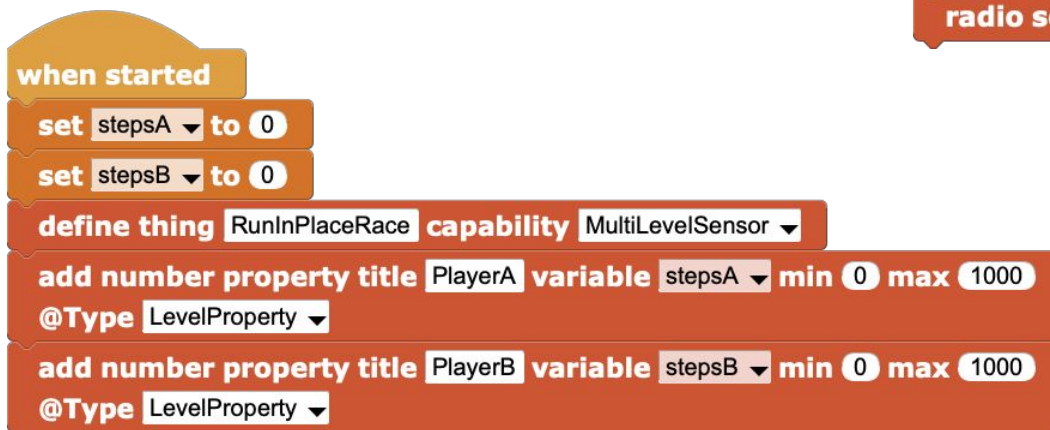This script updates the script count for player A or B when a radio message is received.

```
when radio message received?
if  A = radio last string
    set stepsA to radio last number
    ▶
if  B = radio last string
    set stepsB to radio last number
    ▶
```

This script displays the name and step count for each player.

```
when started
forever
    scroll text join A stepsA ▶ ▶
    scroll text join B stepsB ▶ ▶
```

This script sends a radio message to clear all the players' step counts.

```
when button B ▼ pressed
radio send string clear steps
```

This script tells the Gateway about this Web Thing:

```
when started
set stepsA ▼ to 0
set stepsB ▼ to 0
define thing RunInPlaceRace capability MultiLevelSensor ▼
add number property title PlayerA variable stepsA ▼ min 0 max 1000
@Type LevelProperty ▼
add number property title PlayerB variable stepsB ▼ min 0 max 1000
@Type LevelProperty ▼
```

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Run-in-Place Race | 3. Web Thing

Connect the micro:bit to Mozilla Gateway and add your Thing (see Web Light activity), then view step counts in a web browser:
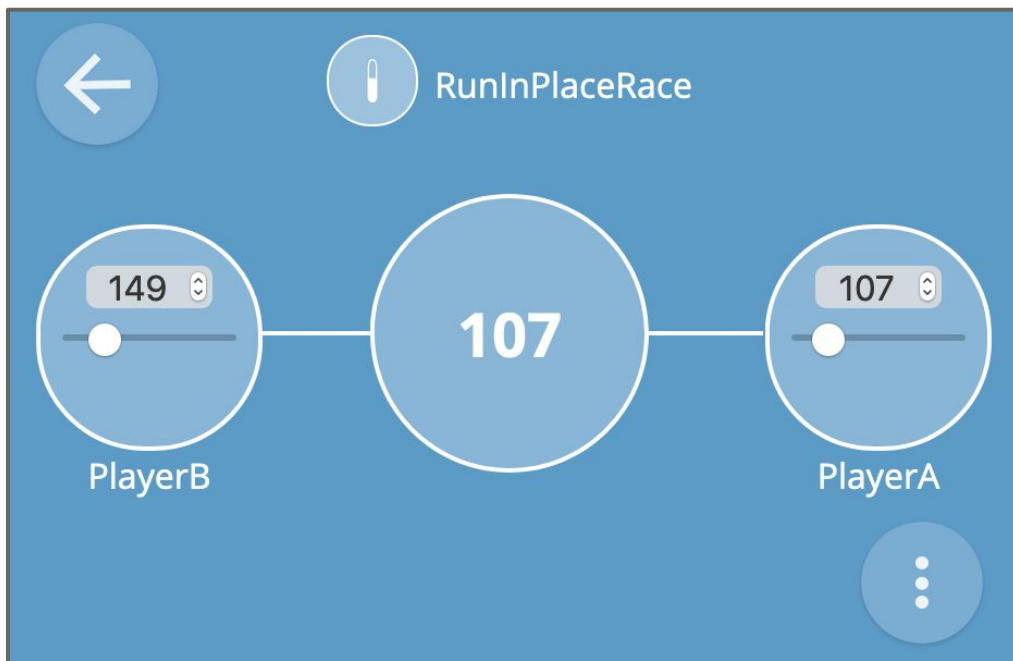
Press the B button on the scorekeeper micro:bit to reset all step counts and start a race. Players put micro:bits in their pockets and run in place until they reach steps goal (i.e. 100 steps).

How would you change this to allow more players to race?

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