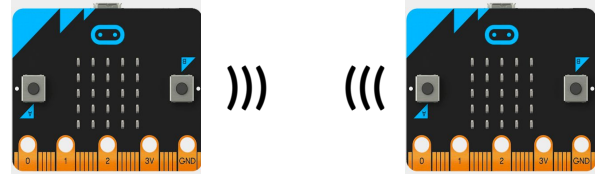# 1 - Radio Communications

Added libraries:  | Libraries + |  🟥 **Radio**  🟦 **Scrolling**

Radio blocks let two or more micro:bits communicate without wires!

Put all four of these scripts on both micro:bits to allow each to send and receive messages. (Feel free to change the string and number values.)

Pressing A, B, or both A+B on one micro:bit sends a message. Be ready to look at the other to see if it arrived.

```
when button A ▼ pressed
radio send string  Yo!
```

```
when button B ▼ pressed
radio send number  2020
```

```
when button A+B ▼ pressed
radio send pair light = light level
```

The receiver script is always listening for an incoming message. When received, the message will be scrolled across the LED display.

```
when  radio message received?
scroll text  radio last string  ▶
scroll number  radio last number  ▶
```

You can also send numbers as "codes" from one micro:bit to trigger actions on another. For example, send a "1" to show an LED display pattern, and a "0" to clear it. The sender acts like a remote control.

> **Challenge:** How far does the radio reach? Is it blocked by walls or your body? How many letters can you send with the "radio send string" block?

# 2 - Radio Texting

From the File menu, open the **RadioTexting** example in the "by Board" then "micro:bit and Calliope" folders. Get together in pairs or small groups and set the same group number (different from others.)

**when started**
**radio set group** 10

Your challenge is to understand how the example works, then try it. As usual, don't forget to click the green "start" button. ▶

Add a variable

Delete a v

ABCDEFGHIJKLMNOPQRSTUVWXYZ.!?:()&#+-*/=0123456789

alphabet

letter     HI ROSA!

msg2send     **define letters**

sending-flag     set alphabet ▾ to ABCDEFGHIJKLMNOPQRSTUVWXYZ.!?:()&#+-*/=0123456789

Some hints...
- Hold Button A and tilt to select a letter from the alphabet.
- Button B adds the selected letter to your message.
  - What do B double and long presses do?
- Pressing A+B sends your message.
- Shaking clears your message.
- If the LED is blinking, you received a message from someone else. Tilt down then up to read it.

**when radio message received?**
**clear display**

**when acceleration > 280**
comment | Shake hard to clear message to send
comment | blink = msg received tilt face down a little to display it on LEDs

set msg2send ▾ to ☐

**repeat until tilt z < -20**

display

**blink**

**flash**

**scroll text radio last string** ▶

http://microblocks.fun