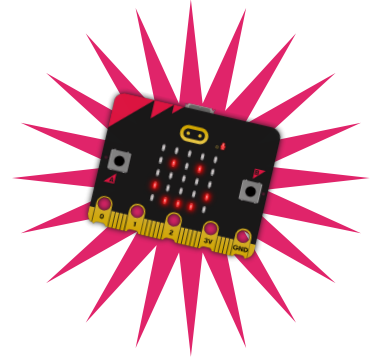


## Reach for the Stars

### Activity 1



#### instructions

```
on start
  set activity to 0
  set steps to 0
  show icon [ready icon]
```

1. Create a variable for **activity** and **steps** and set a **ready icon**

2. Make the number of **steps** go up by one each time we shake the micro:bit

```
on shake
  change steps by 1
```

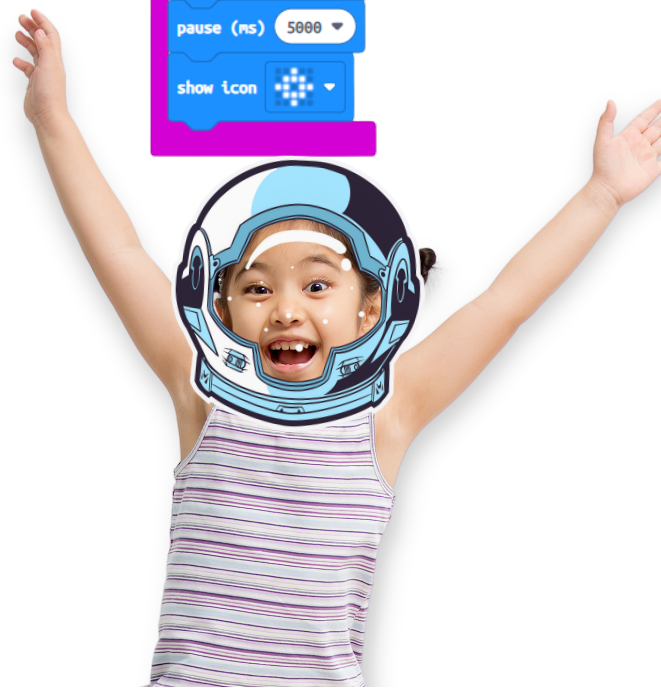
```
on button B pressed
  show number steps
```

4. Display the number of **steps** after pressing **button B**

```
on button A pressed
  show number 3
  show number 2
  show number 1
  set activity to pick random 1 to 3
  if activity = 1 then
    show string "Jump!"
    pause (ms) 10000
  +
  if activity = 2 then
    show string "Run!"
    pause (ms) 10000
  +
  if activity = 3 then
    show string "Skip!"
    pause (ms) 10000
  +
  show string "Rest"
  pause (ms) 5000
  show icon [ready icon]
```

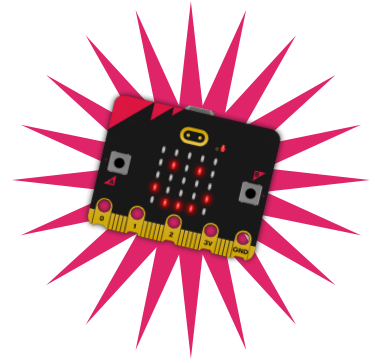
3. On pressing **button A** display a countdown and then **randomly pick** an activity. Then rest for 1/2 second and display the **ready icon**

#### challenges



## Reach for the Stars

### Activity 2



#### instructions

```
on start
  set lives to 10
  show icon
```

1. Create a variable for **lives** and set the value to 10

2. When you tilt the micro:bit **up** or **down**, display an arrow and remove a life.

```
on Logo down
  pause (ms) 500
  show leds
  clear screen
  change lives by 0
  show number lives
  clear screen

on Logo up
  pause (ms) 500
  show leds
  clear screen
  change lives by -1
  show number lives
  clear screen
```

Show the number of **lives** left and clear the arrow indicator

3. Repeat the code to detect the micro:bit tilting **left** or **right**

```
on tilt left
  pause (ms) 500
  show leds
  clear screen
  change lives by 0
  show number lives
  clear screen

on tilt right
  pause (ms) 500
  show leds
  clear screen
  change lives by -1
  show number lives
  clear screen
```

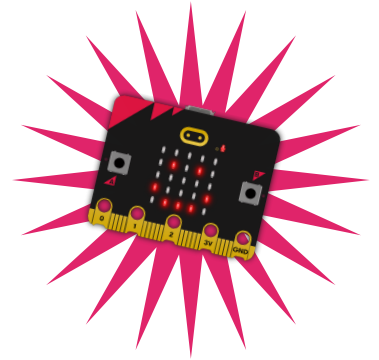
#### challenges

- Changes the number of lives to 5
- Play a sound when out of lives
- Display a X when out of lives
- Record a top score



## Reach for the Stars

### Activity 3



#### instructions

```
on start
  radio set group 1
  set large_alien to 0
  set small_alien to 0
```

1. Set the **radio channel** (don't use 1 but choose one between 2 and 255)

Setup some **variables** to store the number of **large** and **small** aliens spotted

2. **Send text** to the other micro:bit when for a large alien (**button A**) or a small alien (**button B**)

```
on button A pressed
  radio send string "Large alien"
```

```
on button B pressed
  radio send string "Small alien"
```

```
on radio received receivedString
  if receivedString = "Large alien" then
    change large_alien by 1
  if receivedString = "Small alien" then
    change small_alien by 1
```

4. Show the value of the **counter variables** by pressing the **A+B** buttons

```
on button A+B pressed
  show string "Large"
  show number large_alien
  show string "Small"
  show number small_alien
```

#### challenges

- Get the micro:bits to send the number of medium sized aliens?
- Get the micro:bits to send the colour of the aliens instead of the sizes?
- Get the explorer's micro:bit to tell base camp when they have finished exploring?  
Get the base camp micro:bit to tell the explorer that they have received their message?

 [digitallcharity](#)

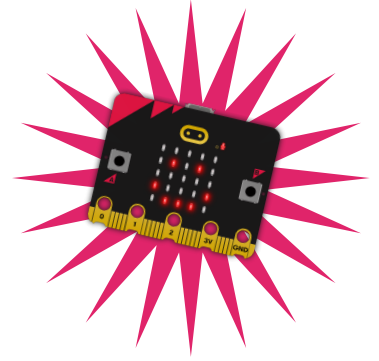
 [digitall.charity](#)

 [info@digitall.charity](mailto:info@digitall.charity)



## Reach for the Stars

### Activity 4



#### instructions

```
on button A pressed
  show string "Go!"
  set times to 0
  play sound twinkle in background
  set running to true
  while running = true
  do
    show icon [dots]
    show icon [dots]
    change times by 1
    if times >= target then
      play sound sad until done
      set score to 0
      show leds [grid]
  end do
end while
```

```
on start
  set target to 10
  set score to 0
  set running to false
```

1. Set the **target** to 10 and the **score** to zero. Tell the program we are not running yet.

2. Set the count-up (**times**) to 0 and tell the program we are running.

While running, check if the count-up has gone **higher or equal** to the target. If it has then end the challenge.

3. On **button B** tell the program we have reached the next base.

Increase the **score**

Reduce the **target** time for next run

```
on button B pressed
  set running to false
  change score by 1
  change target by -1
```

```
on button A+B pressed
  show number score
```

4. On **button A+B** show current **score**

#### challenges

- Get the micro:bit to allow you to choose a difficulty using the touch logo?
    - Easy – Target variable is set to 20
    - Hard – Target variable is kept at 10
- When you press buttons A+B it shows the score and the top score

