

Blocks

Heartbeat

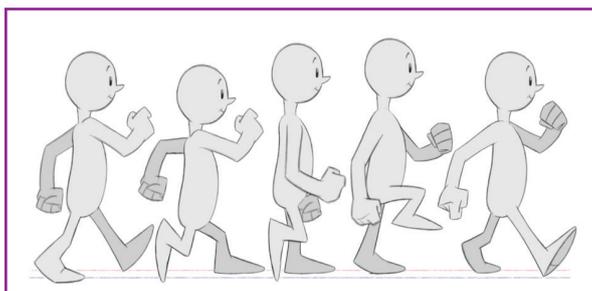
02

- Create a simple animation of a beating heart
- Design your own animation



10 mins

1. What is animation?

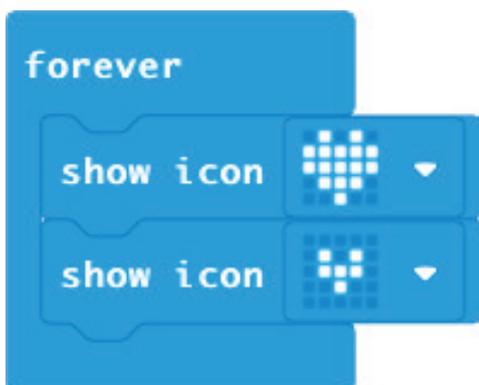


Any animation, whether it's a cartoon on television or a movie at the cinema, is just a series of slightly different images being quickly shown one after the other.

The Micro:bit can display simple animation by lighting up its LEDs in a pattern, and then showing a different pattern.

You will create a beating heart animation using the built-in graphics. After that, you will design your own movement.

2. Add the blocks



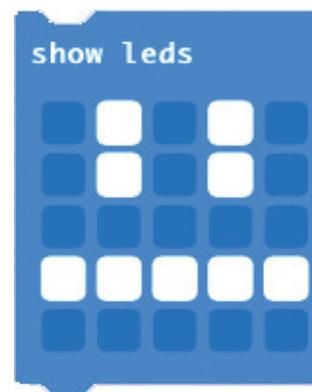
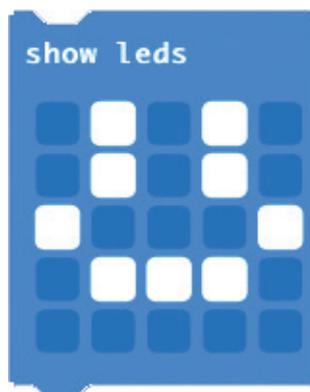
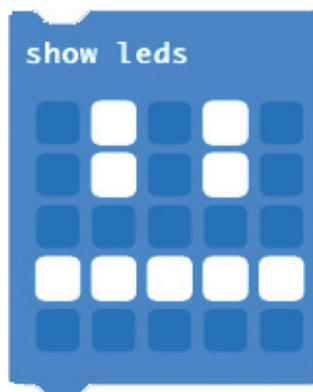
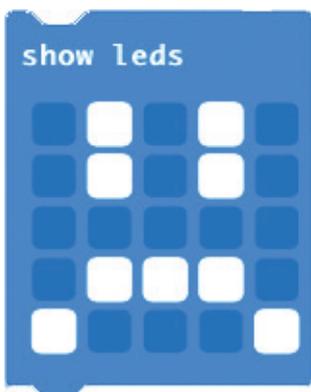
Add the blocks as shown. The animation will appear on the virtual Micro:bit.

Download your file and copy it to the Micro:bit, as you did on the first worksheet.

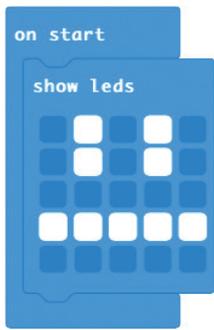
3. Create your own animation

Now you've seen how easy it is to create simple animation, you can have a go at drawing your own images.

1. Replace the two `show icon` blocks with four `show leds` blocks.
2. Click the squares to toggle each LED on or off. Your virtual Micro:bit will show a sad face animating to a happy face and back again.



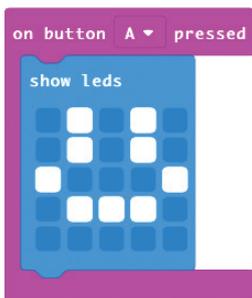
4. Add interaction



At the moment, our animation plays constantly. Let's change our program so that pressing `button A` makes our Micro:bit happy, and pressing `button B` makes our Micro:bit sad.

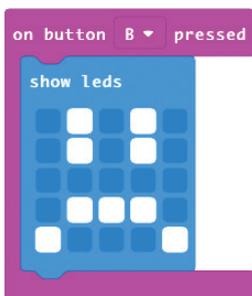
1. Drag the animation blocks to somewhere else in the code area so we can use them again shortly
2. Add the middle face to the `on start` block. This is the first thing the Micro:bit will do when started

5. Button A



1. Buttons are *inputs*, so the blocks for buttons are in the magenta input tab
2. Drag the `on button A pressed` block to the code area
3. Drag the happy face image into it
4. Test your program by clicking `button A` on the virtual Micro:bit

6. Button B



Now it's time to add our second button command.

1. Drag another on button A pressed block to the code area
2. Click on the A and select B to change the block to respond to button B instead
3. Drag your sad face into the block

7. Your turn

Now it's your turn to change the code! Here are some suggestions:

- Create new images and animate them on each button press
- Add an additional `on button _ pressed` block and add a third option for pressing `button A` and `button B` together
- Add `pause` blocks between each `show icon` block to change the speed of the animation.

Every time you make a change to your program, you will need to download it and copy it to the micro:bit.