Computing Knowledge Organiser: Micro:bit Programming

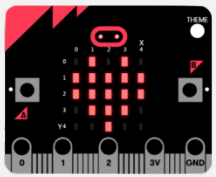
Explore a range of programming techniques using Micro:bits

Display something on the screen

```
display.show("A")
display.show(Image.HEART)
```

To display a longer value, use display.scroll:

```
display.scroll("hello")
display.scroll(counter)
```



Clear the screen:

```
display.clear()
```

Delay the next action

Uses millseconds (1000 ms in a second)

```
sleep(1000)
```

Using a comment

A comment is code that is meant for humans. The computer ignores it. Use a hashtag

```
# this is a comment
```

While loop

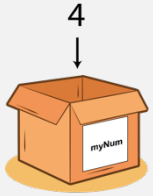
Use a while loop to repeat code for ever

```
while True:
    #repeat the code indented here
```

Giving values to variables

Use a single equals sign

```
counter = 0
tilt = accelerometer.get_x()
```



Change the value of a variable

```
counter = counter + 1
score = score - 5
```

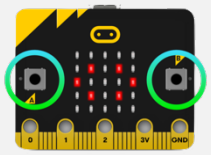
If – Else block

Used to choose a path through a program based on a condition of some kind

```
if tilt > 25:
    # do this code
else:
    # do this code instead
```

Use the buttons

```
if button_a.is_pressed():
    # do this code
if button_b.is_pressed():
    # do this code instead
```



Micro:bit Editor
Micro:Python editor
https://tinyurl.com/yfhcfcad

Micro:bit Tutorials
Tutorials to try
https://tinyurl.com/2n3paeyu

BBC Bitesize
KS3 programming tutorials
https://tinyurl.com/27258v5d

Key Terms:

1. **Algorithm:** a set of instructions to complete a task
2. **Program:** computer code written to complete a task
3. **Sequence:** putting program code in the right order
4. **Selection:** choosing a path through a program, usually by using an IF - ELSE block
5. **Repetition:** repeating a block of code in a program
6. **Loop:** a way of describing a repetition block in a program
7. **Variable:** a named value that is stored in computer memory and can be used in a program
8. **Sensor:** an electronic part that can be used to sense something about the real world, e.g. temperature
9. **Accelerometer:** a sensor that senses movement or the angle of tilt of the micro:bit
10. **LED:** Light Emitting Diode. A micro:bit has 25 LEDs to display outputs