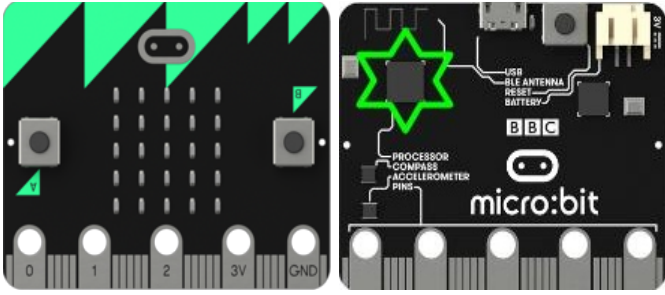# BBC micro:bit Cheat Sheet

Calling The micobit Module

```
from microbit import *
```

Sleep

```
# Pause for 1000 msecs i.e. one second
sleep(1000)
```

```
# Pause for 300 msecs
sleep(300)
```

LEDs

Clearing the display

```
display.clear()
```

Displaying Text

```
display.show('Z')
display.scroll('Hello!')
```

```
# Use a variable
msg = 'Hello'
display.scroll(msg)
```

Displaying Images

```
display.show(Image.HAPPY)
```

The Pre-defined Images

```
Image.HEART Image.HEART_SMALL Image.HAPPY
Image.SMILE Image.SILLY Image.SAD Image.ANGRY
Image.SURPRISED Image.CONFUSED Image.ASLEEP
Image.FABULOUS Image.MEH Image.YES Image.NO

Image.BUTTERFLY Image.COW Image.DUCK
Image.GIRAFFE Image.RABBIT Image.SNAKE
Image.TORTOISE

Image.TRIANGLE Image.TRIANGLE_LEFT
Image.DIAMOND Image.DIAMOND_SMALL
Image.SQUARE Image.SQUARE_SMALL

Image.CHESSBOARD Image.GHOST Image.HOUSE
Image.PACMAN Image.PITCHFORK
Image.ROLLERSKATE Image.SKULL
Image.STICKFIGURE Image.SWORD Image.TARGET
Image.TSHIRT Image.UMBRELLA Image.XMAS

Image.MUSIC_CROTCHET Image.MUSIC_QUAVER
Image.MUSIC_QUAVERS

Image.ARROW_N Image.ARROW_NE Image.ARROW_E
Image.ARROW_SE Image.ARROW_S Image.ARROW_SW
Image.ARROW_W Image.ARROW_NW

Image.CLOCK1 Image.CLOCK2 Image.CLOCK3
Image.CLOCK4 Image.CLOCK5 Image.CLOCK6
```

```
Image.CLOCK7 Image.CLOCK8 Image.CLOCK9
Image.CLOCK10 Image.CLOCK11 Image.CLOCK12
```

Display Images in a Pre-defined List

```
# Loop, with 100msecs delay between images
display.show(Image.ALL_CLOCKS, loop=True,
delay=100)
```

Display Images in a Created List

```
# Loop, with one sec delay between images
faces = [Image.SAD, Image.SMILE, Image.HAPPY]
display.show(faces, loop=True, delay=1000)
```

Create an LED Image

```
boat = Image('00050:'
             '00550:'
             '05550:'
             '99999:'
             '09990')
display.show(boat)
```

```
# The image can also be created as one line
# Note: this way uses only 2 quotes.
boat = Image('00050:00550:05550:99999:09990')
```

Setting Individual LEDs

```
# Set first LED (col 0, row 0) fully on
display.set_pixel(0, 0, 9)
```

```
# Set last LED (col 4, row 4) off
display.set_pixel(4, 4, 0)
```

```
# Set LED (col 2, row 1) mid brightness
display.set_pixel(2, 1, 4)
```

Note: LED row/col are numbered from 0, brightness is a value from 0 to 9.

LEDs – Random Displays

Calling the random Module

```
import random
```

Displaying a Random Text from a List

```
fruits = ['apple', 'banana', 'pear']
chosen = random.choice(fruits)
display.scroll(chosen)
```

Displaying a Random Image from a List

```
pets = [Image.SNAKE, Image.DUCK, Image.COW]
pet_chosen = random.choice(pets)
display.show(pet_chosen)
```

Displaying a Random Integer

```
num = random.randint(0, 10)
display.show(str(num))
```

```
num = random.randint(-10, 15)
display.show(str(num))
```

Note: Numbers must be converted to a string to be displayed.

BBC micro:bit Cheat Sheet

The Buttons

```python
# Display message if button A being pressed
# Otherwise display nothing
if button_a.is_pressed():
    display.show('A')
else:
    display.clear()

# Display message if button A being pressed
# and message if button B being pressed
while True:
    if button_a.is_pressed():
        display.scroll('A')
    elif button_b.is_pressed():
        display.scroll('B')
    sleep(500)

# Display message if button A was pressed
# Sometimes this works better than is_pressed
while True:
    if button_a.was_pressed():
        display.scroll('A')
```

The Accelerometer

```python
# Display an image if device is shaken
if accelerometer.was_gesture('shake'):
    display.show(Image.SILLY)
```

The Radio

Calling the Radio Module

```python
import radio
```

Switching the Radion On

```python
radio.on()
```

Transmitting Messages

```python
radio.send('hello')
```

Receiving Messages

```python
in_msg = radio.receive()
```

Responding to Messages

```python
# Receive a message, display a response
in_msg = radio.receive()
if in_msg == 'hello':
    display.show(Image.SMILE)
else:
    display.scroll('Huh?')

# Receive message, display the message
# transmit a reply
in_msg = radio.receive()
if in_msg == 'hello':
    display.scroll(in_msg)
    sleep(500)
    radio.send('OK')
```