# SENSE HAT SENSORS

## Test the Sense HAT

**1** Open Python 3 and enter the following commands directly into the shell:

(do not type the chevrons >>>)

```
>>> from sense_hat import SenseHat
>>> sense = SenseHat()
>>> sense.show_message("Hello world")
```

Press Enter after each line, and after the third line, the message should appear on the Sense HAT's display.
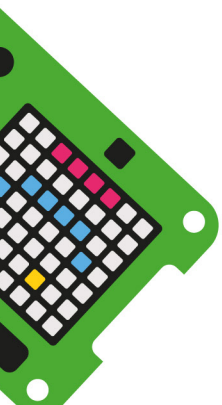
**2** Now try retrieving the sensor values:

```
>>> sense.temperature
>>> sense.humidity
>>> sense.pressure
```

When you press Enter, you will see the sensor's value.

## Faces

**1** Open a new window and type:

```
from sense_hat import SenseHat
from time import sleep

sense = SenseHat()

r = (255, 0, 0)
g = (0, 255, 0)
b = (0, 0, 255)
y = (255, 255, 0)
p = (255, 0, 255)
c = (0, 255, 255)
w = (255, 255, 255)
e = (0, 0, 0)

icon = [
    e, e, e, e, e, e, e, e,
    e, e, e, e, e, e, e, e,
    e, e, b, e, e, b, e, e,
    e, e, e, e, e, e, e, e,
    e, e, e, e, e, e, e, e,
    e, b, e, e, e, e, b, e,
    e, b, b, b, b, b, b, e,
    e, e, e, e, e, e, e, e,
]

sense.set_pixels(icon)
```

**2** Now make your own icon using the colours (`r` is red, `g` is green, `b` is blue, and so on). Your icon must be 8x8 like the example.

**3** Run the code with `F5` and you should see your icon on the Sense HAT display.

## Make it Hot

**1** Replace the last line:

```
start_temperature = sense.temperature

while True:
    print(sense.temperature)
    if sense.temperature < start_temperature + 0.5:
        sense.set_pixels(icon)
    else:
        sense.clear()
    sleep(1)
```

**2** Run the code again. Now breathe on the Sense HAT and see if you can make it smile!