

# Direction

There is a compass on the BBC micro:bit. If you ever make a weather station use the device to work out the wind direction.

## Compass

It can also tell you the direction of North like this:

```
from microbit import *

compass.calibrate()

while True:
    needle = ((15 - compass.heading()) // 30) % 12
    display.show(Image.ALL_CLOCKS[needle])
```

### ! Note

**You must calibrate the compass before taking readings.** Failure to do so will produce garbage results. The `calibration` method runs a fun little game to help the device work out where it is in relation to the Earth's magnetic field.

To calibrate the compass, tilt the micro:bit around until a circle of pixels is drawn on the outside edges of the display.

The program takes the `compass.heading` and, using some simple yet cunning maths, [floor division](#) `//` and [modulo](#) `%`, works out the number of the clock hand to use to display on the screen so that it is pointing roughly North.