

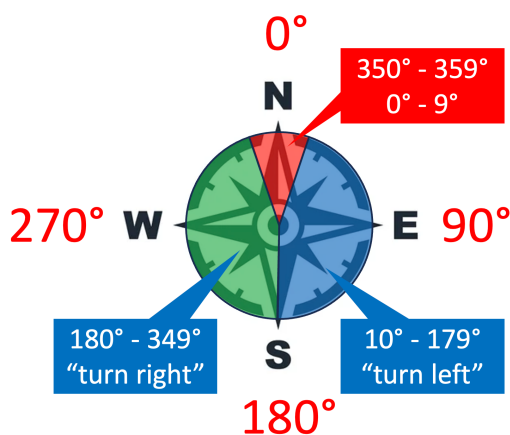
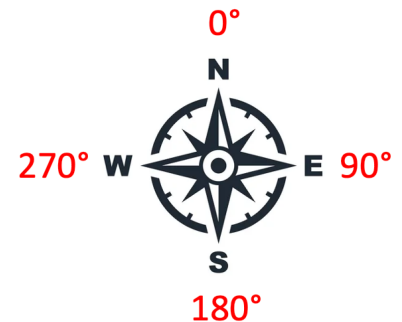


Magnetic Compass

<https://makecode.microbit.org>

The micro:bit has a built in magnetic compass
– which way is North?

- 1) Open <https://makecode.microbit.org>
- 2) **+New Project**



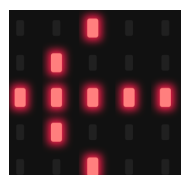
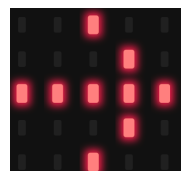
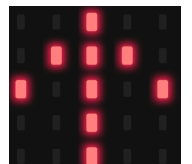
There are 360 degrees in a circle. The micro:bit measures the compass heading from 0 to 359 degrees with its magnetometer.

When the compass heading is zero it's pointing towards the North Pole. Allow around 10 degrees each side.

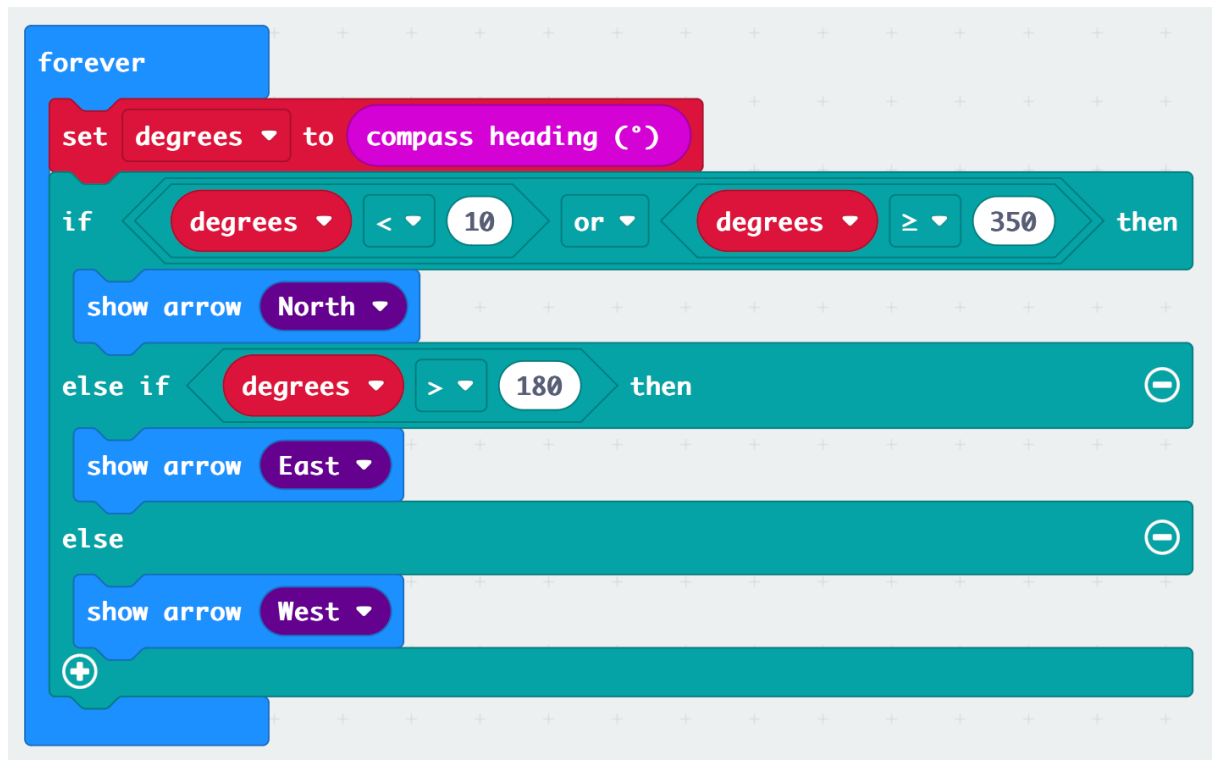
- 3) Create a variable, **degrees**.
- 4) **Set degrees to the compass heading**
- 5) **Show** an upward **North** arrow **if** you're in the **red segment** above.
- 6) Put the **OR** in first.
- 7) On one side of the **OR** put **degrees < 10** (less than 10).
- 8) On the other side put **degrees ≥ 350** (greater than or equal to)
- 9) Add more slots to the if block by pressing the + button at the bottom of the block.

The if block now only has to distinguish between less than or greater than 180 degrees.

- 10) Show an arrow pointing to the right (**show arrow East**) if you're in the **green segment** above, **else if degrees > 180**
- 11) The *only* remaining case is the **blue segment**, so you don't need another **if**, **else show arrow West** telling you to turn left.
- 12) Download the code to the micro:bit.



The code is over the page...



Can you find the North Pole?

Save your code on a USB drive.