Text

Description automatically generated with low confidence

**Line Follower**

https://makecode.microbit.org

A picture containing engine, toy

Description automatically generated*Maqueen has* ***two*** *line-sensors, we can use them as its left and right eyes to follow a line.*

1. Open **https://makecode.microbit.org**
2. **+New Project**
3. Select +Extensions > click “maqueen”  
   (**not** Maqueenplus)

*Each line tracking sensor returns:*

* *0 if the paper beneath is black*
* *1 if the paper beneath is white*

1. Create variables **left** and **right** to hold the sensor readings.
2. Graphical user interface, application

   Description automatically generatedThis code reads both sensors and puts the readings in variables **left** and **right**.

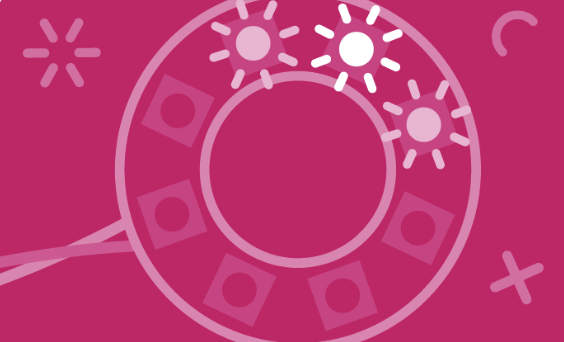
Think about the different cases…

1. If **left**=0 and **right**=0 then it’s on track so move straight ahead.
2. If **left**=0 and **right**=1 steer left to get back on track.
3. If **left**=1 and **right**=0 steer right to get back on track.

*This code drives faster (speed 100) on the straights, and slows down on the turns.*

*If it comes off the line and both sensors detect 1, it just carries on doing what it was doing before. This might help it find the line again.*

**Underglow**

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*Maqueen has four Red/Green/Blue (RGB) LEDs (Light Emitting Diodes) on the bottom so you can bling your robot with “underglow.”*

1. Select +Extensions > search for and click “neopixel”

* *Neopixel now appears on your function menu*
* *There are* ***more*** *goodies below it…*

# **Disco lights (rotating rainbow)**

1. A screenshot of a computer

   Description automatically generated with medium confidenceAdd code below to **show** the colours of the rainbow, **on start**.
2. A screenshot of a computer

   Description automatically generated with medium confidenceThe code below **rotates** the colours from each LED pixel to the next one on the strip of four, **every 100 milliseconds** (a tenth of a second).

***Save your code on a USB drive.***