

ZIP LEDs Experiment 1 - Turn an LED On and Off

Buttons A and B are used here to switch an LED on and off. The ZIP stick has five RGB LEDs and the Mr Bit program specifies which ones get switched on.

ZIP LEDs Experiment 2 - Changing an LED's Colour

Each button gives a different colour pattern. The Mr Bit program specifies the colours and the pattern.

ZIP LEDs Experiment 3 - Make an LED Move

The colours move as you hold down a button. Check out the Mr Bit program to see how the colours and movement are specified.

ZIP LEDs Experiment 4 - Controlling Multiple LEDs

Each time you press button A, the colour pattern changes. Button B shows a spectrum of colours.

ZIP LEDs Experiment 5 - Control Two ZIP sticks

At the press of a button, an LED pattern shows for a set time of 2 seconds.

ZIP LEDs Experiment 6- Display Sensor Readings

The BBC micro:bit has several sensors on board: the LED matrix can detect light level and an accelerometer can detect the angle of tilt of the micro:bit. The readings from these sensors are used to light up the LEDs on the ZIP sticks; the bigger the reading, the more LEDs light up.

In the Mr Bit control system, modules 1 and 2 divide the readings to give a number from 1 to 5. This number is used as an index for modules 3 and 4 switch on that number of LEDs.

ZIP LEDs Experiment 7 - Spin an LED around the ZIP Ring

Each button gives the effect of an LED moving around the ZIP Ring. The Mr Bit programs use the rotation options for moving the LEDs, clockwise and anti-clockwise.

ZIP LEDs Experiment 8 - Displaying a Rainbow

The buttons each control a rotating pattern, but the brightness depends upon the angle at which the micro:bit is being held. In Run mode, click on the tilt box to alter the tilt (roll) angle.