

# Hub datasheet



The hub is the programmable controller for the Invention Engine system. The hub contains a microcontroller (small computer) that holds and executes programs.

There are eight ports that send or receive data to and from the bits. The ports are labelled port 0 through to port 7. Only port 0 to port 3 (marked with \*) can accept analogue inputs (dial bit, light sensor).

The hub is programmed and powered via the USB-A plug. Note that a standard USB-A wall adaptor is capable of powering the hub.

| Use in ports   | Stencil guide | Bit type | Block category |
|----------------|---------------|----------|----------------|
| Not applicable | Ⓑ             | Hub      | Not applicable |

## Programming blocks

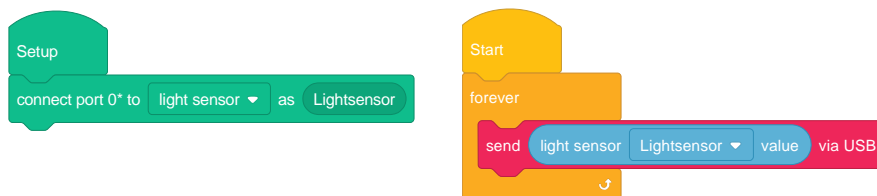
The hub has some special programming blocks that allow it to communicate directly to a computer.

data received from USB

send 1 via USB

## Example program

This example program will read the level from the light sensor bit and send it to the computer via USB. To see the data sent to the computer click on the 'USB' menu icon in the [Invention Engine Blocks](#) app.



## In the real world

Microcontrollers like the one used in the hub are used in real world inventions to control how the invention works. Any invention that has a keypad, digital display or controlled movement will likely be using a microcontroller. Even modern vacuum cleaners and electric toothbrushes use microcontrollers.

Computers are literally everywhere!

