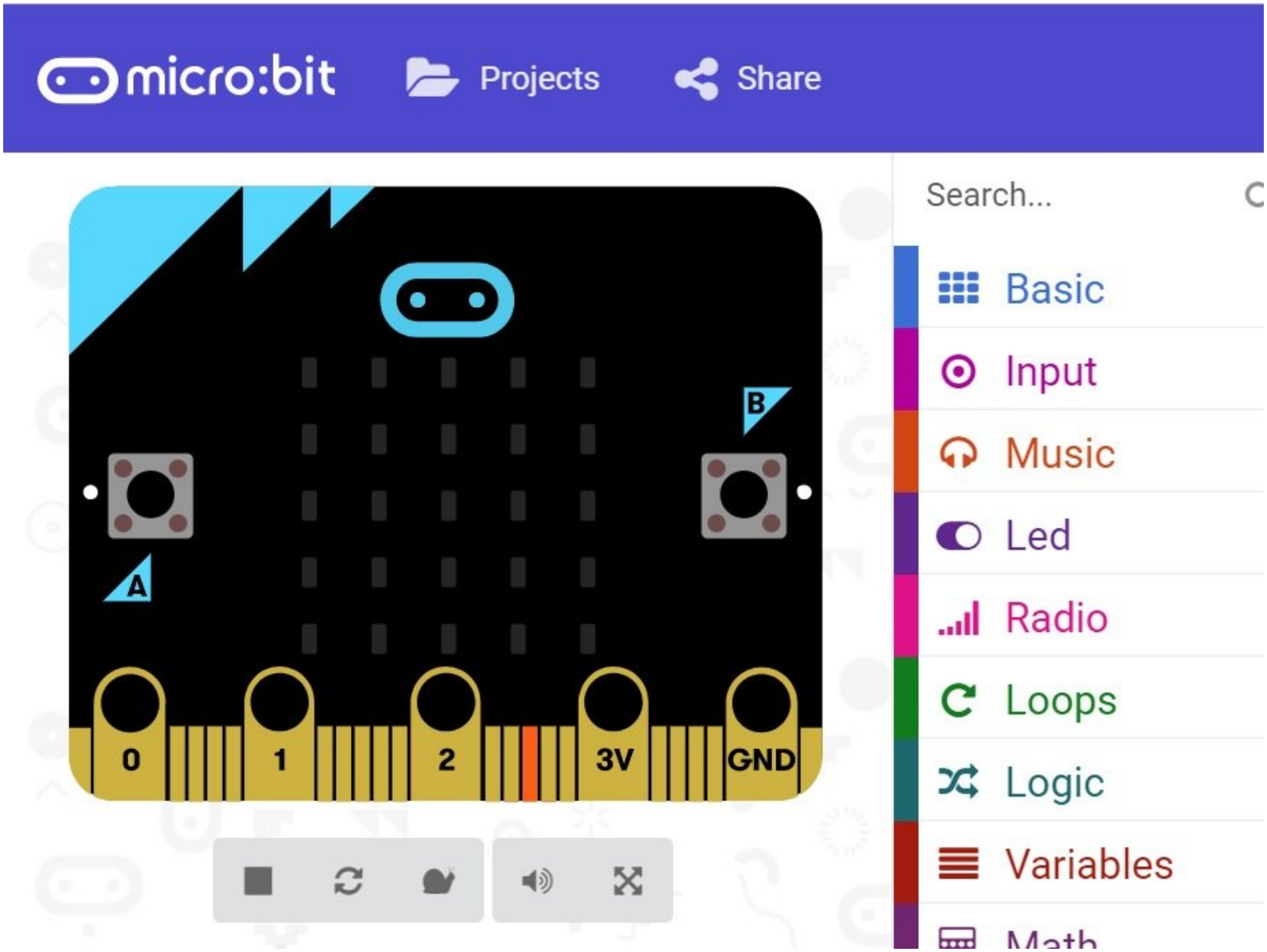
A - Getting Started

Learn how to use the make:code editor to upload code to the micro:bit!



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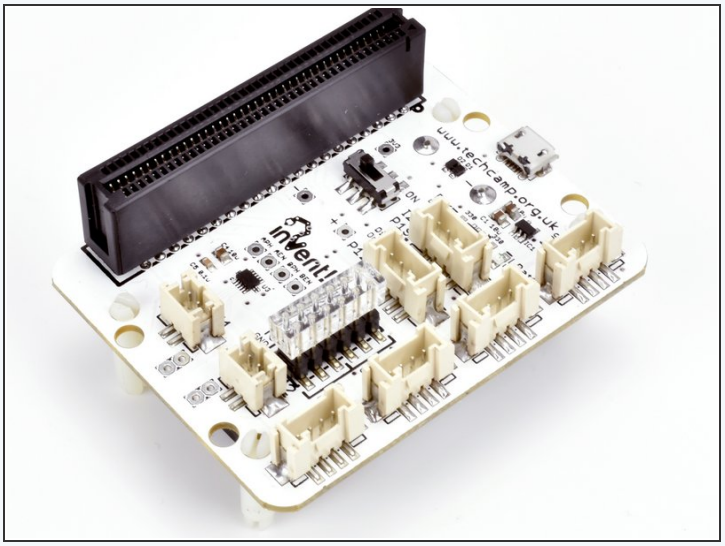
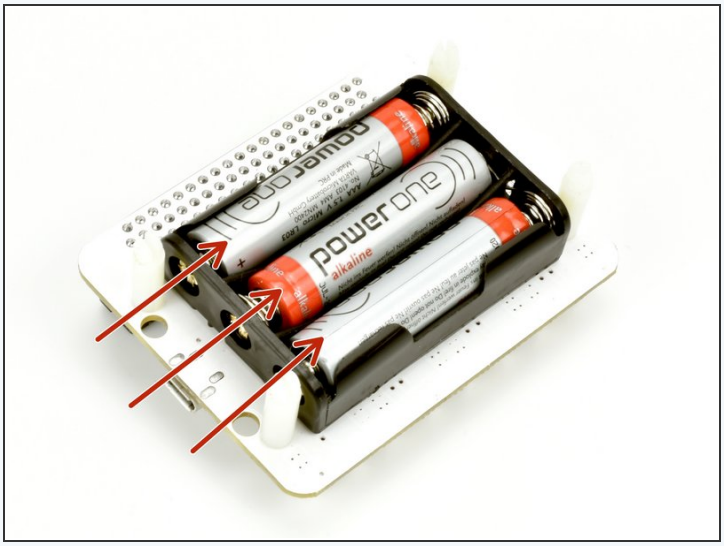
INTRODUCTION

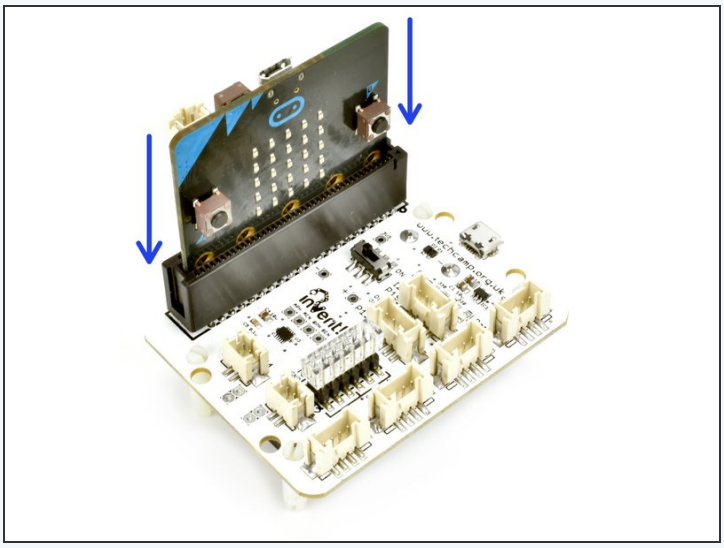
Learn how to use the make:code editor to upload code to the micro:bit!

Step 1

Build Your Robot





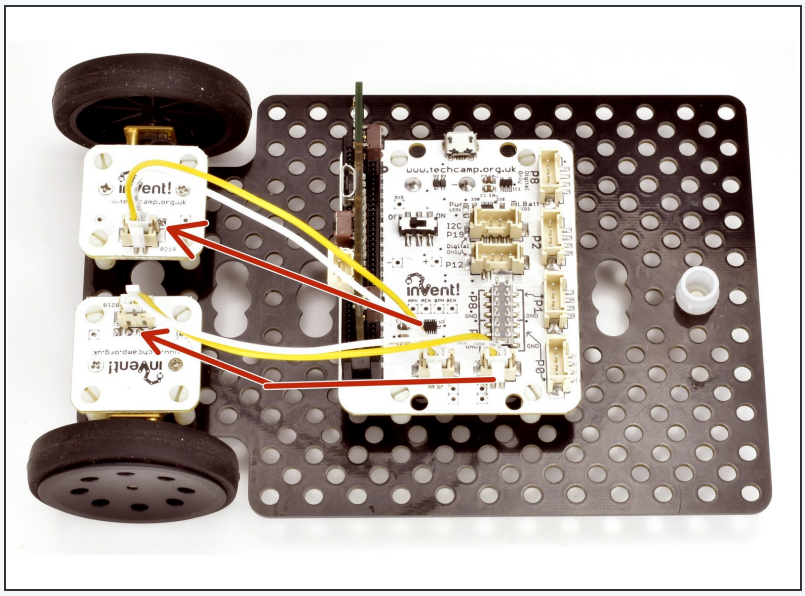


- Let's assemble our robot so we can get started.
- We need to assemble the **main board** first - this is the **brain** of the robot, and controls everything it does!
- So we can use it without the cable plugged in, turn the board over and **insert the batteries**. Make sure they are the right way around.
- Next, **plug in the micro:bit** to the long black connector - make sure it is the same way round as the picture, with the LEDs and buttons facing **forwards**.

Step 2

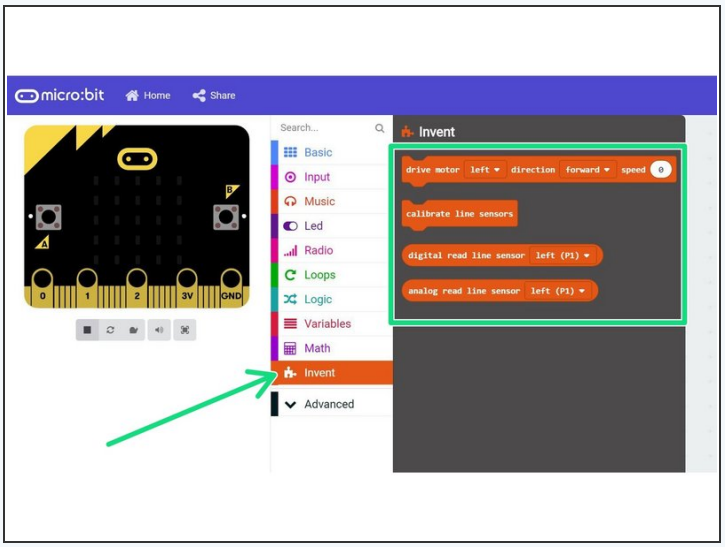
Assemble your Robot!

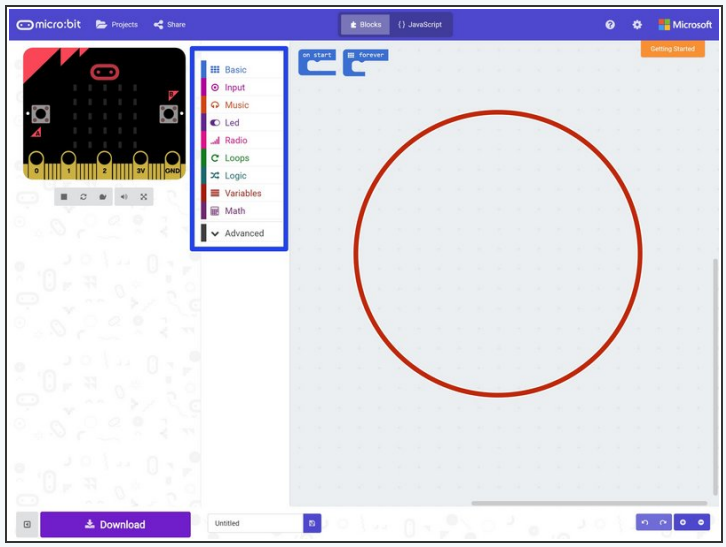
- Next, plug the main board and motors into the baseboard, just like the picture.
- Use the two **yellow**/**white** cables to connect the two motors to the main board.
- Make sure you plug the **left** motor into **M1** and the **right** motor into **M2**!



Step 3

Open the Editor





- We will use an **online editor** called **Microsoft make:code** to write the programs for our robot.
- As its online, you can use it **anywhere** and don't need to **install anything!** Go to [techcamp.org.uk/invent](https://www.techcamp.org.uk/invent) (https://www.techcamp.org.uk/invent) to get started.
- This will load the editor with some **custom blocks** already setup we have made for you, to help with controlling things like the motors easily. Check you have the **Invent** orange option in the blocks menu.

⚠ Each time you want to make a new program, **make sure you open the editor by going to** [techcamp.org.uk/invent](https://www.techcamp.org.uk/invent) (https://www.techcamp.org.uk/invent) otherwise you won't have these Invent blocks available.

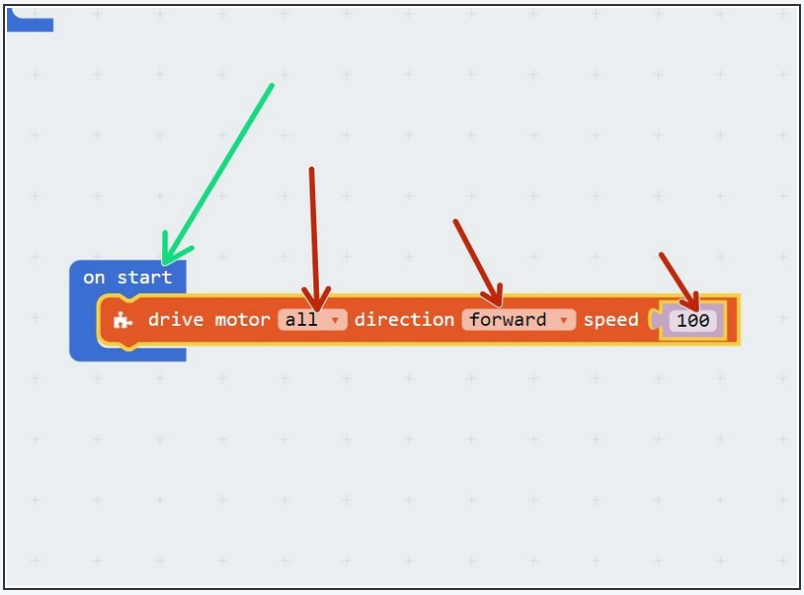
- You can build your program in the large area on the **right hand side,** by putting blocks together in a sequence
- You can access the blocks using the **menu on the left**

⚠ The code is **saved automatically in the browser** - if you want to keep programs to use them another day, **make sure you save them in your personal files, or on a memory stick**. We'll show you how to do this in a minute.

Step 4

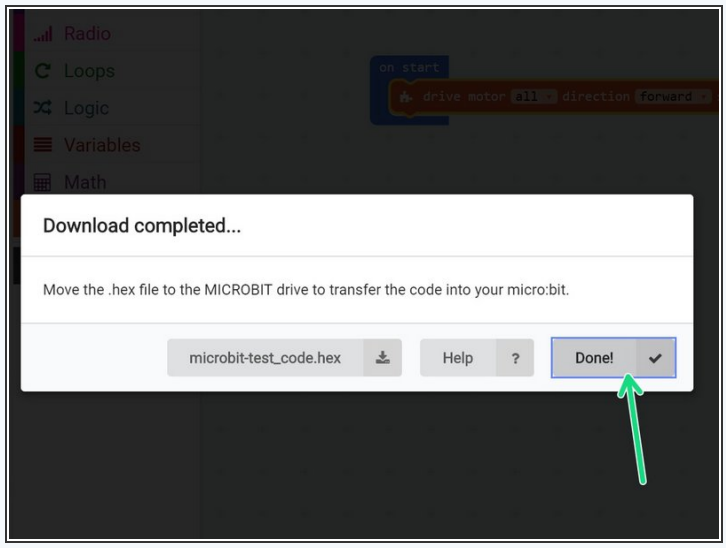
Make a Test Program

- Finally, let's make a **test program** to make sure everything works.
- Drag in a **motor block** from the **invent** menu, and put it inside the **on start** block.
- Change the block (just click on anything you need to change!) so it looks like the picture - it should drive **all the motors forward, at speed 100**.



Step 5

Name Your Program

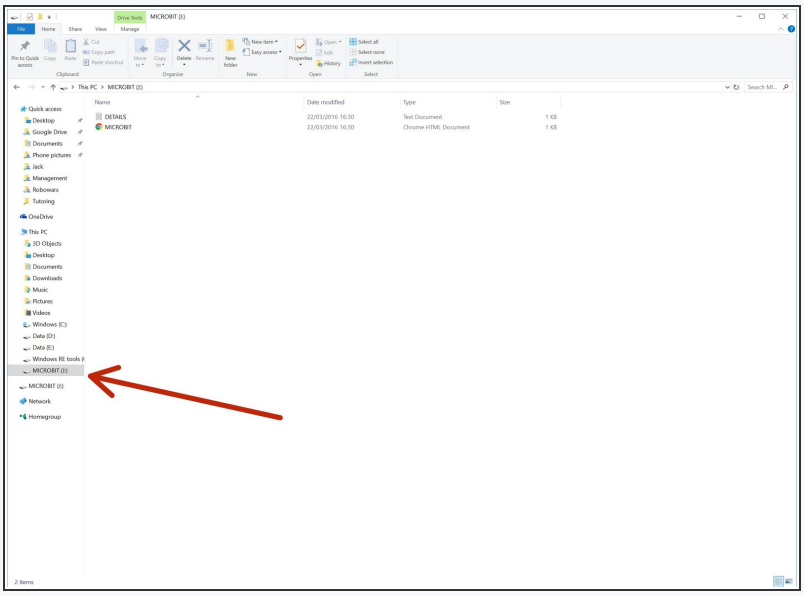


- It's always important to **name your program,** so you know what it does later!
- In the box in the bottom left, name your program **test_code** .
- Finally, click the **download** button. This will save the program to your computer, so we can **upload** it to the robot.
- When the download finished, click **Done!**

Step 6

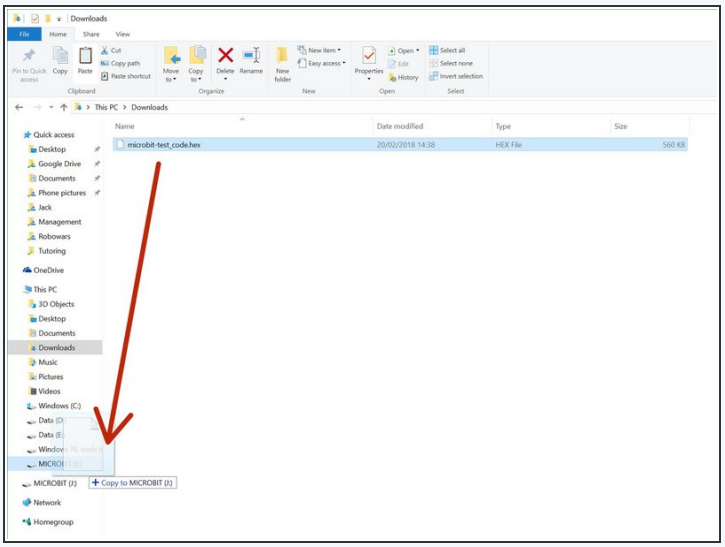
Upload to your micro:bit

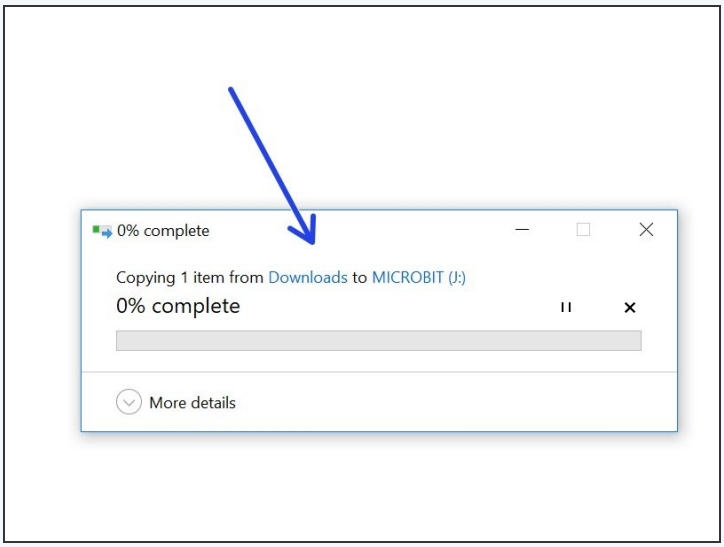
- The file we just downloaded is a **HEX file** - this is what we need to send to the micro:bit to make the program run.
- **Plug in your micro:bit** with the USB cable.
- If this is the first time the micro:bit has been plugged in, the computer might do some **setup** - once its finished, the micro:bit should appear like a **USB drive.**
- Open up the **File Explorer**, and click on the **MICROBIT** drive that has appeared. It should look like the picture.



Step 7

Copy the File





- All we need to do is copy the **HEX file** to the **MICROBIT drive!**
- Go to the **Downloads folder**, and drag the **microbit_test_code.hex** file onto the MICROBIT drive.
- **Wait** for it to copy, and that's it!
- Unplug the USB cable and **turn on the power switch** on the circuit board to start the program.

⚠ The program will run **automatically** - **make sure your robot doesn't run off the table!**

Step 8

Backup

- Don't forget, everything you do is only saved **in the browser**.
- Just in case, it's a good idea to copy any important **HEX files** you download that you might want again later to your personal files, or a **memory stick**.
- You can then **load** these files in the editor later to get your code back!
- If you want to look at everything you've done so far, or load an old project, simply click the **Projects** button in the top left of the screen.

We're all done! **Head onto the next section**.