

Welcome to Code Club!



CODE CLUB

About Code Club!



About me: Duncan Murray. Fox & Teela's Dad. Did Music & Electronics at University, ran the radio station, specialised in software. Programming for 34 years, run a software company, fly planes, play piano/guitar, keep chickens, write games/add-ons for flight simulators, play loads of games. First code club!!!!

About you! – Introductions, and who's done some coding before?

We're going to be looking at:



Scratch



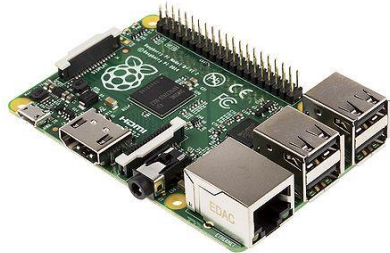
Python



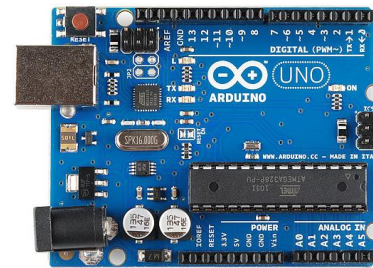
Unity3D



3D Printing



Raspberry Pi + Sense Hat



Arduino



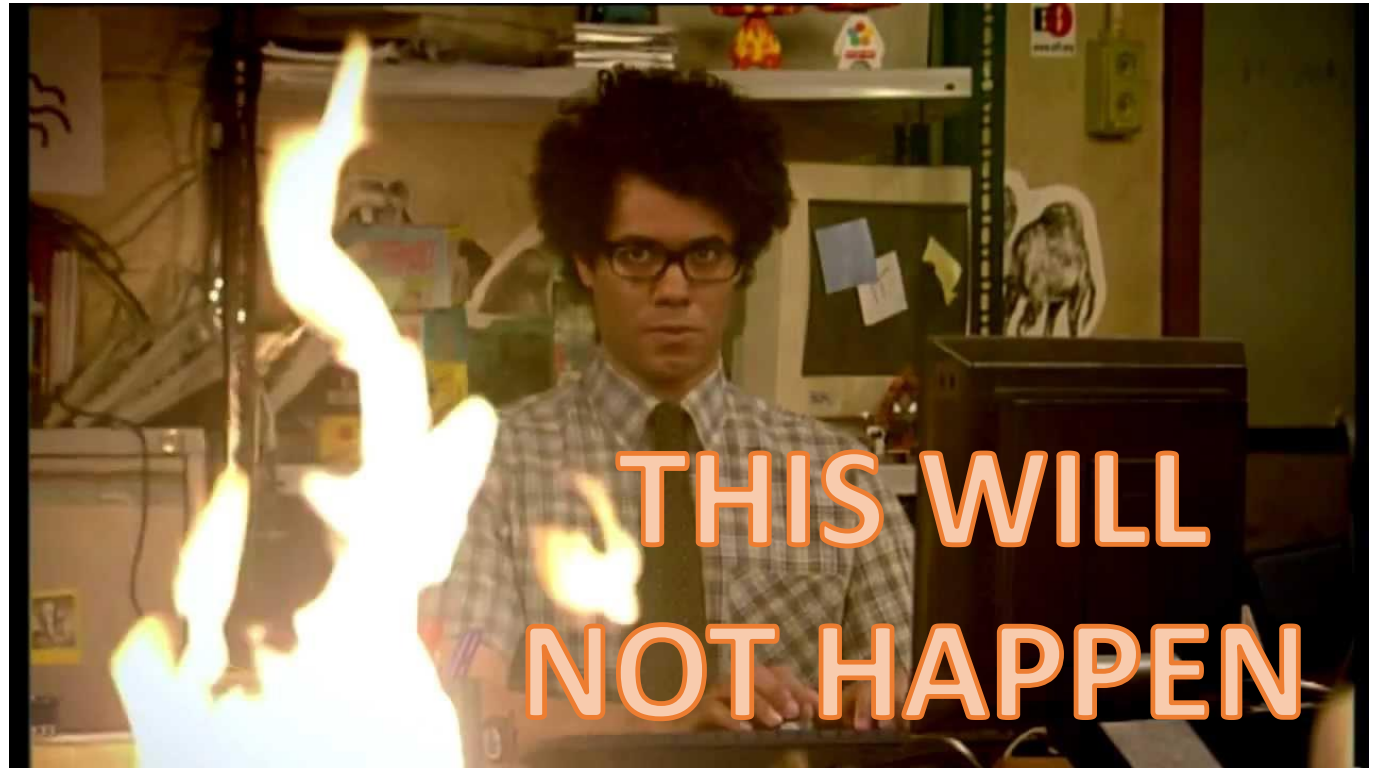


About Code Club!

We're going to learn how to make games, animations and other cool stuff!

You can work on your own, in pairs, groups, teams etc. **In Pairs today if you want**

Don't be afraid to experiment –
you **CAN'T BREAK ANYTHING** (yet)



If you find it too easy – make it more awesome!! Add more features, sounds, graphics, movement etc....
Make it better.

About Code Club!

Think like a robot!!!!!!!
Or Mr Spock from star trek!



- **Logically.**

For example, think how to do something step-by-step. Like: making a coffee

Get cup -> add coffee -> get kettle -> fill kettle -> boil kettle -> fill cup with water -> stir -> add milk? -> stir -> enjoy!
Repeat?

Computers work in the same way, so it's important you tell them how to do things in a step by step way too.

If you get stuck, or don't know something – **TRY a few things**, and **RESEARCH** before you ask one of the teachers/helpers. Even then, they'll likely give you a hint, rather than the answer straight away.

Figuring out why something doesn't work (debugging) work is 90% of programming!!!!

About Code Club!



Week 1: Scratch Activity 1, introduction, check everything works!

Every week – Scratch/Python activity from the CodeClub website.

Week 2: Variables, Maths, if... then ... else statements

Week 3: Boolean logic, While Loops

Week 4: Hardware, Raspberry Pi/Arduino

Week 5: Special Project

Week 6: Special Project

Above is just a guide - Bring in projects, or ideas for things to do/make!.

Special Project!



In addition to learning about programming in Scratch & Python, we'll do a special project for the end of the school year:

We're going to (try to) go.....



Code Club Website



<http://airyhallcode.club>


← → ↻ ⓘ www.airyhallcode.club ☆

Airyhall Code Club Customize 0 + New Howdy, Duncan

Airyhall Code Club

Resources and info for the Code Club

Scratch 2.0 Python Home



Welcome to Code Club!

January 11, 2018
Edit

Welcome to the Airyhall School Code Club Website!

The first code club meeting will take place on the 15th January 2018. In this first session we'll look at Scratch, and the Rock Band activity – you can find the sheet for this activity here:

<https://codeclubprojects.org/en-GB/scratch/rock-band/>

SEARCH

Search ... 🔍

ABOUT THIS SITE

Resources and Info for Code Club at Airyhall Primary School.

Today's Activity



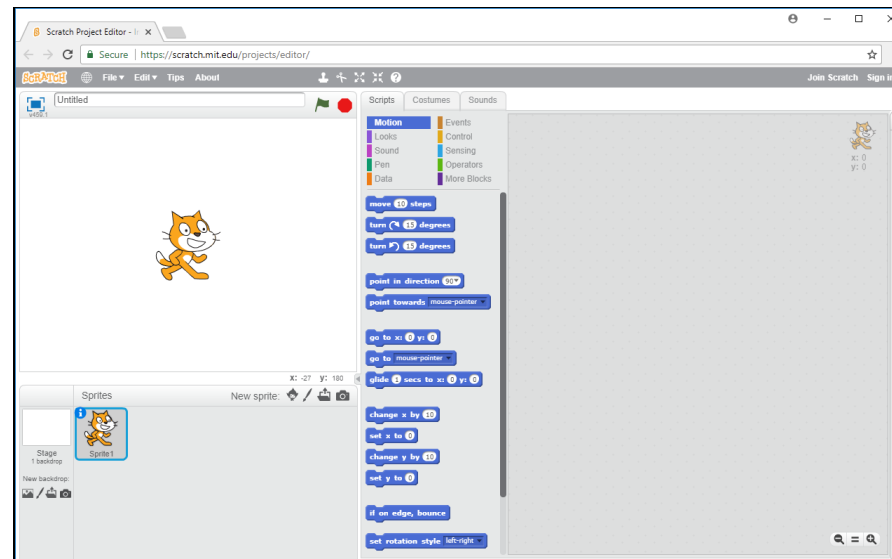
- **Getting Logged on!**
- **Introduction to Scratch**
- **Rock Band Walkthrough**
- **The Rock Band Activity**

Today's Activity

Choose a USB Memory Stick!!!!

Open up a web browser, and go to:

<http://jumpto.cc/scratch-new>



Intro To Scratch

Script Blocks

Costumes

Sounds



The image shows the Scratch Project Editor interface with several key areas annotated with text and red arrows:

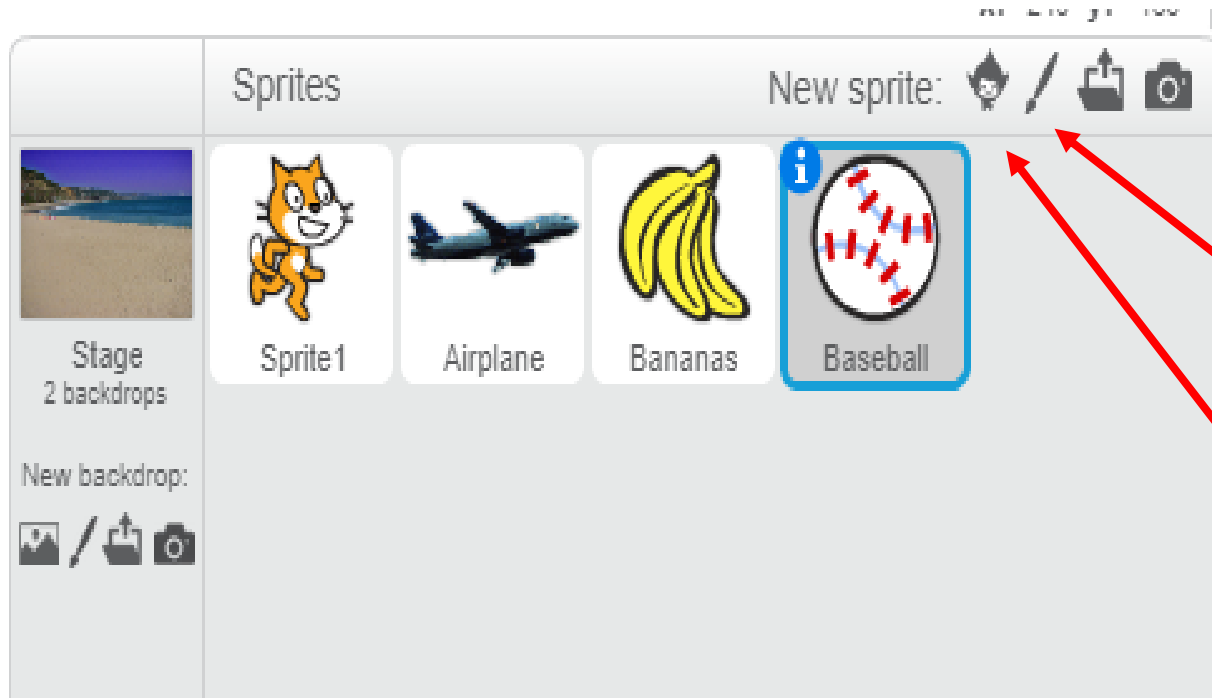
- Stage:** A red box highlights the central workspace. Inside, the Scratch cat sprite is labeled "Sprite" and the background is labeled "Backdrop".
- Script Blocks:** A red arrow points from the text "Script Blocks" to the "Scripts" tab in the block palette.
- Costumes:** A red arrow points from the text "Costumes" to the "Costumes" tab in the block palette.
- Sounds:** A red arrow points from the text "Sounds" to the "Sounds" tab in the block palette.
- Build Area:** The large right-hand panel is labeled "Build Area". It contains the "Current Sprite >" section with the Scratch cat and coordinates (x: 0, y: 0), and a list of script blocks such as "move 10 steps", "turn 15 degrees", "point in direction 90", "point towards mouse-pointer", "go to x: 0 y: 0", "glide 1 secs to x: 0 y: 0", "change x by 10", "set x to 0", "change y by 10", "set y to 0", "if on edge, bounce", and "set rotation style left-right".

Sprites

Sprites are pictures. Every scratch program has sprites.
Sprites are controlled by **scripts** (which are made from code blocks).

Sprites can:

- Move around the stage
- Change their costumes/appearance
- Play sounds (or music)
- Be controlled by the player/user
- React when they touch things (other sprites)

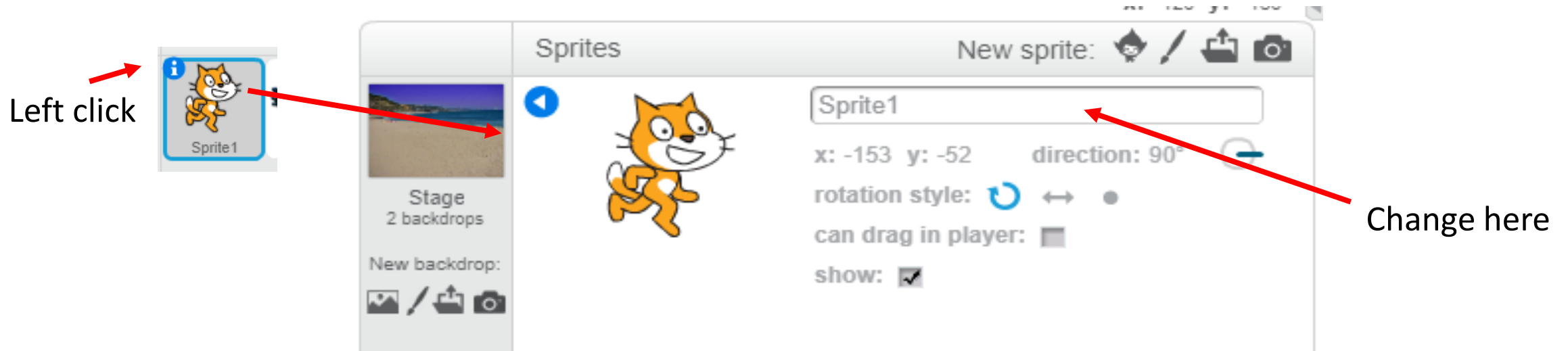


Draw a new sprite

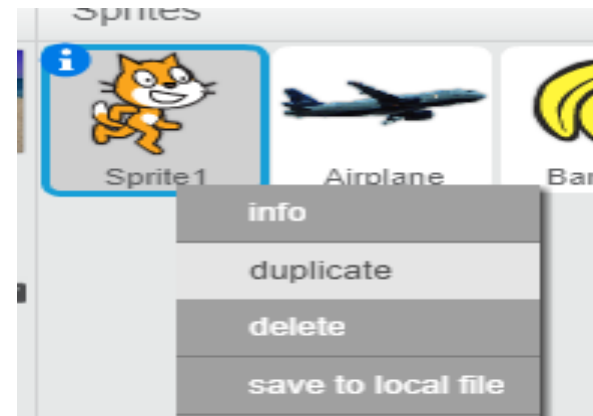
Choose From Library

Sprites

To rename a sprite, click on the blue “i” when the sprite is selected, then type the new name in the box



To copy a sprite, or duplicate it, **RIGHT CLICK** on the sprite in the sprites area



Sprites



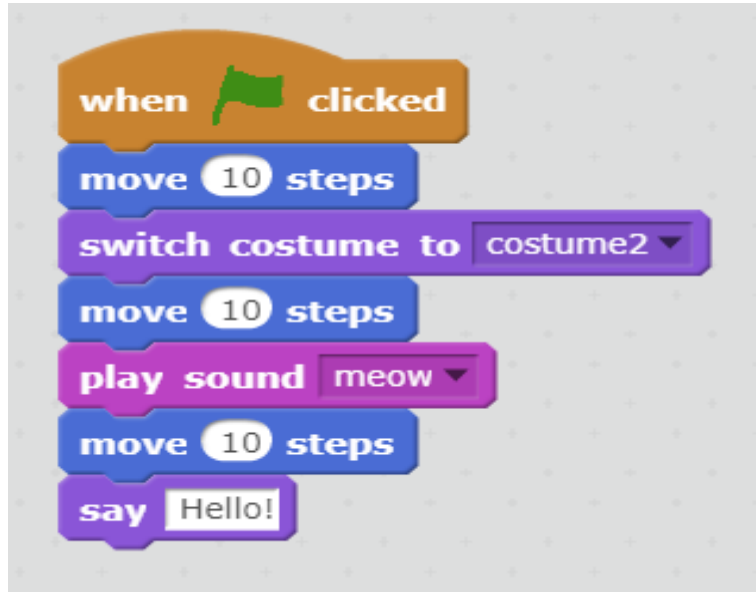
Adding Code to your sprite – Code blocks!

Check you have the right sprite selected!!!!!!

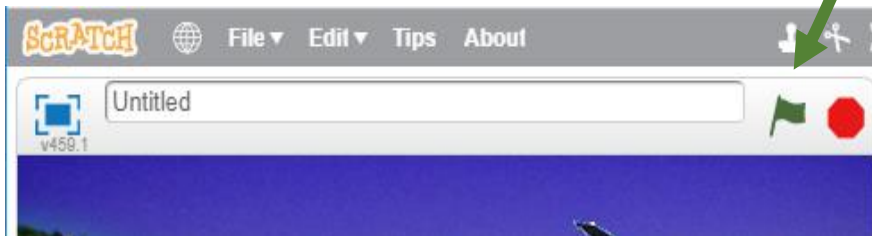
A screenshot of the Scratch Project Editor interface. The browser address bar shows "https://scratch.mit.edu/projects/editor/". The Scratch logo and navigation menu are at the top. The main stage area shows a beach background with an airplane flying over it. In the bottom-left corner, the "Sprites" panel is visible, showing a list of sprites: "Sprite 1" (a cat), "Airplane", "Bananas", and "Baseball". The "Sprite 1" is selected. The "Scripts" tab is active in the middle panel, showing a list of code blocks. A red arrow points from the "say sound" block in the Scripts panel to the "say Hello!" block in the code editor. The code editor shows a sequence of blocks: "when green flag clicked", "move 10 steps", "switch costume to costume2", "move 10 steps", "say sound meow", "move 10 steps", and "say Hello!". The "say sound" block is highlighted with a red circle, and a red arrow points to it from the Scripts panel. The "say Hello!" block is also highlighted with a red circle. The "say sound" block is currently set to "meow". The "say Hello!" block is currently set to "Hello!". The "say sound" block is currently set to "meow". The "say Hello!" block is currently set to "Hello!".

Sprites

Scratch will carry out the instructions in your blocks from **TOP** to **BOTTOM**

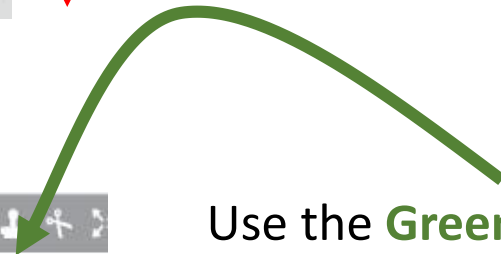


Starting and Stopping Programs

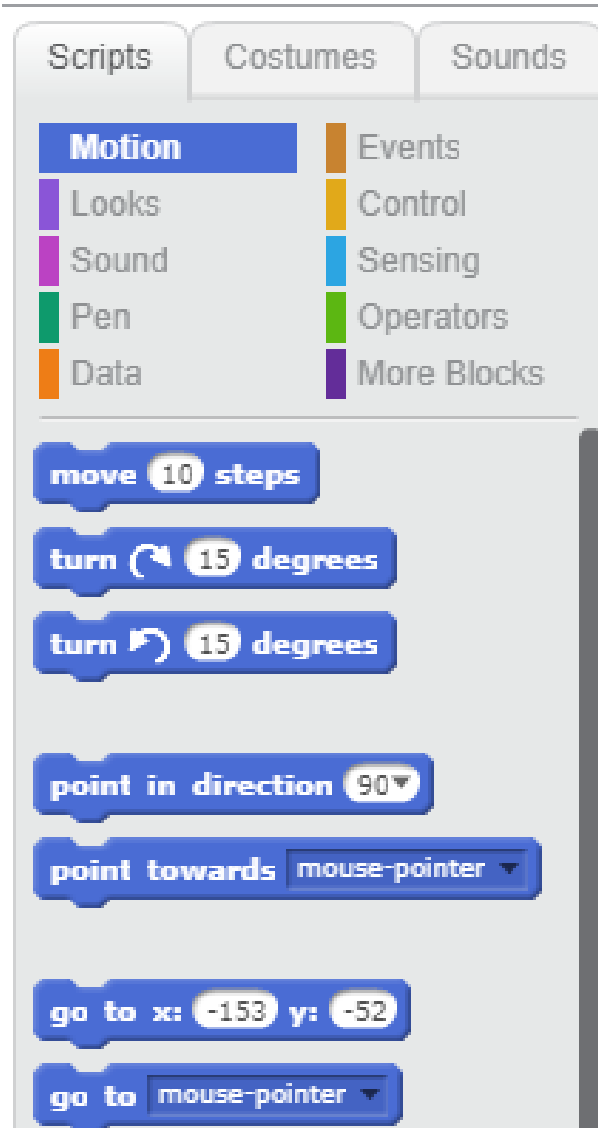


Use the **Green Flag** for start

Use the **Red Hexagon** for stop



Code Blocks



Different Types of block – colour coded

Motion,
Looks, Sound,
Pen

Control Sprites (move, change costume, draw lines)

Events, Sensing

Events make things happen when something is clicked/pressed. Sensing detects things happening

Data, Operators

Data and Operator blocks store numbers or words, and do things with them (variables)

Control

Control blocks make decisions about what instruction to do next

Code Blocks

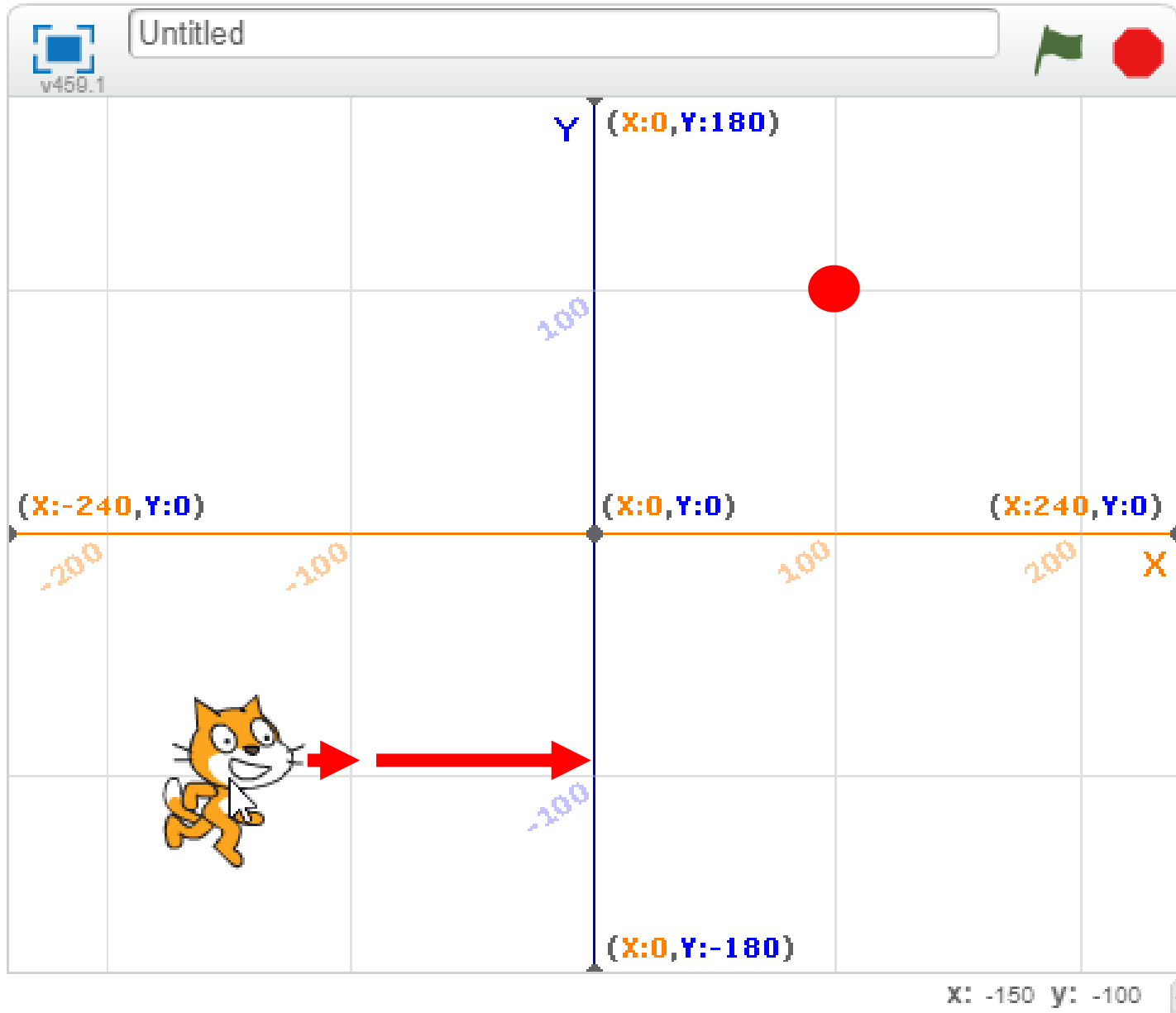
Start your script with an **Event** block



**Add other blocks
to tell your sprite
what to do**

Your script stops when it runs out of instructions

More about Movement – “coordinates”



```
move 10 steps
```

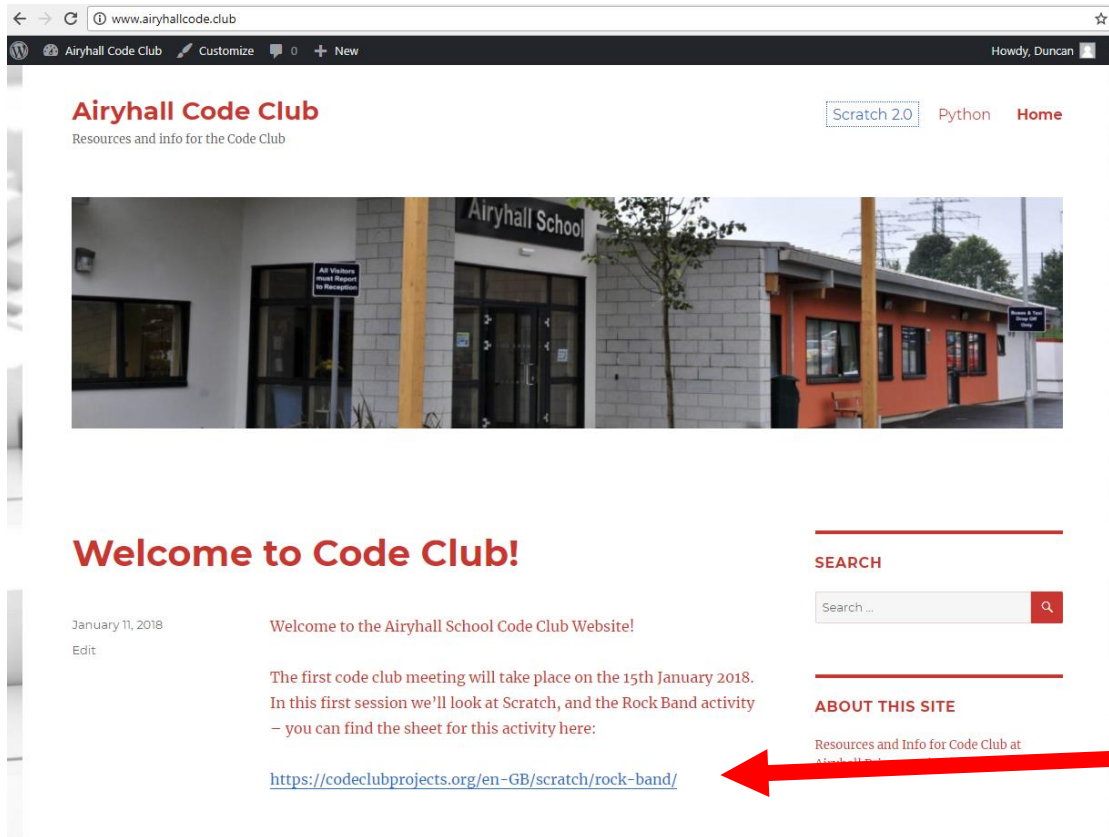
```
move 100 steps
```

```
go to x: 100 y: 100
```

Today's Activity

Open up a new browser **TAB**, and go to:

http://airyhallcode.club



Click the link for the activity notes!

