



Let's Learn About Scratch!



Has anyone coded
before?

What is Scratch?

- Scratch is an online coding website which allows you to create your own projects, games, and computer simulations!
- YOU are in control of what you create and the options that are available for you when coding are unlimited!
- Don't worry if you haven't coded before! Scratch uses "block" coding which you are able to 'drag and drop' to run your program!



Untitled by ashleylovnicki (unshared)



x: 240 y: -89

Sprites

New sprite: [Icons for new sprite]



Stage 1 backdrop

New backdrop: [Icons for new backdrop]

Scripts Costumes Sounds

- Motion
- Looks
- Sound
- Pen
- Data
- Events
- Control
- Sensing
- Operators
- More Blocks

```

move 10 steps
turn 15 degrees
turn 15 degrees
point in direction 90
point towards mouse-pointer
go to x: 0 y: 0
go to mouse-pointer
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
  
```

Stage area with a grid background. A small Scratch cat icon is in the top right corner with coordinates x: 0, y: 0. A search icon is in the bottom right corner.

Backpack

MOTION

This allows you to move, rotate and manipulate the movement of the Sprite.

Scripts

Costumes

Sounds

Motion

Looks

Sound

Pen

Data

Events

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Sensing

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More Blocks

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point in direction 90

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go to x: 0 y: 0

go to mouse-pointer

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

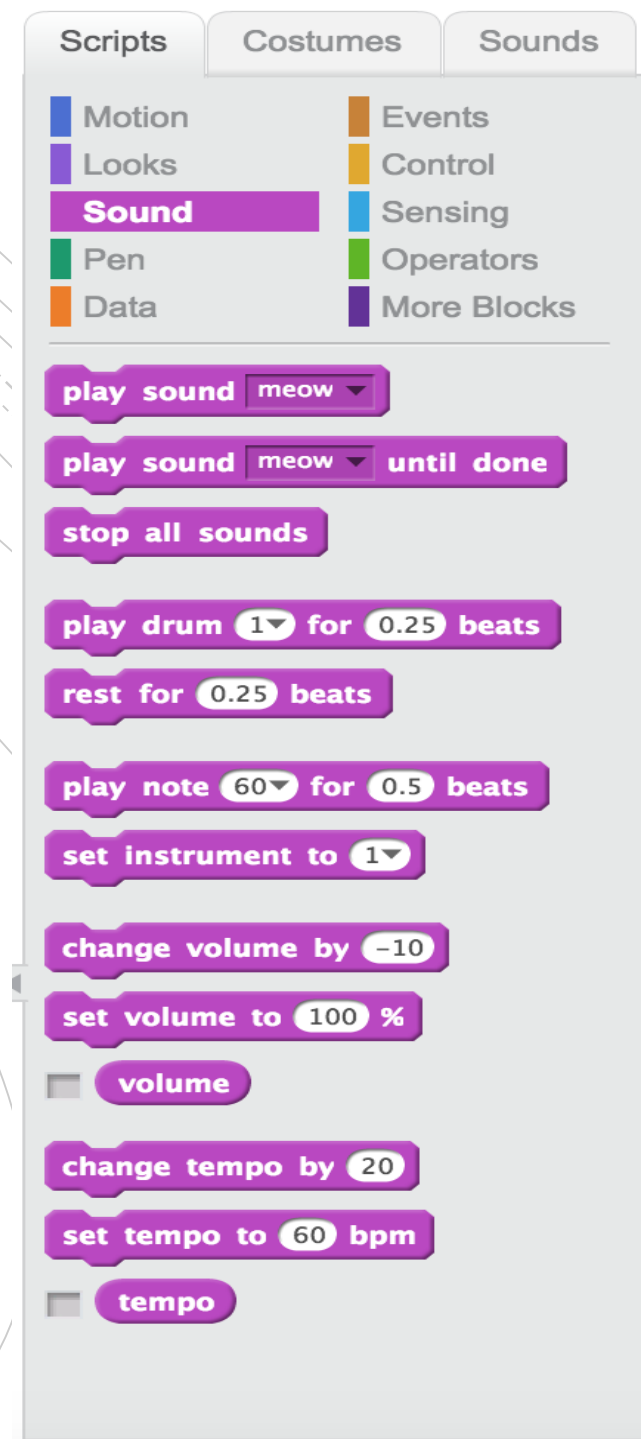
LOOKS

This allows you to modify the way that the Sprite appears in your code.

The image shows the 'Looks' block palette in Scratch. The palette is organized into two columns of categories: Motion, Looks, Sound, Pen, and Data on the left; and Events, Control, Sensing, Operators, and More Blocks on the right. The 'Looks' category is highlighted in purple. Below the category list, a scrollable list of 'Looks' blocks is shown, including: 'say Hello! for 2 secs', 'say Hello!', 'think Hmm... for 2 secs', 'think Hmm...', 'show', 'hide', 'switch costume to costume2', 'next costume', 'switch backdrop to backdrop1', 'change color effect by 25', 'set color effect to 0', 'clear graphic effects', 'change size by 10', and 'set size to 100 %'.

SOUND

This allows you to add in different sounds for your Sprite.

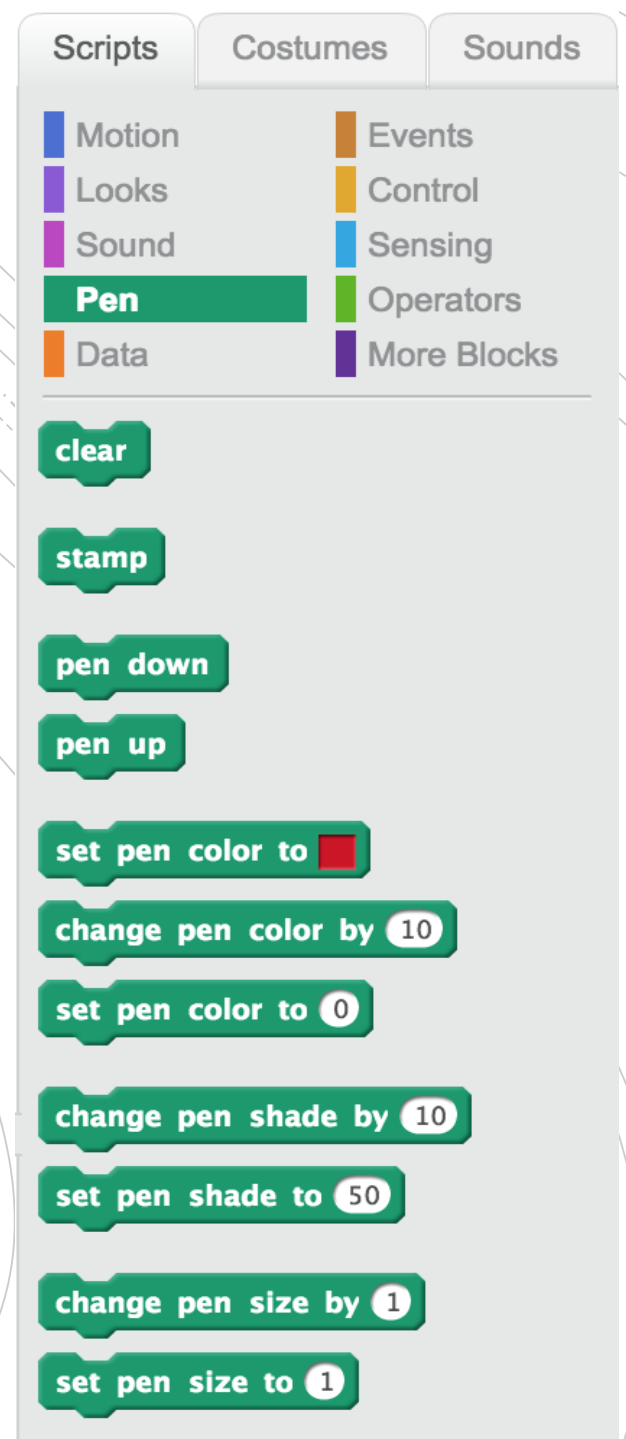


The screenshot shows the Scratch Sounds menu with the following blocks:

- play sound **meow**
- play sound **meow** until done
- stop all sounds
- play drum **1** for **0.25** beats
- rest for **0.25** beats
- play note **60** for **0.5** beats
- set instrument to **1**
- change volume by **-10**
- set volume to **100** %
- volume
- change tempo by **20**
- set tempo to **60** bpm
- tempo

PEN

This allows you to draw shapes and modify the way that these drawings appear.




The image shows the Scratch Pen blocks interface. At the top, there are three tabs: 'Scripts', 'Costumes', and 'Sounds'. Below these are two columns of block categories: 'Motion', 'Looks', 'Sound', and 'Data' on the left; and 'Events', 'Control', 'Sensing', 'Operators', and 'More Blocks' on the right. The 'Pen' category is highlighted in green. Below the categories, a list of Pen blocks is shown, including 'clear', 'stamp', 'pen down', 'pen up', 'set pen color to' (with a red color swatch), 'change pen color by' (with a value of 10), 'set pen color to' (with a value of 0), 'change pen shade by' (with a value of 10), 'set pen shade to' (with a value of 50), 'change pen size by' (with a value of 1), and 'set pen size to' (with a value of 1).

EVENTS

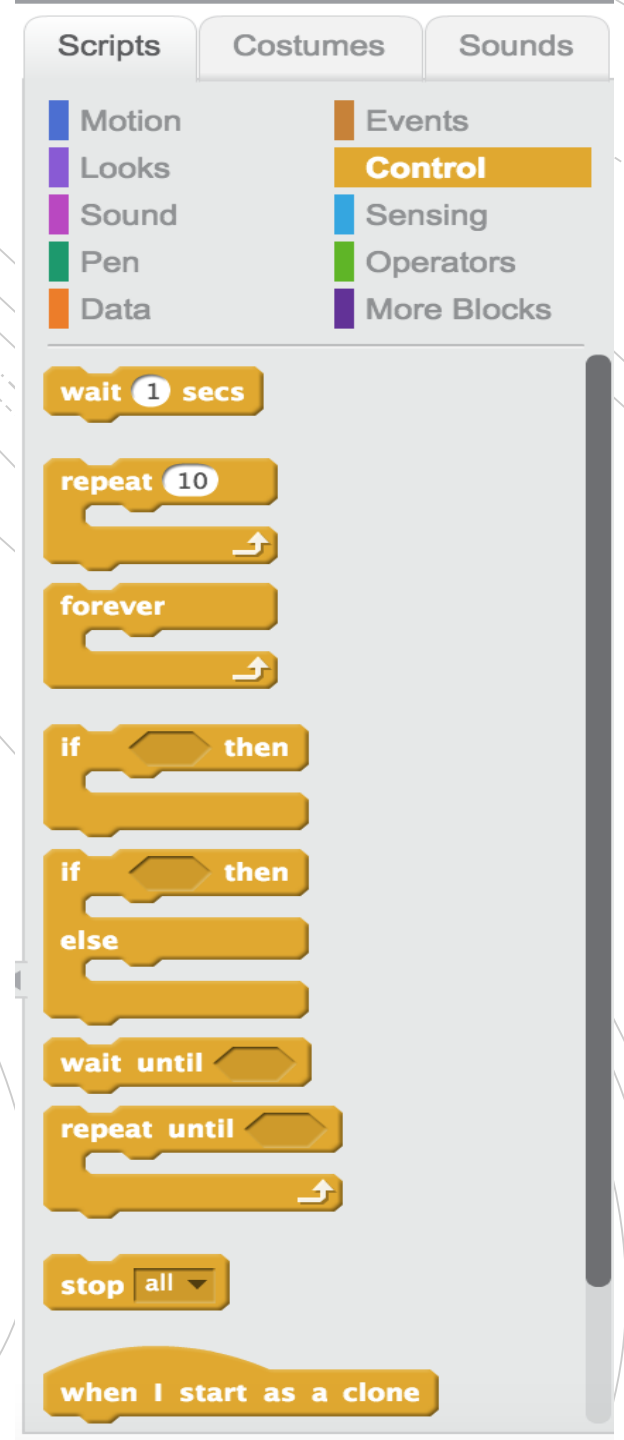
This controls how and when your program will 'run' or beginning playing.

The image shows the 'Scripts' palette in Scratch, with the 'Events' category selected. The palette is organized into three tabs: 'Scripts', 'Costumes', and 'Sounds'. Under the 'Scripts' tab, there are several categories of blocks: Motion (blue), Looks (purple), Sound (pink), Pen (green), Data (orange), Events (orange), Control (yellow), Sensing (light blue), Operators (light green), and More Blocks (dark purple). The 'Events' category is expanded, showing several event blocks:

- when  clicked
- when key pressed
- when this sprite clicked
- when backdrop switches to
- when >
- when I receive
- broadcast
- broadcast and wait

CONTROL

This allows you to slow down the Sprite or repeat parts of the code.



SENSING

This can have the user input different information and can modify the code based on mouse movement.

The image shows the Sensing block palette in Scratch. The palette is organized into three columns: Scripts, Costumes, and Sounds. The Sensing category is highlighted in blue. The blocks are as follows:

- touching** mouse-pointer ?
- touching color** ?
- color** is touching ?
- distance to** mouse-pointer
- ask** What's your name? and wait
- answer**
- key** space pressed?
- mouse down?**
- mouse x**
- mouse y**
- loudness**
- video** motion on this sprite
- turn video** on
- set video transparency to** 50 %
- timer**
- reset timer**

OPERATORS

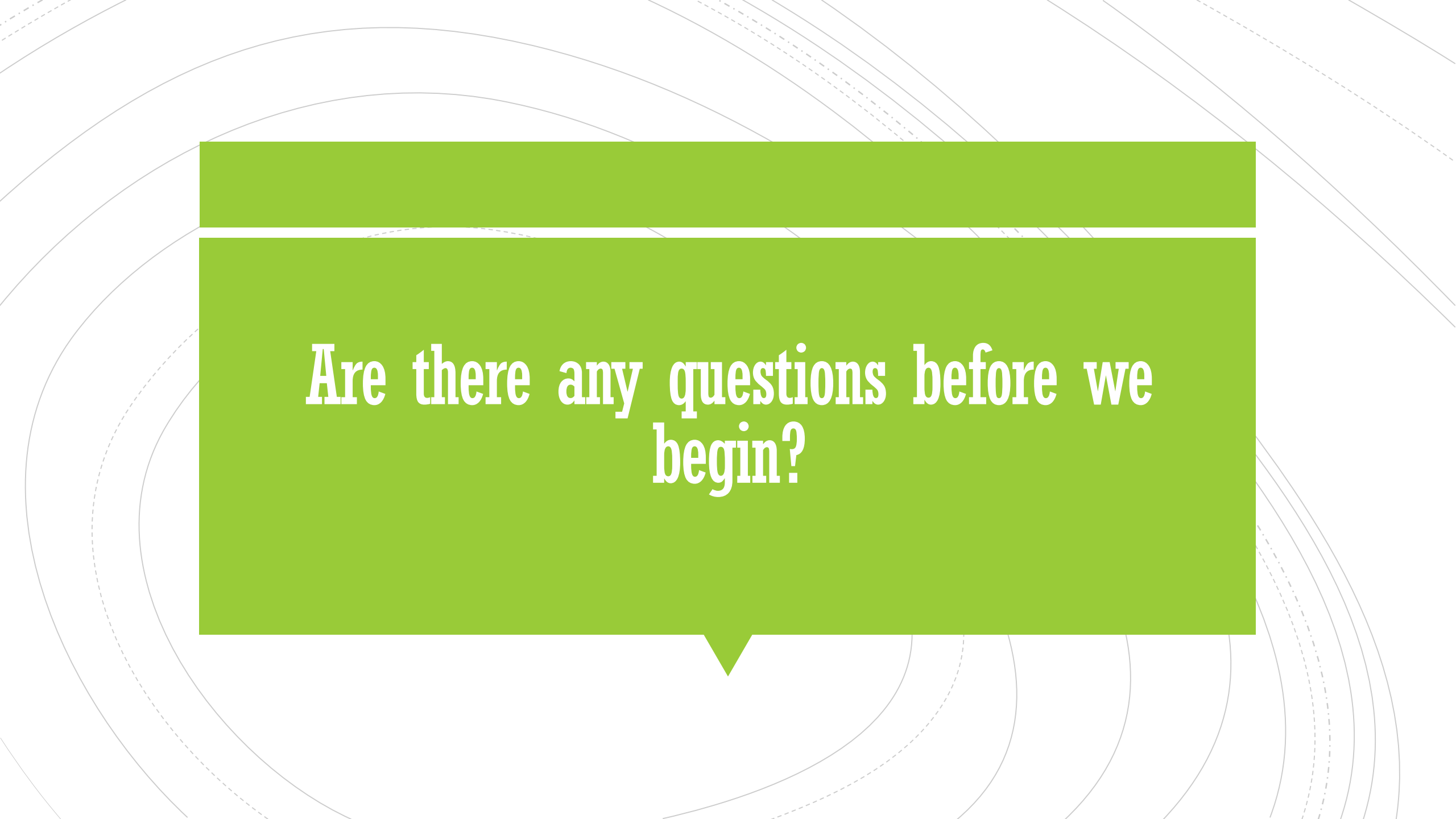
This has different mathematical operators so that you can complete different math problems if you code requires.

The image shows the Scratch Operators block palette. At the top, there are three tabs: "Scripts", "Costumes", and "Sounds". Below these are two columns of category icons: "Motion", "Looks", "Sound", "Pen", "Data" on the left, and "Events", "Control", "Sensing", "Operators", "More Blocks" on the right. The "Operators" category is highlighted in green. The main area displays various operator blocks: four basic arithmetic operators (+, -, *, /) each with a toggle switch; a "pick random 1 to 10" block; three comparison operators (<, =, >) with input fields; three logical operators (and, or, not) with input fields; three text operators (join, letter, length of) with input fields; and two other operators (mod, round) with toggle switches.

Some common Scratch terms...

- *Sprite* → this is what we call the icon of the program. When we you first open the program the default is an orange cat.
- *Background* → this is the back colour of the program. When you first open the program the default is a white background.
- *Loop* → this is something you might heard talk about. As you work through the worksheets we will talk about loops but essentially these are a way to repeat code in a program.





Are there any questions before we begin?