Y7 Booklet Scratch

Lesson 1

Making a star hunter game - how sequence, selection and iteration can be used in gaming?

Do Now:

1. Imagine you are telling a friend how to **make toast**. Write down the first **three** steps in the correct order.

2. Imagine you are giving instructions to a **robot** that has no intelligence. You want it to **walk across the room**. What happens if you forget to tell it to stop?

3. You are playing a Scratch game where pressing the **space bar** makes a character **jump**.
   If you **press it five times in a row**, what will happen?

   a) The character jumps once.
   b) The character jumps five times.
   c) The character does nothing.

Key Terms:

Sequence	The order in which steps are carried out
Selection	When we make a choice or decision
Iteration	Repeating instructions
Stage	Where you see the output of your Scratch program
Sprite	Things that move and react in your Scratch program

Signing up to Scratch

Sign up to Scratch with your school email address.
https://scratch.mit.edu/

A Scratch Tour

- Teacher to go through a tour of Scratch
- How the window is divided up
- How to stop and start
- Sprites and stage

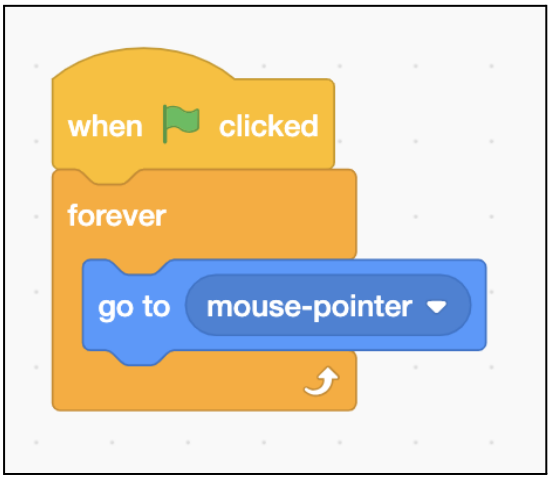
Building a “Star Hunter’ Game
The aim of the game is to collect as many stars as you can. Use the cat to collect the stars, but watch out for deadly octopuses. You’ll need to move quickly to succeed.

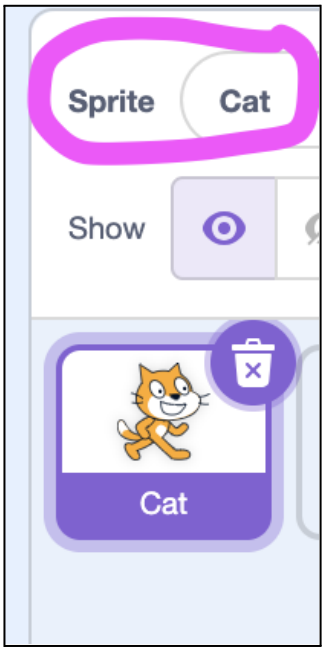
Watch a teacher demo of the game.

Make the cat:

1. **Add the code below to the cat sprite.**
   The cat will then follow your mouse pointer. Click the green flag to test.

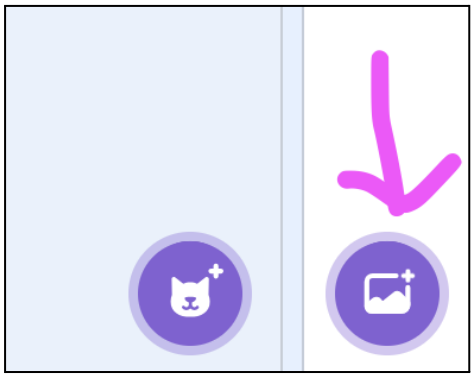
2. **Change the sprite name from ‘sprite1’ to ’cat’**





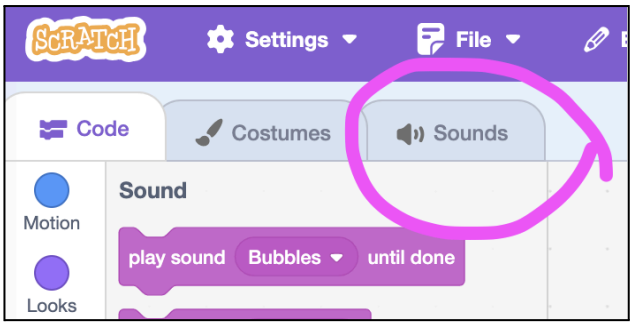
Add a background

1. At the bottom right of the screen click this circle button to choose a backdrop.
2. Search for the ‘underwater image’ (or choose your own background)

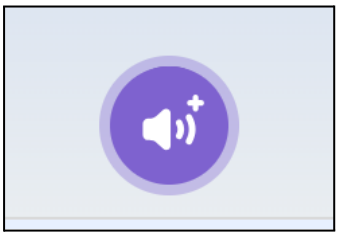


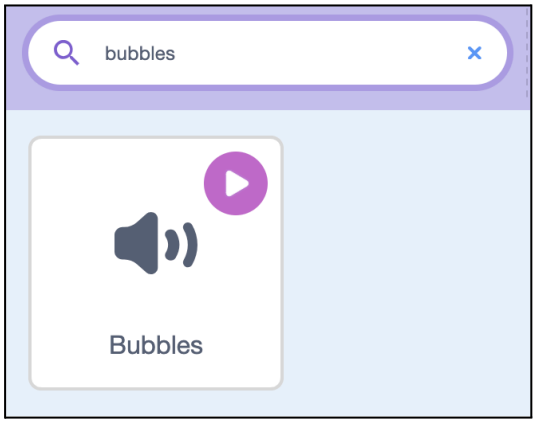
Add sound to the cat sprite

1. Click on the cat sprite
2. Click on the ‘sounds’ tab (top left)

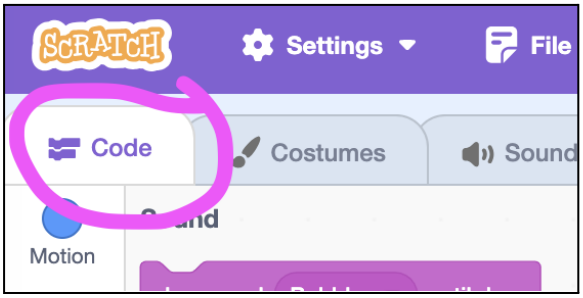


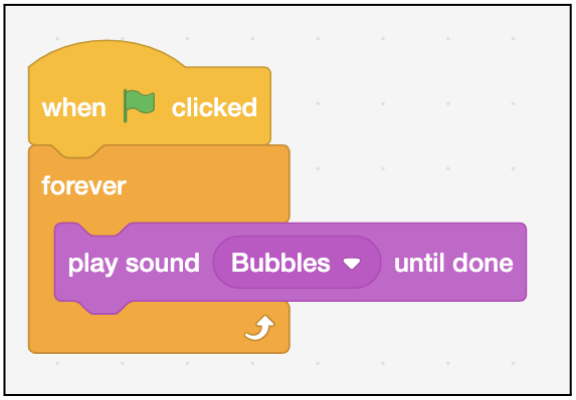
3. Click on the speaker icon at the (bottom left)
4. Search for the **‘bubbles’** sound and press play



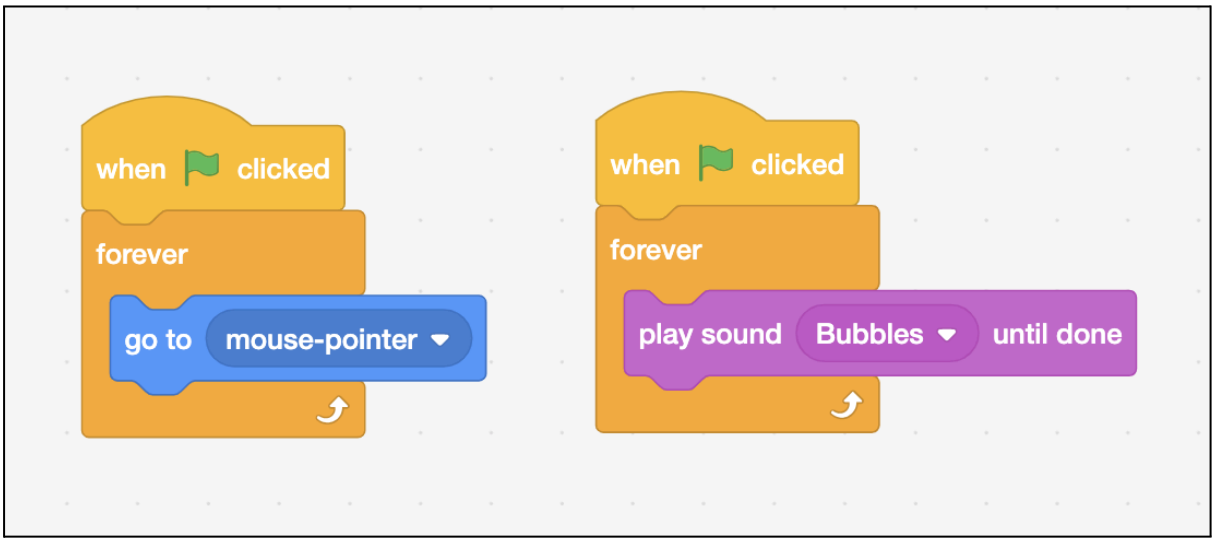


5. Click on the ‘code’ tab
6. Add this code to the cat sprite





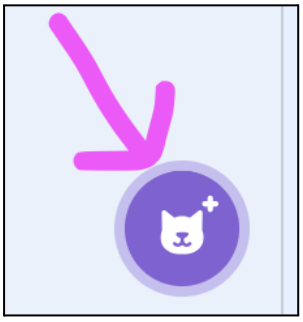
Your code on your Cat should now look like this:

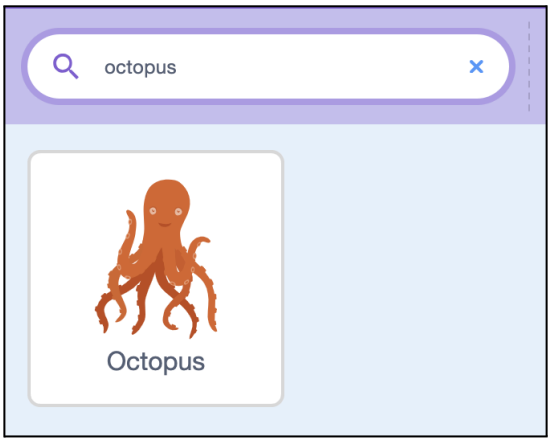


Add an enemy

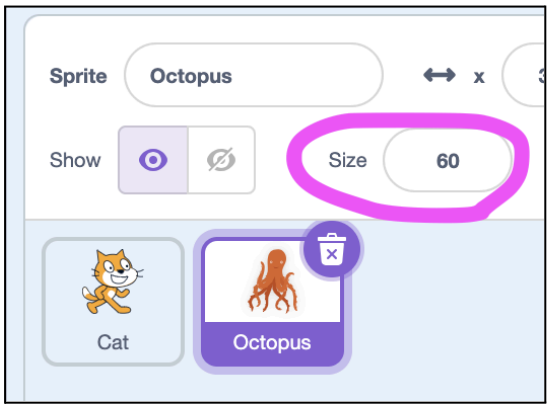
You will add a deadly octopus which moves around the stage, the player has to keep out of it's way.

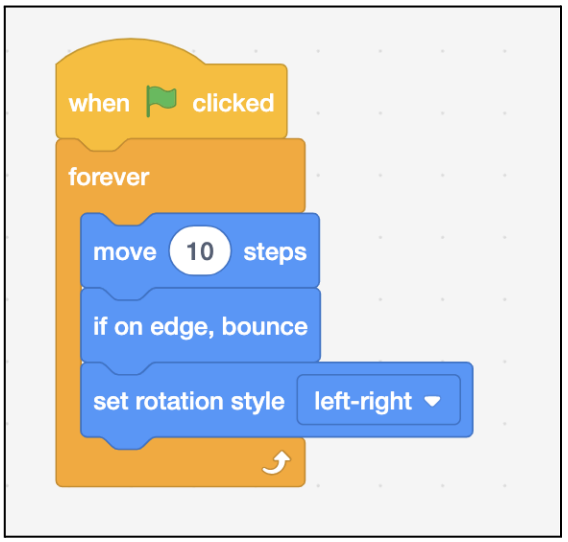
1. Click the 'add sprite' button at the bottom right of the screen.
2. Search for 'octopus' or choose your own character.





3. Change the size of the octopus sprite to 60%
4. Add the following code to the **Octopus** sprite.

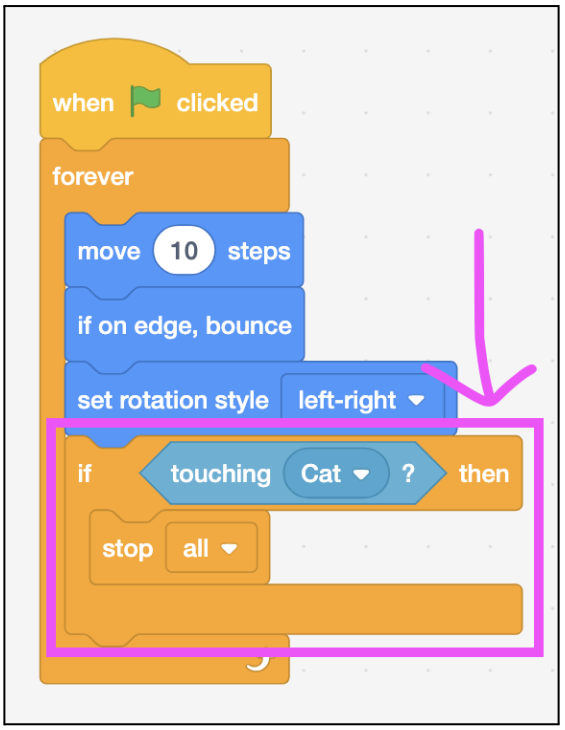




Collisions

You will now add code to stop the Cat and Octopus moving if they collide.

1. Add this code inside the pink square to your **Octopus** code you just added above. (Your Cat might be called Sprite1 if you didn't rename it earlier.)

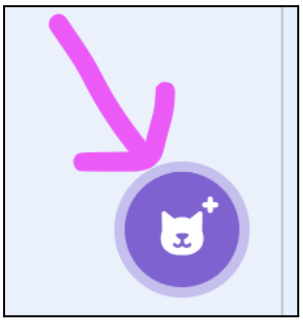


Collecting stars

In your game your Cat needs to collect underwater treasure (stars).

Add a new Star sprite

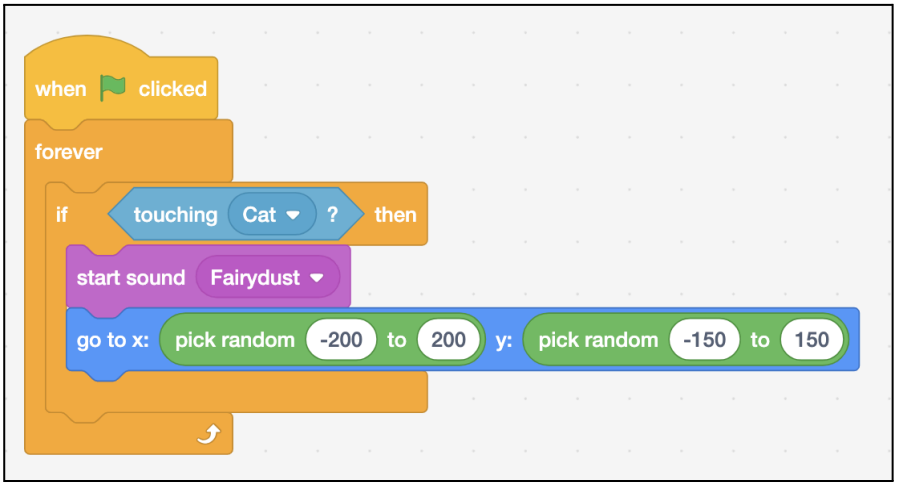
1. Click the **'add sprite'** button at the bottom right of the screen.
2. Search for '**star**' or choose your own character.



Add this code to the Star sprite

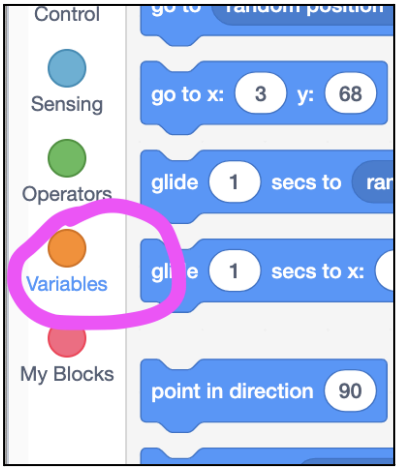
This will make it move to a random location when the cat touches it.

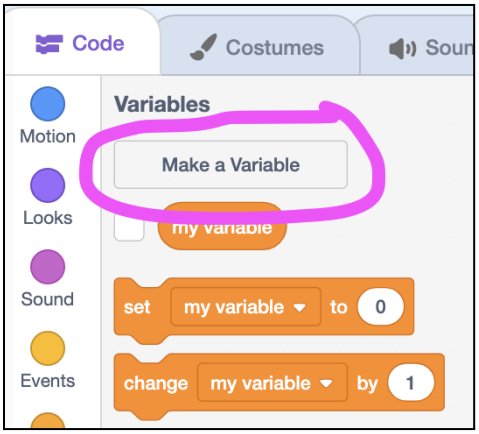
You will need to make sure you are clicked on the star sprite.
To get the sound, click on the ‘sounds’ tab and search for the sound, like you did whe jn adding the bubbles sound on the cat.

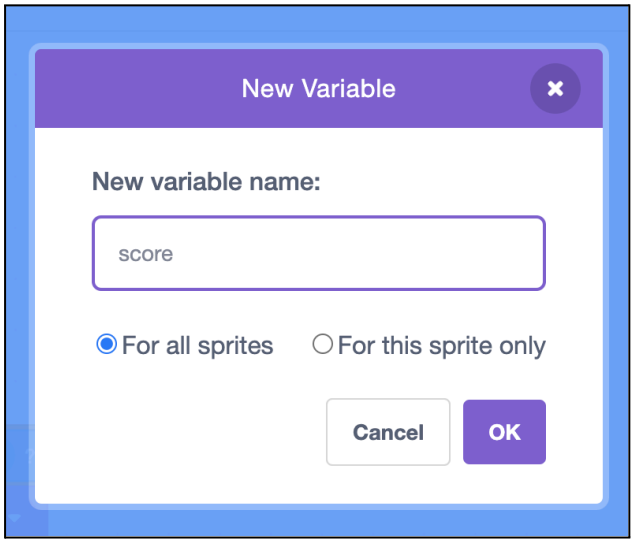


Extension: Scoring

Create a variable called **‘score’.**

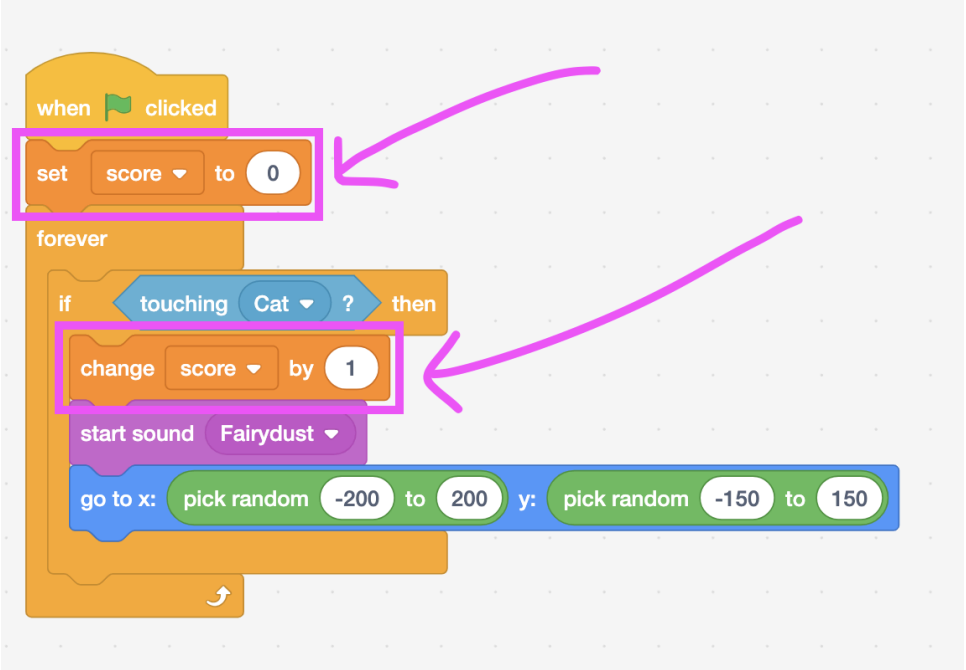






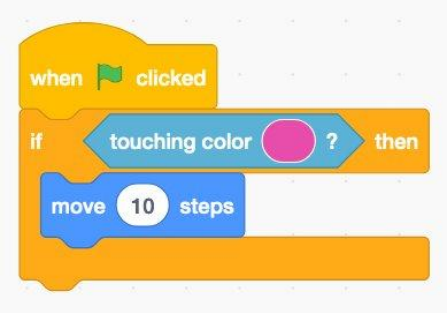
Add 2 lines of code to the STAR sprite

1. Setting the score to 0 when the game starts
2. Increasing the score by 1 when the **Cat** touches the **Star**.

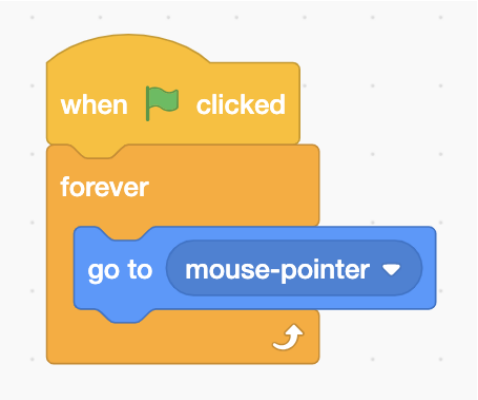


End of lesson Quiz:

1. What are the 3 programming concepts?
   a. S _____
   b. S _____
   c. I_____
2. Which block of code shows selection (making a decision)



3. Which block of code shows iteration (repeating / loops)


when clicked
forever
go to mouse-pointer