


# Cat and Mouse



Starter:

<https://scratch.mit.edu/projects/1267587027/editor>

Don't forget to remix and rename.

 Remix

1

The starter project has four sprites;

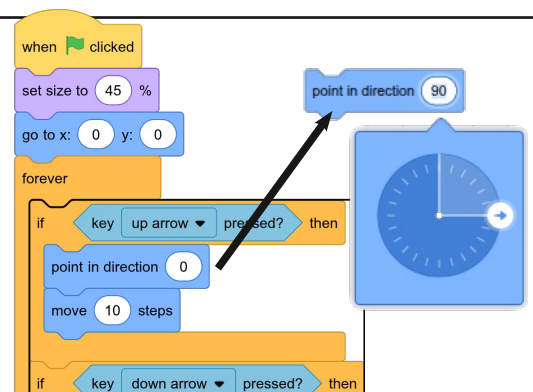
- the **cat**, which the player will move with the arrow keys
- the **mouse**, which the cat will try to catch
- a **tennis ball**, which will fly around the screen and the cat has to avoid
- a **message** to show that the game is over

This game will use **clones** so that there will be lots of mice to catch and lots of tennis balls to avoid. Clones let Scratch make lots of copies of the same sprite.

2

In the **cat** sprite add some code to move when the arrow keys are pressed.

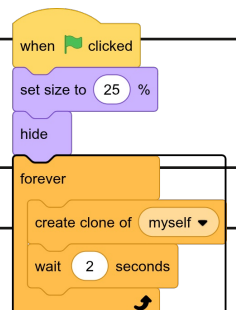
- The picture on the right shows one **if** block to make the cat move up. You will need to make **four** for all the directions.
- When you click on the number in the **point in direction** block a circle will appear with an arrow so you can set the direction correctly for each key.
- **Hint:** The numbers for the directions are; 0 for up, 90 for right, 180 for down and -90 for left.



3

The **mouse** sprite has two scripts - one that runs when the green flag is clicked and the other when a clone is started.

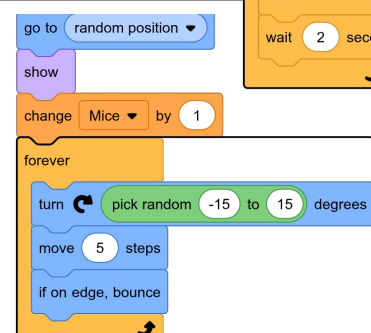
- In the green flag script clone the mouse every two seconds.



4

Each mouse clone that is made is going to run around for the cat to chase.

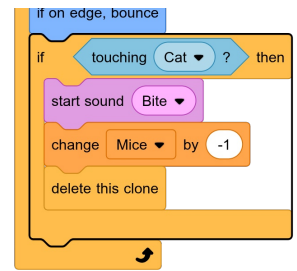
- In the **when I start as a clone** script make the mouse run forward.
- Make the mouse turn left or right at random. The code chooses a random number between -15 and 15 and uses it in a turn right block. If the number is negative, Scratch turns the mouse left instead.



5

Now to make the cat catch the mouse. In the **clone** script of the **mouse**, check if it is touching the cat.

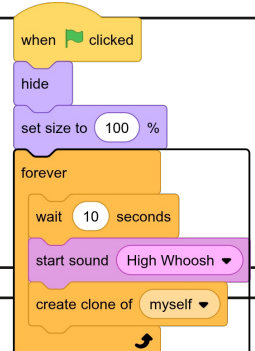
- Play a sound and remove this clone of the mouse.
- There is a variable **Mice** that counts how many mice there are. This needs to be reduced by one.
- The **Mice** count variable will be used to end the game later.



6

Right now the game is too easy. Let's make it more challenging. Some flying tennis balls will make it harder. The **tennis ball** sprite also has two scripts; when the green flag is clicked and when starting as a clone.

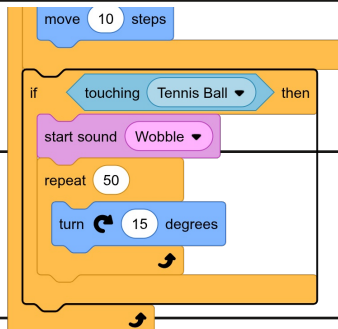
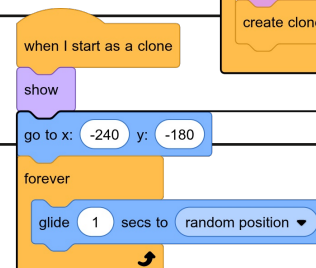
- Add code to the **when green flag is clicked** script to make a new tennis ball appear every 10 seconds.



7

The tennis ball needs to fly around.

- Add code to the **when I start as a clone** script to make keep gliding to random places.



8

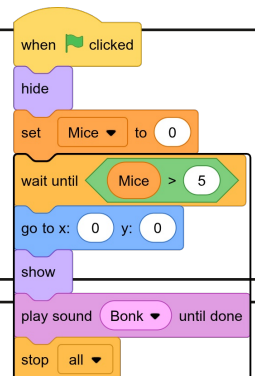
The tennis balls are not bothering the cat yet. Lets make it so that the cat is stunned when it is hit.

- In the **cat** script check to see if it is touching a tennis ball and make it spin. This goes in the **forever** loop.

9

We will end the game when the number of mice gets too big. This stops the game getting out of control.

- In the Message sprite add code to check when there are too many mice.
- When this happens, show the message and stop all the other scripts.



10

What can you add to the game? Here are some ideas;

- Keep score of how many mice the cat has caught.
- Make the mice move at different speeds.
- Make the new mice appear at random instead of every 2 seconds.
- Make the tennis balls disappear when they hit the cat.
- Something else from your own imagination!

