

Cat and Mouse Game

Academy of Code



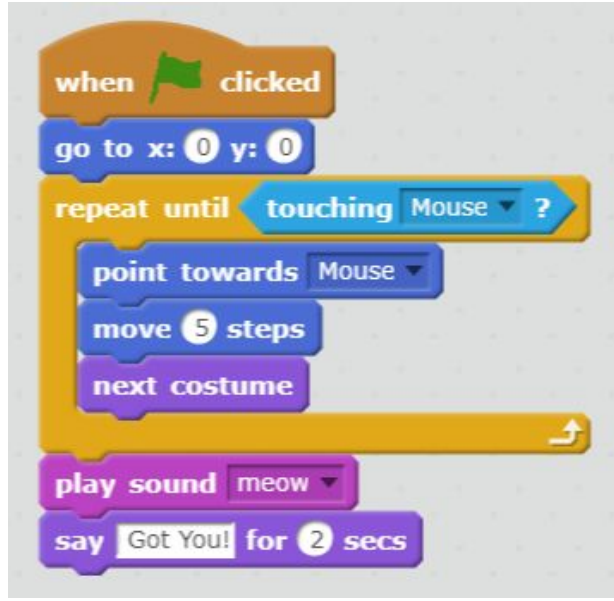
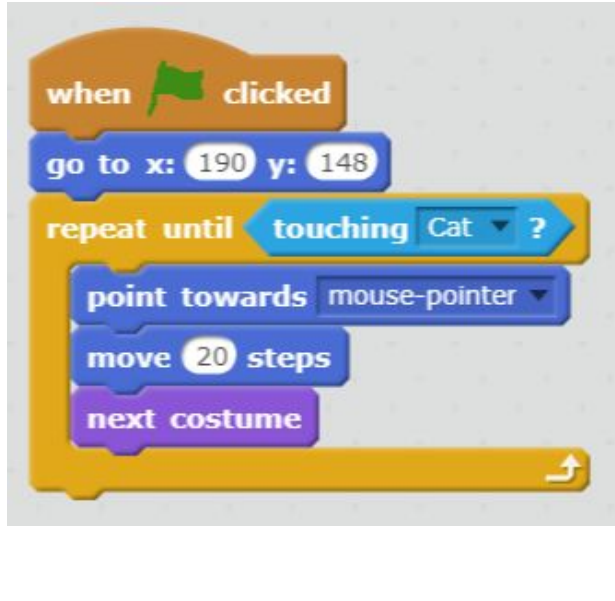
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1 Cat and Mouse Game Basic

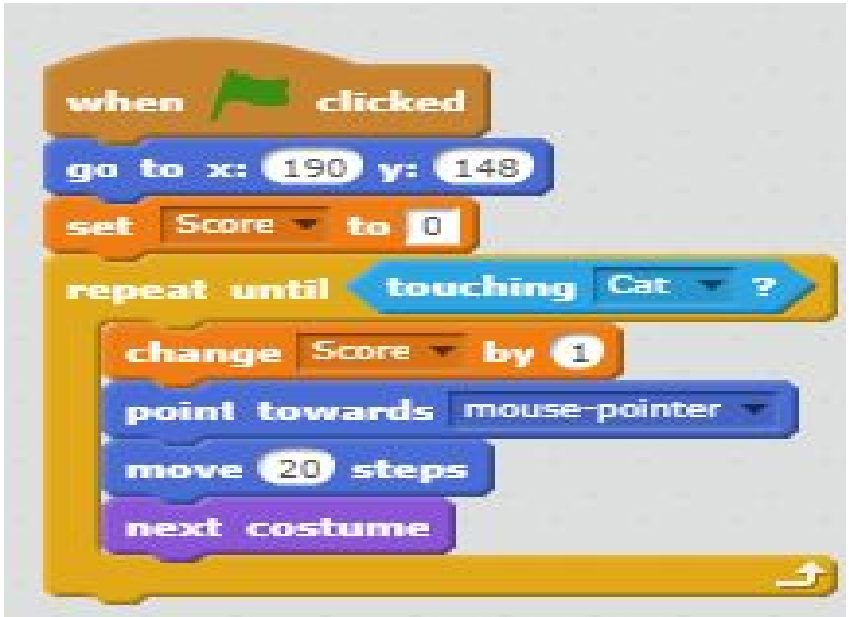
You need to make the following steps:

- Rename the Scratch Cat to “Cat”
- Add in a new sprite for the mouse and call it “Mouse”.
- First make sure the Cat and Mouse always start at their same positions on the stage. So in this example the Cat starts at the centre of the stage and the Mouse starts at the top right hand corner.
- Use a repeat until loop for the Cat with sensing for the Mouse to move pointing toward the Mouse.
- Use a repeat until loop for the Mouse with sensing for the Cat and move pointing towards the mouse-pointer.
- Let the Cat “Meow” when catches the Mouse!
- Add in animation for the Cat and Mouse as they move.

Cat Code	Mouse Code
 <pre>when green flag clicked go to x: 0 y: 0 repeat until touching Mouse ? point towards Mouse move 5 steps next costume play sound meow say Got You! for 2 secs</pre>	 <pre>when green flag clicked go to x: 190 y: 148 repeat until touching Cat ? point towards mouse-pointer move 20 steps next costume</pre>

Once completed we can add a scoring system to our Cat and Mouse Game.

2 Cat and Mouse Game Scoring

Steps	Mouse
<p>Create a variable called: Score</p> <p>Set Score to “0” in the Mouse Code.</p> <p>Change Score by “1” in our repeat loop.</p>	 <p>The image shows a Scratch script for a mouse character. It starts with a 'when green flag clicked' event block. This is followed by a 'go to x: 190 y: 148' block. Then, a 'set Score to 0' block. A 'repeat until' loop follows, with the condition 'touching Cat?'. Inside the loop, there are four blocks: 'change Score by 1', 'point towards mouse-pointer', 'move 20 steps', and 'next costume'.</p>

Once completed we can add control to our game by adding three backdrops to the stage: “Game Start”, “Game Play”, and “Game Over”.

3 Cat and Mouse Game Control


Create three backdrops for the stage as shown, add text and colour. You need to call each backdrop: “Game Start”, “Game Play”, and “Game Over”. Game Start is for Player Instruction and in our example the player instruction would be “Press Spacebar to Play”. Game Play is where the Cat and Mouse game happens. Game Over is where we tell the player the game is finished.

3.1 Backdrops for the stage

*Scratch Tip - Easier to use Vector Graphics when making digital artwork in Scratch.
Look at the bottom right hand corner and click on “Convert to Vector Mode”*

Game Start	Game Play	Game Over
		

3.2 Code for the Stage



Steps	Code
<p>So when Green Flag is clicked need to change the Backdrop to “Game Start”.</p> <p>Hide the variable Score and check if “Spacebar” key is pressed. Once pressed we use a broadcast message called: “Game Play”.</p> <p>When the stage receives the message “Game Play”, switch the backdrop to “Game Play”.</p> <p>When the stage receives the message “Game Over”, switch the backdrop to “Game Over”</p>	

3.3 Code for the Cat and Mouse

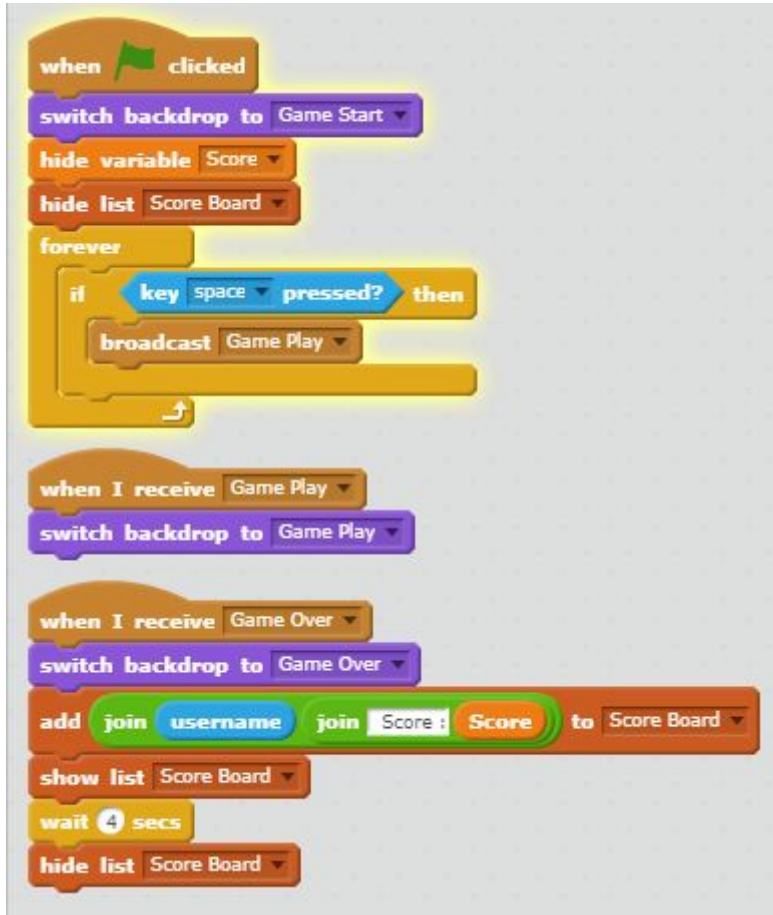
When Green Flag is clicked hide both the Cat and Mouse sprites.

Reuse your earlier code for the Cat and the Mouse with the command “When I receive “Game Play””

Add in an extra line for both sprites to “Hide”, when the broadcast message is received: “Game Over”.

Cat Code	Mouse Code
 <p>The Cat code consists of the following blocks:</p> <ul style="list-style-type: none">when green flag clicked: hidewhen I receive Game Play: show, go to x: 0 y: 0, repeat until touching Mouse: point towards Mouse, move 5 steps, next costumeplay sound meowsay Got You! for 2 secsbroadcast Game Overwhen I receive Game Over: hide	 <p>The Mouse code consists of the following blocks:</p> <ul style="list-style-type: none">when green flag clicked: hidewhen I receive Game Play: show, go to x: 190 y: 148, set Score to 0, repeat until touching Cat: change Score by 1, point towards mouse-pointer, move 20 steps, next costumewhen I receive Game Over: hide

4 Cat and Mouse Game with a Scoreboard

Steps	Code for the Stage
<p>Create a list called “Score Board”.</p> <p>Hide this list at the start.</p> <p>When the game is over add to the list the username and the score. You will have to use the Join “operator” in the Green Operators block twice to have the right text displayed.</p> <p>Then show the list.</p> <p>Use the wait command to wait for “4” seconds and then hide the list.</p>	 <p>The code for the stage is as follows:</p> <ul style="list-style-type: none"> when clicked <ul style="list-style-type: none"> switch backdrop to Game Start hide variable Score hide list Score Board forever loop: <ul style="list-style-type: none"> if key space pressed? then <ul style="list-style-type: none"> broadcast Game Play when I receive Game Play <ul style="list-style-type: none"> switch backdrop to Game Play when I receive Game Over <ul style="list-style-type: none"> switch backdrop to Game Over add join username join Score : Score to Score Board show list Score Board wait 4 secs hide list Score Board

This code will display a Scoreboard with the name of a player and a score.



When you have finished this exercise - can you find a way to empty the list ?

5 Scratch Examples

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[Cat and Mouse Scoring](#)

[Cat and Mouse Game Control](#)

[Cat and Mouse “Scoreboard”](#)