

## Smooth Criminal

We're going to build a game called *Smooth Criminal*. The idea behind the game is to find the criminal cat among all the cats on the stage. Every time you click on a cat that **isn't** the criminal, though, a random cat gets **MURDERED!**

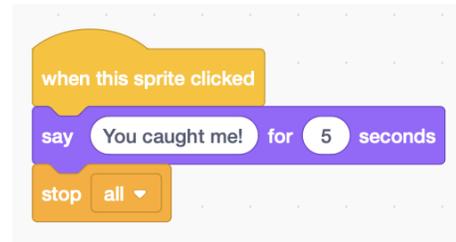
You win if you can find the criminal cat before she murders all the innocent cats.

### Making A Murderer

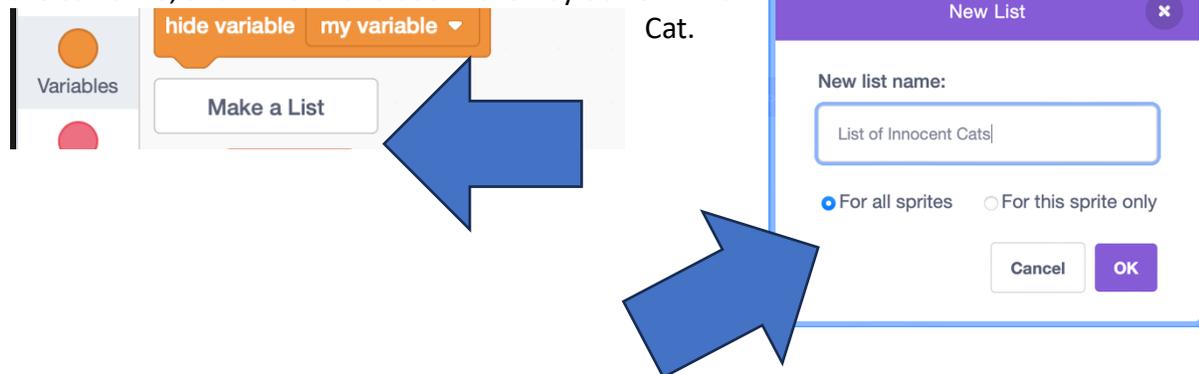


We start by making our murderer cat. It will look just like the rest of our cats, but will have special code attached to it.

The easiest thing to take care of is what happens when we click on our criminal cat. We will make it say "You caught me!" and then we will stop the game.

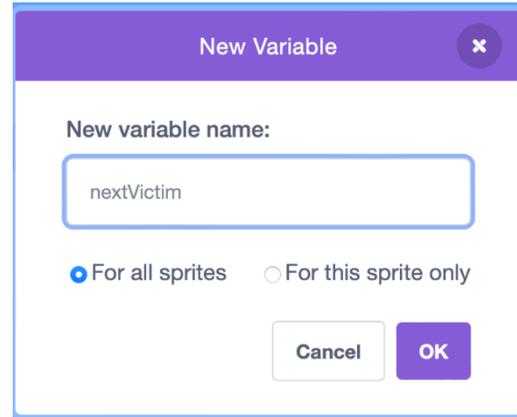


Next, we have to do some pre-planning. We are going to use a **list** to store which of our citizens are still alive, and which have been felled by our Criminal Cat.



This will store a label for each of our innocent cats; we will return to this list in a bit.

Next, what we want to do is make a variable called nextVictim. This variable will help our Criminal Cat choose who to murder next.

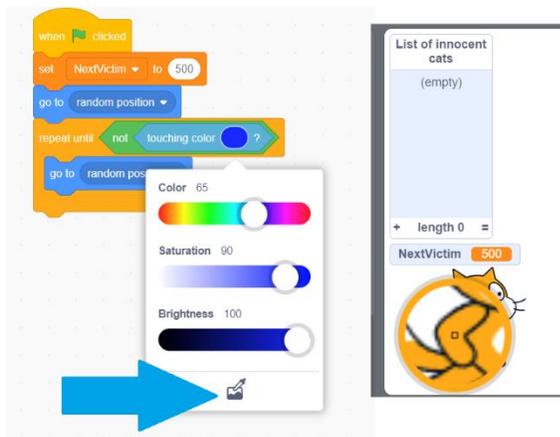
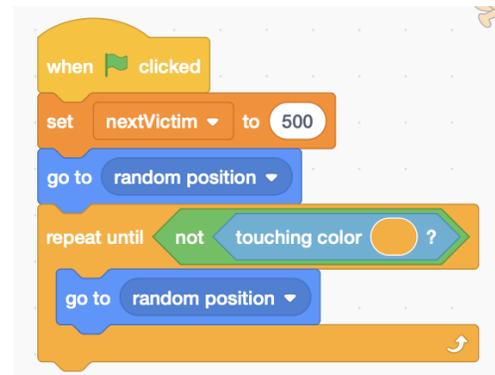


Our criminal will choose randomly based on how many cats we start with. We will start with 10 innocent cats.

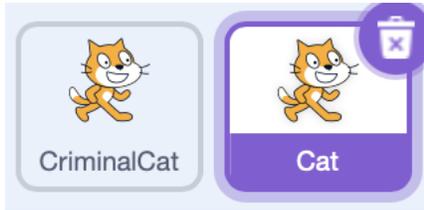


Don't worry about message1 yet. We will broadcast the message later. For now, just know that this will only be executed when we click on a cat that is **not** the criminal cat.

The last piece of code we need to put on our Criminal Cat is some code to reset our game and allow our Criminal Cat to hide in a random position. We use the colour  because this is the colour of the Scratch Cat, and we do not want our cats to overlap.



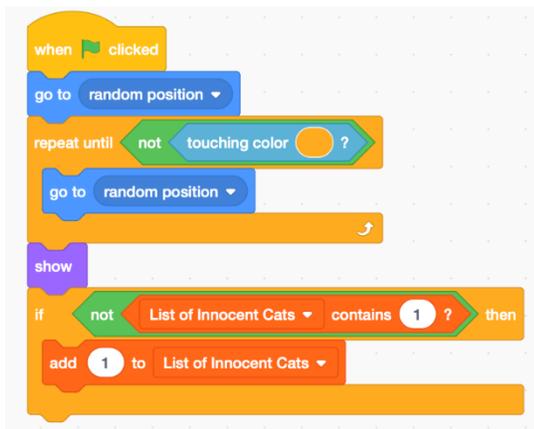
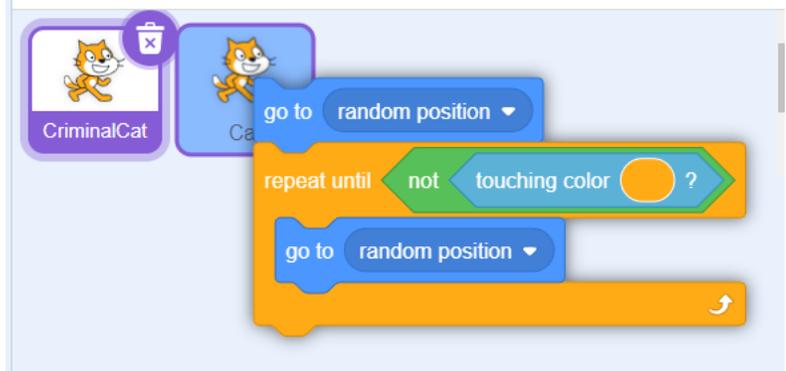
To get the  colour, click *touching color* so that the colour bar shows up, then click the eye dropper. Then click on the cat to get the colour.



## Our First Innocent Cat

Create a new cat. It should look exactly like the criminal cat, but it will have different code attached to it because it will act differently.

First, we want each of our cats to start in a different position each time we start the game with the green flag. We can copy this code from the Criminal Cat by dragging it from CriminalCat onto Cat.

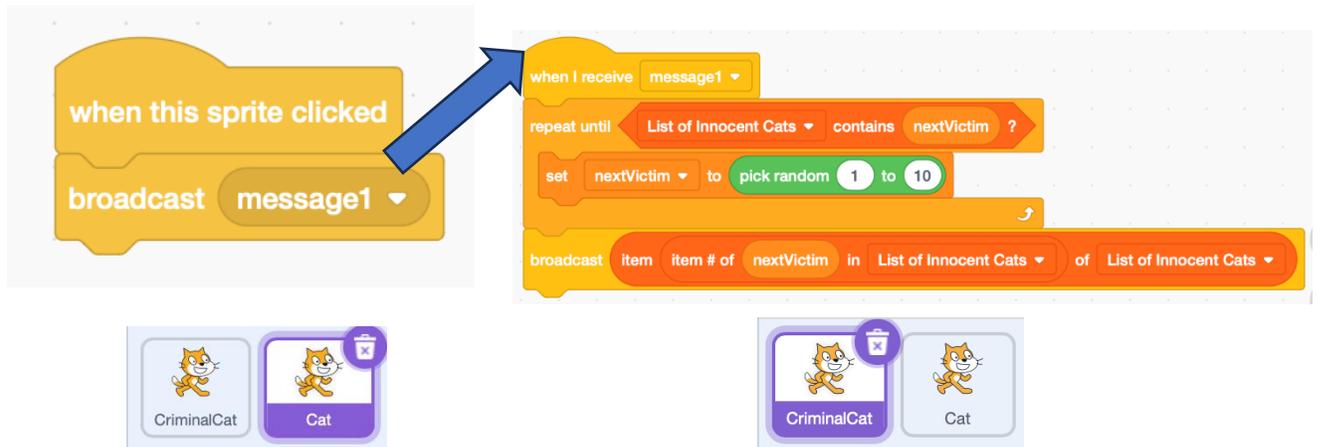


But also, we need to make sure the innocent cat is **shown** by default, and that they are added to the list of Innocent Cats so that we can track them.

Our cats are labeled by numbers, because it is easy to generate random numbers. This code is putting the cat in a random position and then adding its label (1) to the list of innocent cats if it isn't already there.

Next, we know that when we click on an Innocent Cat, the Criminal Cat should have the opportunity to kill a cat at random. We already have the code to allow the Criminal Cat to choose a victim, we just need to **broadcast a message** so that the code executes.

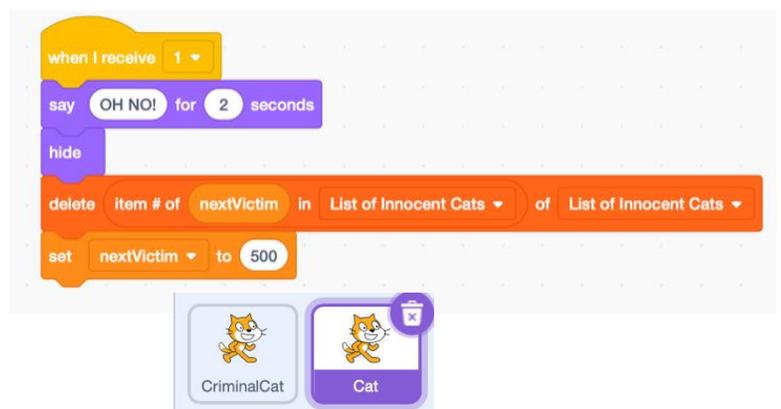
You'll notice that the last block of code on the Criminal Cat ends with broadcasting ANOTHER message. This is because while this code tells the Criminal Cat who to kill, it doesn't tell the other cat to actually die. We need to be explicit and very detailed when coding.



The code on the left (with Cat highlighted) goes on the Cat. The code on the right (with CriminalCat highlighted) we already put on CriminalCat – don't put it again!

We need to add some behaviour to our first innocent cat for when it receives the signal that it has been the one chosen for **murder**.

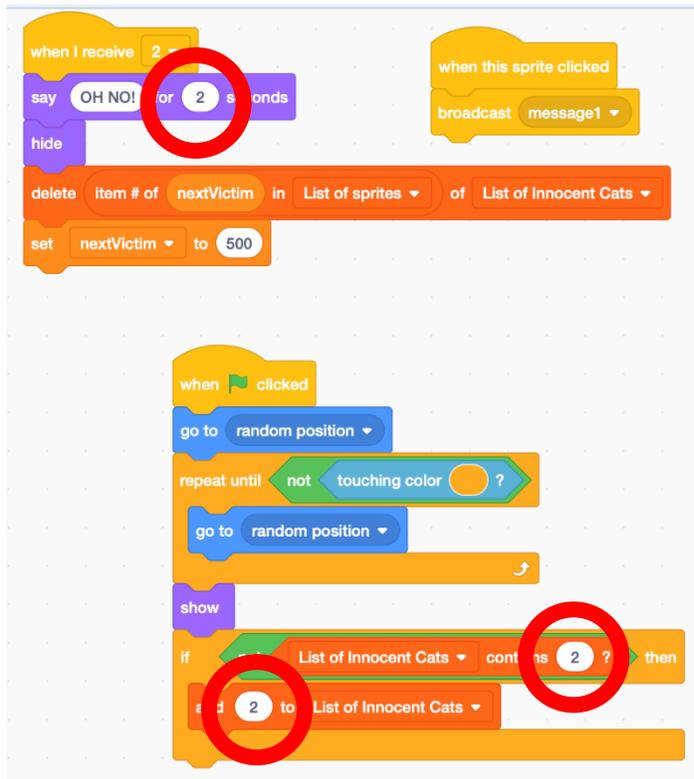
Notice that this particular cat's label was 1, so the message it receives is 1. **Make sure you set this correctly to the number 1.**



This code hides the innocent cat from view (because it's dead), and deletes it from our list so that we don't try to murder the same cat twice.

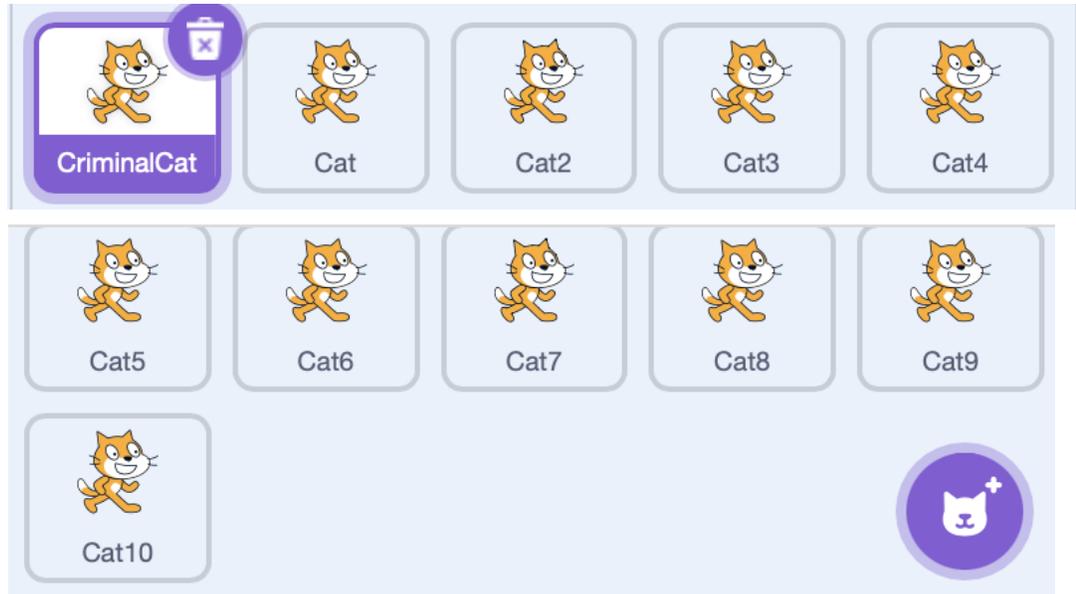
The game is now fun if there is only one Criminal and one Innocent Cat, so let's add more Innocent cats. They are more or less duplicates of our first innocent cat, but we need to change some numbers.

Our second Innocent Cat will start as a duplicate of our first one.



On Cat 2, we have to change its label, and the message it receives. We replace the 1 in each read circle with a 2. Note we will need to create a new message to do this.

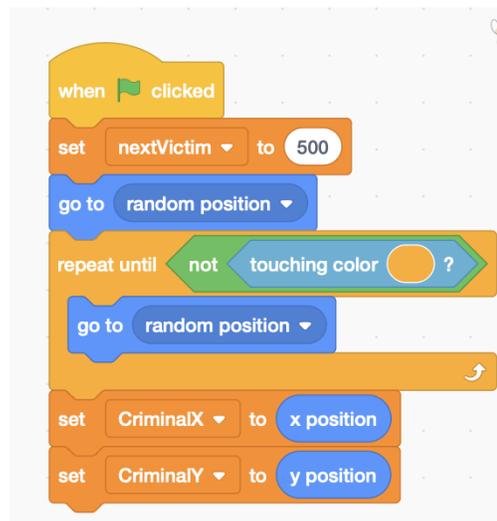
Do this **8 more times** to get a total of **10** Innocent Cats.



We can also add special characters to make our game more interesting.

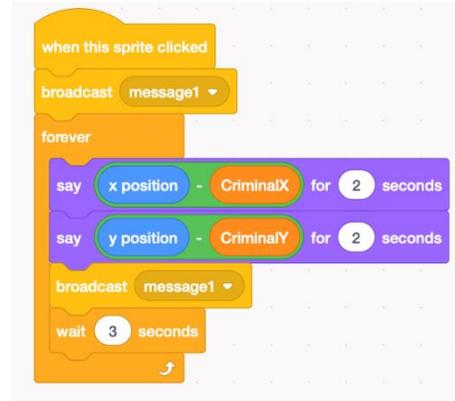
Make another clone of an Innocent Cat and give her a blue policewoman's uniform. Make sure to switch her labels and message to 11, since she is our eleventh cat.

In order to properly code our policewoman, we should first create two new variables CriminalX and CriminalY and modify our Criminal Cat code like this:



When we click on our policewoman, we want the following to happen:

- 1) She says how far away she is from the criminal repeatedly.
- 2) Once the police are alerted, the cats will start dying every 3 seconds until we catch the criminal!



### Challenge:

- 1) Can you make the cats wander around?
- 2) Can you make the police update their distance from the criminal as they're moving?
- 3) Can you make a doctor character that can revive cats, but only if you haven't clicked the police yet?