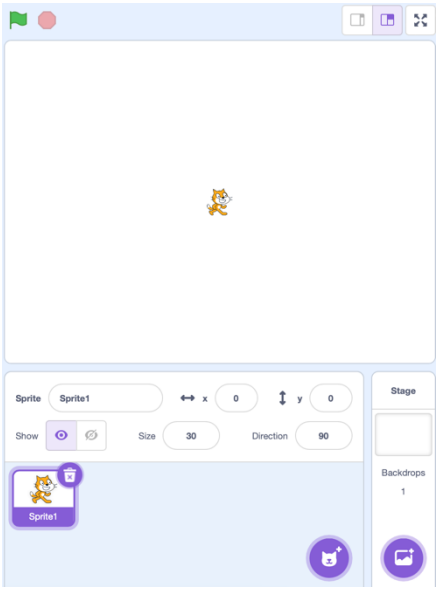
Let's write a Scratch program that shows us what happens if a vampire were to exist in the world.

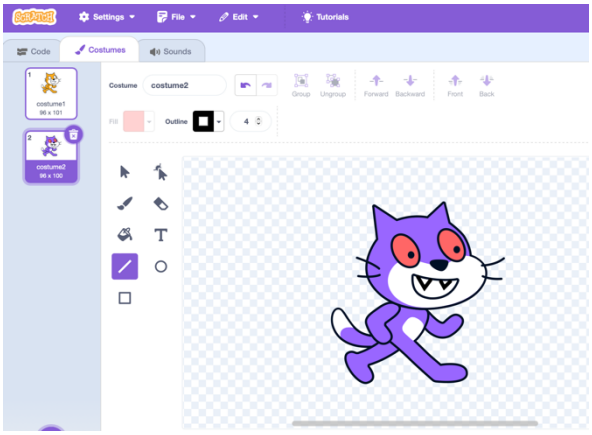
First, we need to make a bunch of "regulars" who are not vampires. We'll do this by making one regular, and then duplicating it.



Our first regular will be a cat. Let's change the **size** of the cat to 30 so it's nice and small and we can fit *so many* cats on the screen.

Now, while the cat will start regular, every cat will have the capacity to turn into a vampire, so we need to make a new "vampire" costume for our cat.

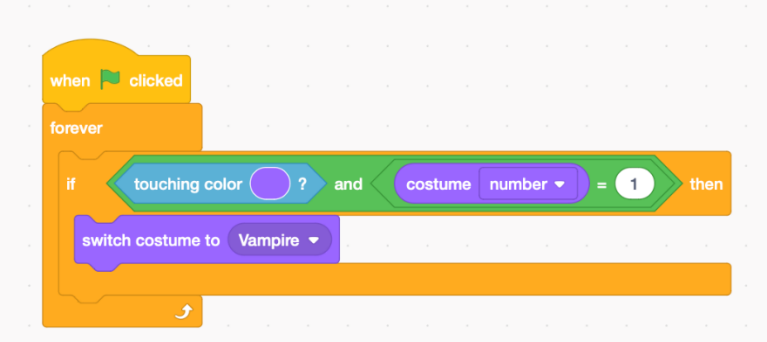
In my example, vampires are purple, with red eyes, and they have vampire teeth.



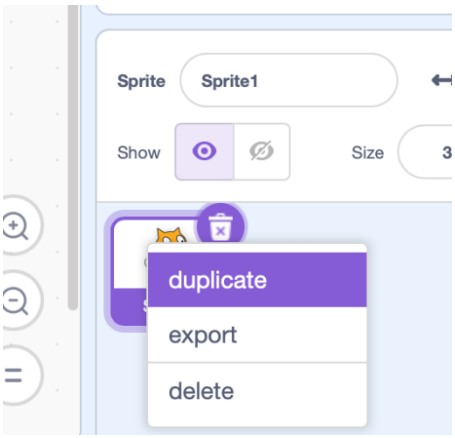
Back to the code tab, we want our cats to walk around our space, just like people tend to walk around during the day. We can do that with the the "glide to random position" block.

We also want the cat to continuously be checking to see if it had touched a vampire. We need a second green flag block on our cat with the code in the picture to the right.

Once a regular cat touches a vampire cat, it also becomes a vampire.



Now it's simply a matter of **duplicating** our cat to create a lot of cats! You can name them if you like. Make sure to move your cats around so they're not starting in the exact same spot.



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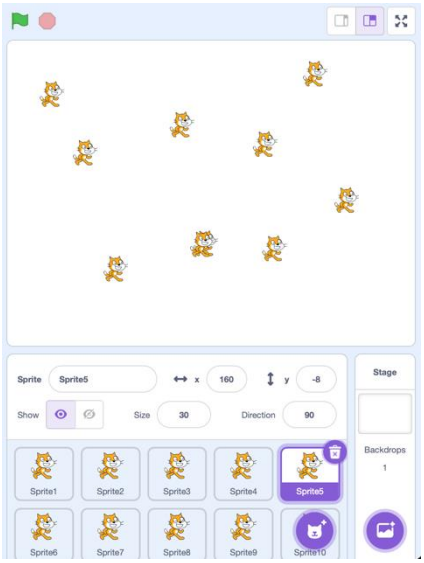
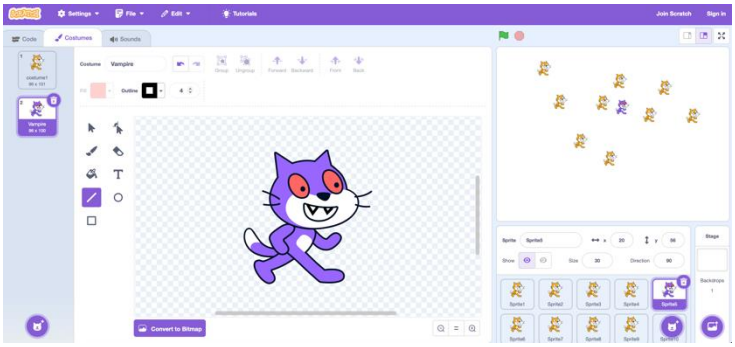
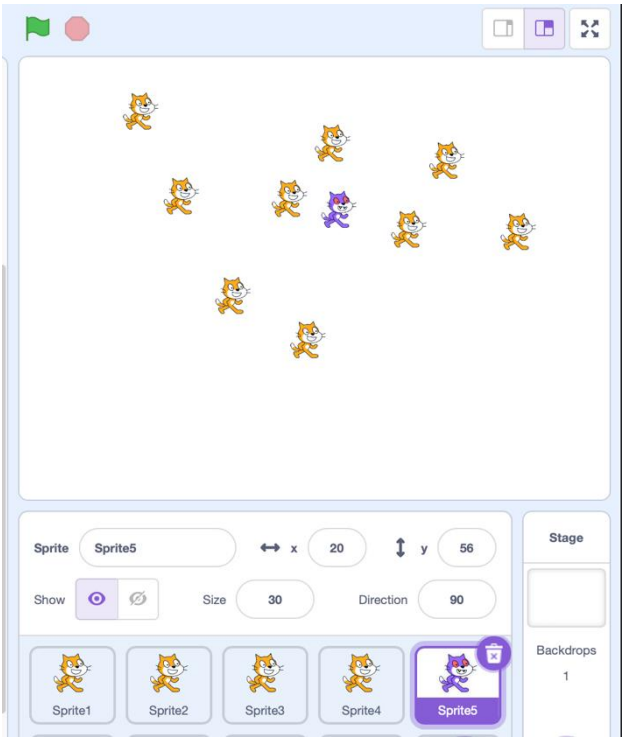


We can start with 10 cats to test and make sure everything is working.

If we were to hit the green flag now, we would only see our cats moving around. That's because we have no vampires that can make new vampires.

What we have to do is set one of our ten cats to start as a vampire.

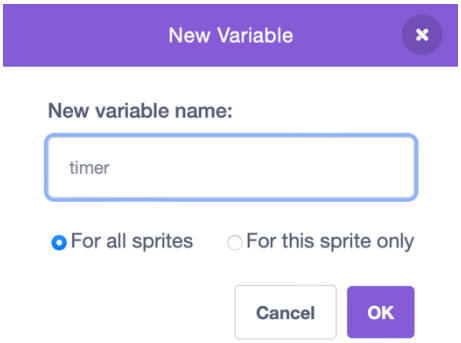




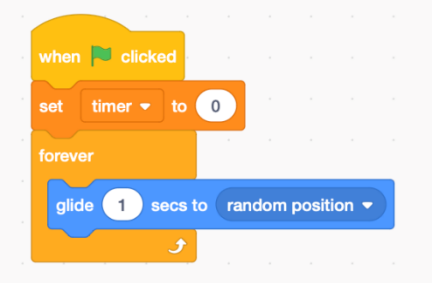
Now when we run it, we see that if we start with even just one vampire cat, eventually all our cats become vampires!

To reset, we have to set the costume to all our regular cats back to costume1. You do this by clicking on the sprite in the box below the screen and then clicking the costume tab.

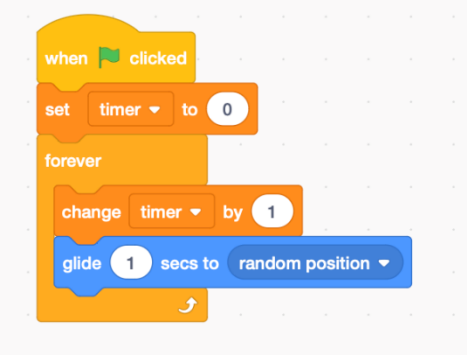
What if we want to know how long it takes for everyone to become a vampire?



We can create a variable called timer to keep track of how much time passes.

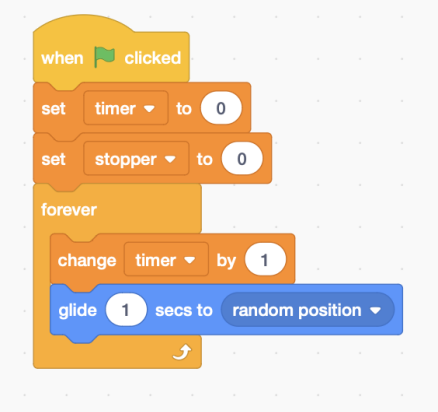


And we want to **modify** our movement block **only on cat number 1** to make sure the timer always starts at 0.

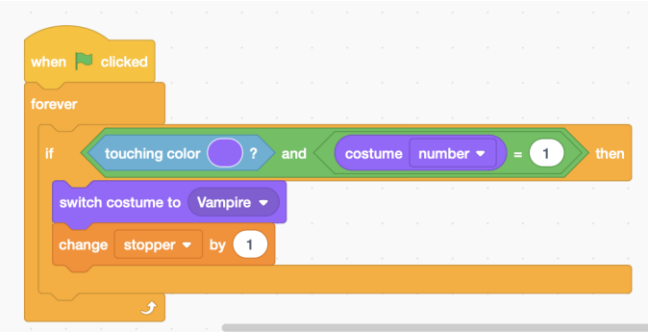


Then we want to increase the timer by 1 every time the cats move. Again, we **only want to do this to sprite #1.**

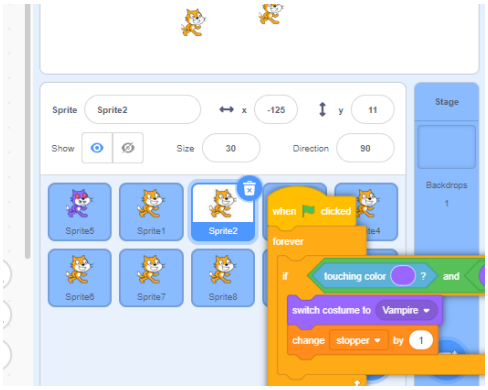
Now, we also want to create a variable called stopper. When this variable is equal to the number of cats on the screen, then we should stop everything. We will start this variable at 1. So we will modify the code **only on cat 1** to be:



Then on **every cat** we will modify the change code to be

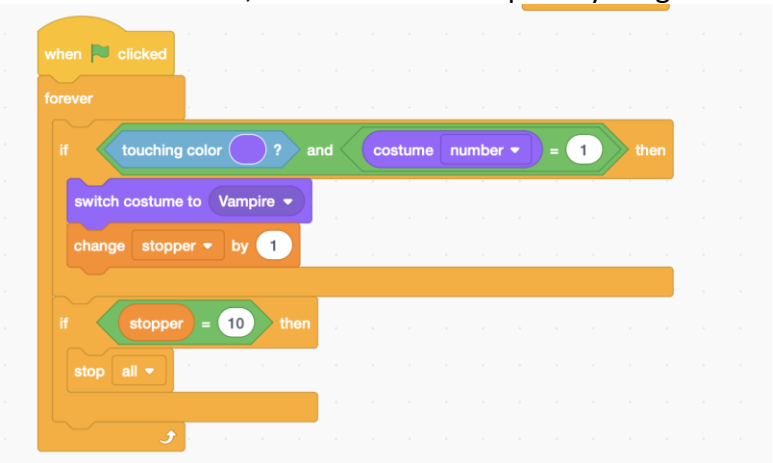


Remember to do this for **every cat.**



You can either modify the code on each cat **or** modify it on one then drag the code onto the other cat, then delete the old code.

Finally, on our first cat, we want to add a statement that says if our stopper variable is equal to the number of cats, then we should stop everything. We should only add this code to **cat 1.**



Now we can figure out how long until everyone turns into a vampire!

What happens if you add more cats? If we add double the cats, does it take double the time to turn everyone into a vampire? How many cats can you add before Scratch stops working?