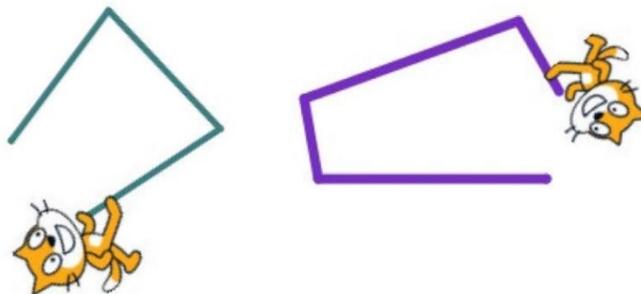
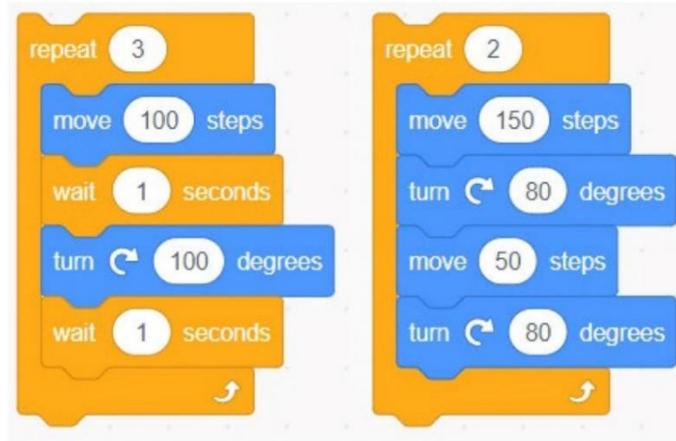


# Making Shapes

## Using a Block-Coding Program

Which of the images below did each set of block code create?  
How do you know?



How are the code sequences alike? How are they different?

What do you think *move*, *turn*, *repeat*, and *point in direction* might mean?

Notice the colour coding that is used to organize blocks according to function: blue indicates Motion blocks; orange indicates Control blocks, and dark green indicates Pen. Note that the code above is missing some important blocks for the sprite to draw the shapes.

## Making Shapes (cont'd)

### Using a Block-Coding Program

In the program you looked at as a class, a character called a “sprite” (in this case, Cat) is trying to draw a rectangle and a square.

You are going to investigate how you might edit the “code” to help Cat walk over these shapes.

Be sure to add the **Pen Extensions** before you begin.

Go to: <http://scratch.mit.edu>

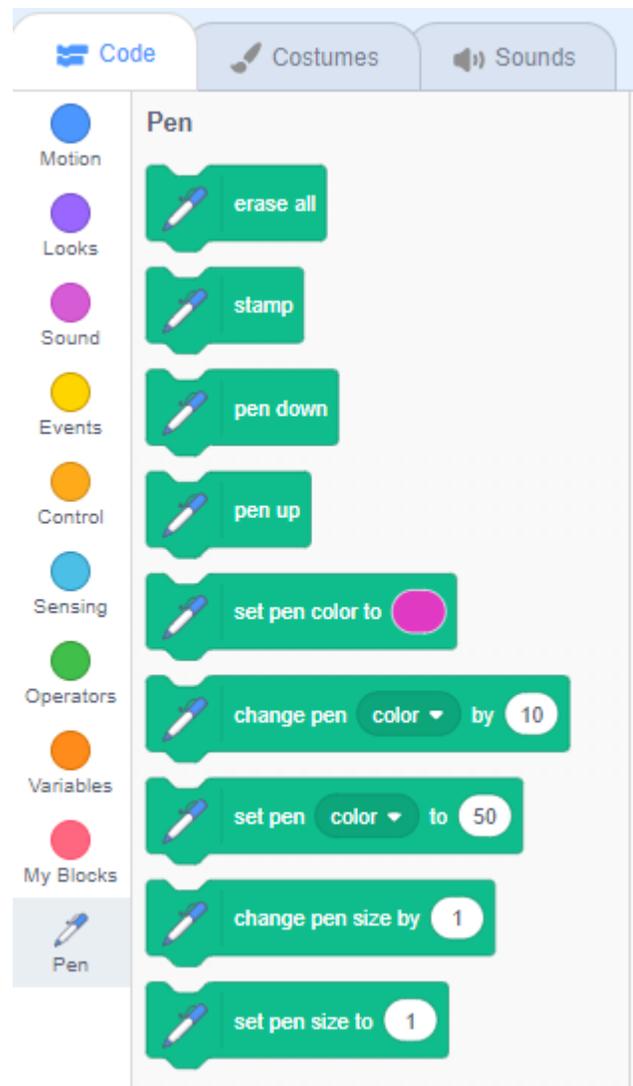
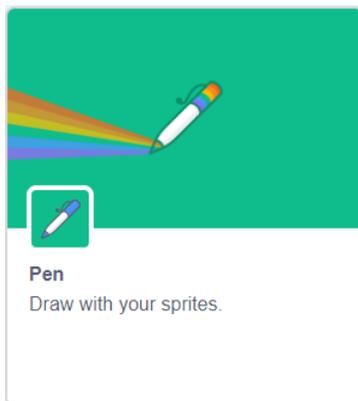
Log in, if your teacher would like you to.

Click **Create** to add a new project and name it.



Click the **Add Extension** icon at the bottom left.

Click the **Pen**. Draw with your sprites icon.

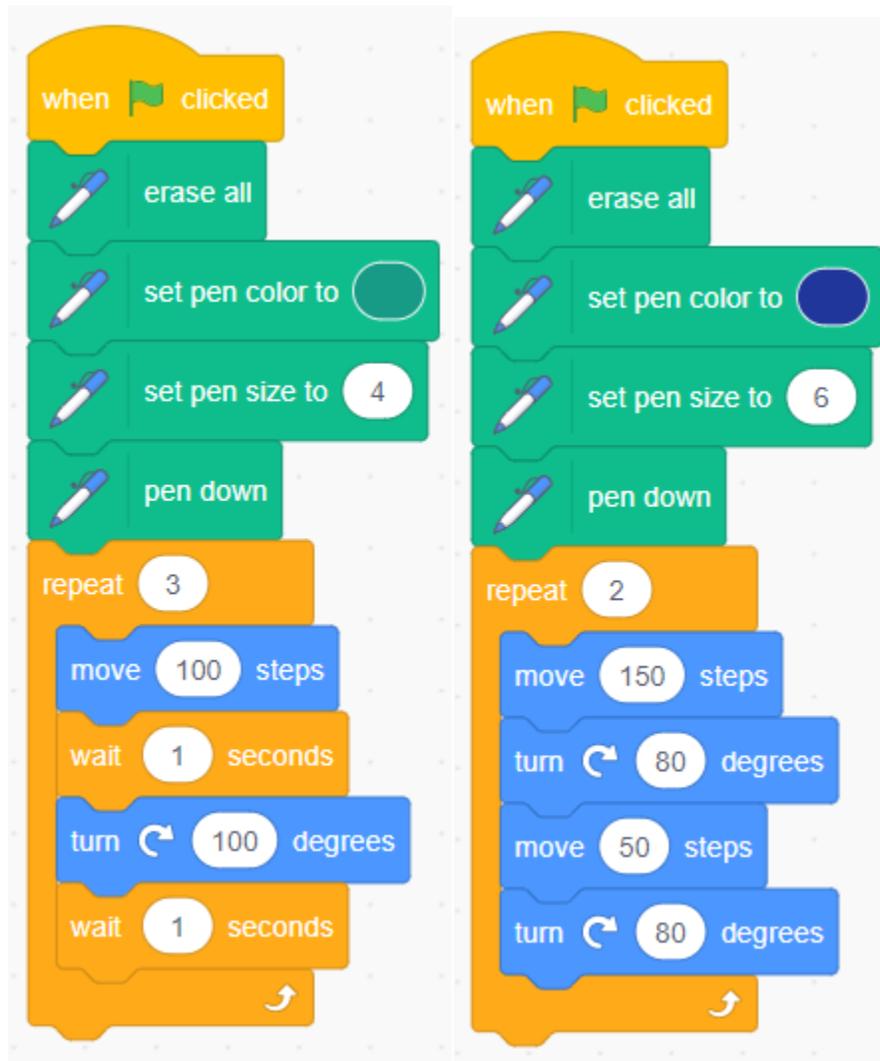


You will now see extra blocks for drawing with the pen.

## Making Shapes (cont'd)

### Using a Block-Coding Program

You will see the same code again.  
This time they have the necessary pen commands.

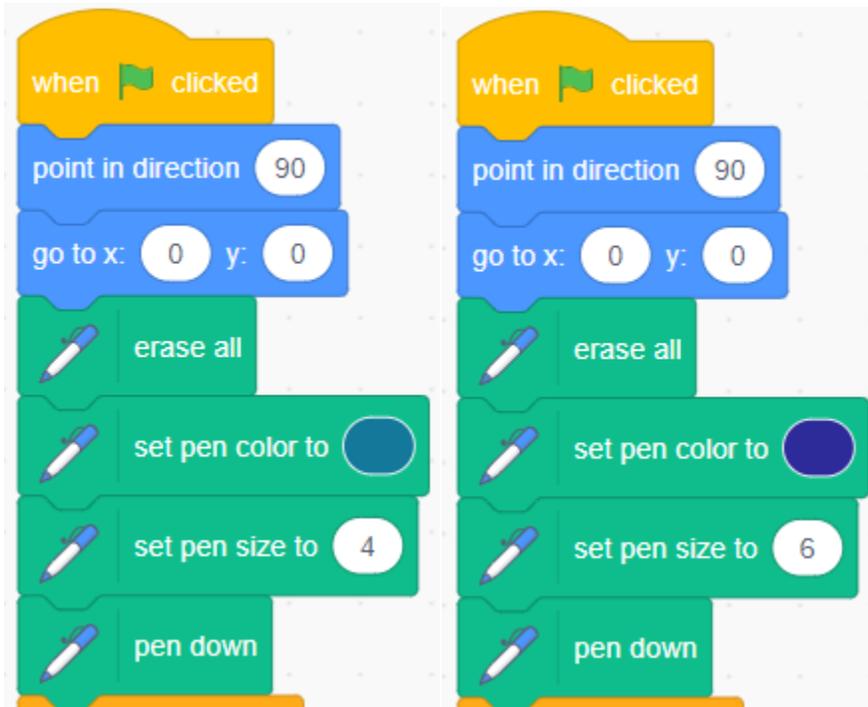


Why do you think all of the beginning code is important?  
What does each block do?

## Making Shapes (cont'd)

### Using a Block-Coding Program

You may want to add the following motion blocks to ensure that the sprite will begin in the right direction and at the centre of the stage each time.



## Making Shapes (cont'd)

### Using a Block-Coding Program

#### Challenge A: Code Cat to draw a square.

Work with your partner.

Start with a blank project or modify the project provided.

1. Use a blank project page to make your own.

- Create a new project (if necessary).
- Add in the **Pen Extensions** (as above), if you haven't already.
- Use the above code image to find the blocks you will need.

OR

2. Modify this existing project:

<https://scratch.mit.edu/projects/479303643/>

- Click **See Inside** to alter the code



or, if you've logged into Scratch, click **Remix** to get your own copy of this project,



- Change some of the numbers, then see how your changes impact the outcome (what Cat draws).
- Talk about what you're changing and why.  
Change just one thing at a time!
- You can always go back to the original link and start again.

## Making Shapes (cont'd)

### Using a Block-Coding Program

#### Challenge B: Code Cat to draw a rectangle.

Work with your partner.

Start with a blank project or go to the link provided.

1. Use a blank project page to make your own.
  - Create a new project (if necessary).
  - Add in the **Pen Extensions** (as above), if you haven't already.
  - Use the above code image to find the blocks you will need.

OR

2. Modify this existing project:

<https://scratch.mit.edu/projects/550915078/>

- Click **See Inside** to alter the code



or click **Remix** to get your own copy of this project.



- Change some of the numbers, then see how your changes impact the outcome (what Cat draws).
- Talk about what you're changing and why.  
Change just one thing at a time!

## Making Shapes (cont'd)

### Using a Block-Coding Program

#### Self-check in

What have you learned about block coding so far?

Did you get stuck? If so, what did you do?

Did you turn to your classmates for help? If so, how did they help?

What are you doing to help the learning of others?

This is “hard fun.” What do you think we mean by “hard fun”?

What other activities do you do that are “hard fun”?