

Lesson 3.7: Fun Art with Squares

Objectives

In this lesson students will:

- ❖ Solidify their understanding of the use of new blocks, loops, conditionals, and initialization code
- ❖ Learn how to draw a square programmatically
- ❖ Experience taking an existing project and modifying it to develop a working project

Agenda

- | | |
|---------------------------------|---------|
| 1. Fun Art with Squares | 10 mins |
| 2. Student Activity: Exercise 1 | 15 mins |
| 3. Student Activity: Exercise 2 | 15 mins |
| 4. Wrap up and Reflections | 10 mins |

Preparation

- Computers with internet connection
- Print Student activity worksheet (one per student or one per student pair)

Resources & Links

- Link for the starter project:
<https://scratch.mit.edu/projects/271427495>
- Link to the solution project:
<https://scratch.mit.edu/projects/324474459>

1. Fun Art with Squares

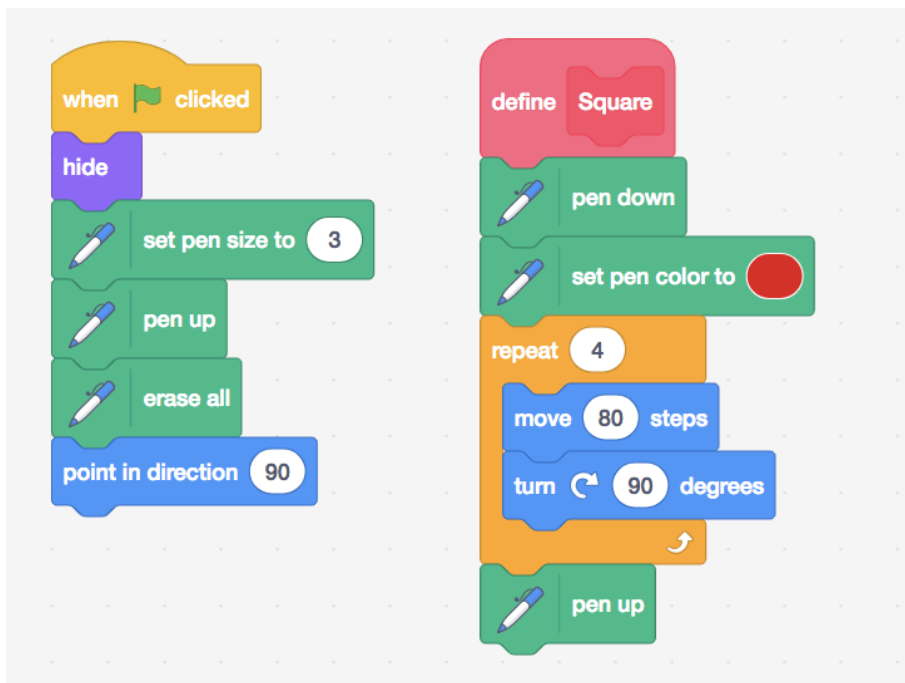


In this lesson students have a chance to review prior learnings from their art projects while exploring new challenges.

Display your screen and engage students in your demonstration and instruction of the drawing a square exploration:

Review the code below with the class pointing out the various programming constructs learned such as loops, new blocks (procedures), initialization code (the code following the *when green flag* clicked).

Walk through the code and prompt students to state what some of the sections of code do.



2. Student Activity: Fun Art with Squares, Exercise 1.



Distribute the student activity worksheet and explain the activity for exercise 1. After 10-15 minutes, review the solution with students (see solution project).

3. Student Activity: Fun Art with Squares, Exercise 2.



Explain the activity for exercise 2.

After 10-15 minutes, review the solution with students (see solution project).

4. Wrap up and Reflections

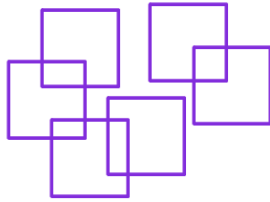
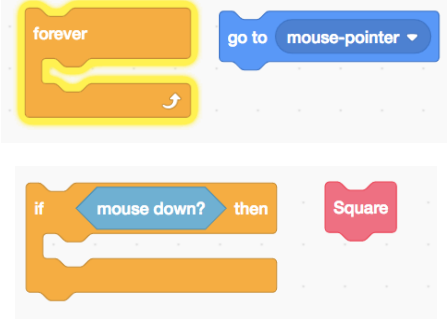


Reflection Points:


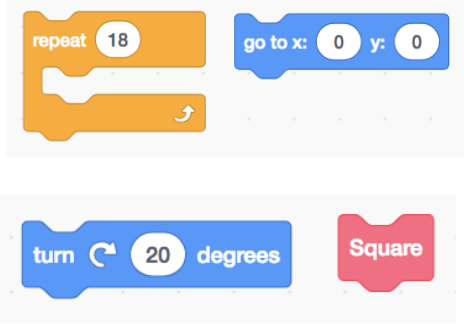
- What did you like about this project?
- What was challenging about the activity?
- What is a loop?
- Why is it useful to have a block that draws the square?

Student Activity Worksheet: Fun Art with Squares

Exercise 1: Drawing Squares Where the Mouse is

What to do:	Using/Details:
<p>Remix and save using your project name</p>	<p>271427495</p>
<p>Use sprite Exercise 1 to draw a square wherever your mouse is clicked</p>	
<p>Snap these blocks together to draw the square. Add them to the When green flag clicked script.</p> <p>Test your code often until it works.</p>	
<p>When the C key is pressed, clear the stage.</p>	
<p>Experiment</p>	<ul style="list-style-type: none"> ➤ Changing the pen width and change the square colors ➤ Changing the size of the square

Exercise 2: Drawing Squares in a Spiral

What to do:	Using/Details:
<p>Use the sprite called <i>Exercise 2</i> to create this cool drawing</p>	
<p>Draw many squares separated by turning a small number of degrees.</p> <p>Snap these blocks together and add them to the When green flag clicked script.</p> <p>Test your code often until it works.</p>	
<p>When the C key is pressed, clear the stage.</p>	
<p>Challenge</p>	<ul style="list-style-type: none"> ➤ Change the color as you are drawing the squares ➤ Change the size of the square