Lesson 3.4: The Dot - Part 1

Objectives

In this lesson, students will:
- ❖ Practice using the pen in Scratch
- ❖ Experience building a program by experimenting and iterating
- ❖ Learn what code comments are and practice commenting their code

Agenda

1. The Story about the Dot	15 mins
2. Student Activity: Drawing a Dot	10 mins
3. Student Activity: Drawing Many Dots	15 mins
4. Wrap Up and Reflections	10 mins

Preparation

- ❏ Computers with internet connection
- ❏ Become familiar with the starter project and the solution code.

Resources & Links

- ❏ Starter project: https://scratch.mit.edu/projects/259904406/

1. The Story about The Dot

📹 Let us listen to the story about *The Dot* by Peter H. Reynolds

https://tinyurl.com/y5nf39c2

A BCS Production with Raphael and Aemilia's Dad

👥💬 **Display your screen and engage** students in a demonstration and instruction:

- Explain to students that they will draw dots using Scratch.

- Walk students through the creation of a new sprite to draw the dot: For this project the Octopus is our drawer, so we delete the cat sprite and create the Octopus sprite. So that the octopus does not cover up the dot, we shrink the octopus' size.

- Review the following starter code with the class and explain what it does (only the code for now, the comment explanation follows):
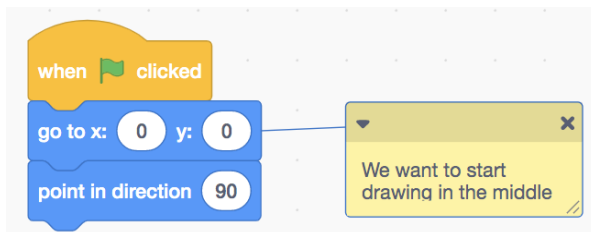

Commenting our Code:

👥💬 **Prompt** students as to what the yellow box might be. It would be helpful to have a volunteer read the content out loud.

Comments in code help us remember why we did something in the code or to explain a piece of code that is not obvious. Comments also help others understand our code when they might look at it or need to change the code in the future. Therefore, comments should explain things rather than repeat what the code does.
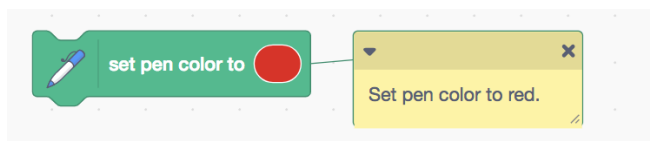
For example: Is this comment useful? Not really because it just repeats what the code does. The code itself is obvious.

However, you could add a comment explaining why you chose the color red if it is important for the project.

Demonstrate how to create a comment to students (right click on the block to be commented and choose "Add Comment").

2. Student Activity: Drawing a Dot

Distribute the activity worksheet to students and explain the activity.

Solution: Review the solution if necessary.
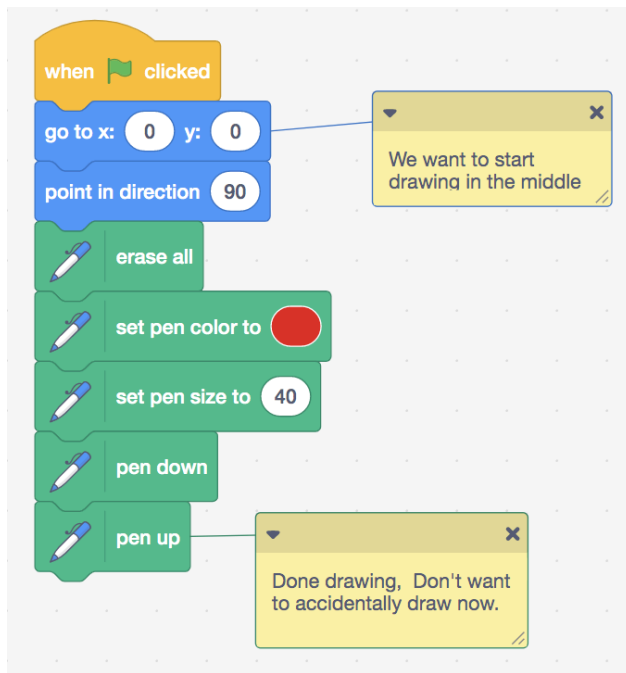
3. Student Activity: Drawing Many Dots

Instructions to give to students:

1. Using the same project, add code to draw many dots. Make sure you don't draw dots on top of each other.
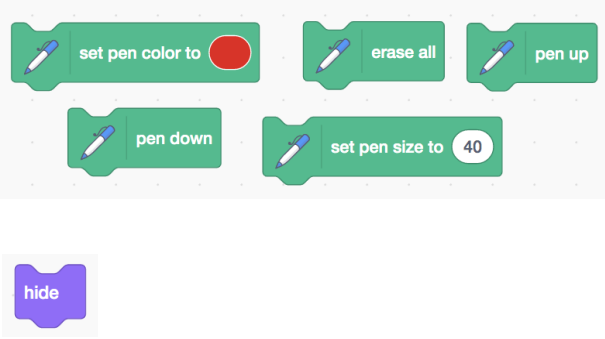2. Explore drawing dots of **different colors** and **different sizes.**

4. Wrap Up and Reflections

> **Reflection Points:**
>
> - Why is the ***erase all*** *block* necessary? What happens if you don't have it? (Answer: To clear the stage from prior drawings)
>
> - What happens when you move and the pen is down?
>   (Answer: Everytime the sprite moves, it will draw its path)
>
> - What is the purpose of adding comments to code?
>   (Answer: To explain what a section of code does for others to understand or for oneself when one has not looked at the code in a long time)
>
> - Were you able to draw different color and size dots?

Student Activity: Drawing Dots

What to do:	Using/Details:
Remix and **save**	259904406
Explore Snap the blocks to the existing script until you draw a dot. Hint: Can you hide the octopus to see the dot better	set pen color to ⬤ erase all pen up pen down set pen size to 40 hide
Comment	Add a comment to one of the blocks to explain its purpose