

## Lesson 3.6: Flowers

### Objectives

In this lesson, students will:

- ❖ Learn about costumes and the stamp instruction in Scratch
- ❖ Learn about random numbers and practice using them in Scratch
- ❖ Explore nested loops and creating composite objects by combining smaller parts

### Agenda

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|--|---------|
| 1. Exploring Costumes and Stamp                | 10 mins |
| 2. Creating Flowers by Drawing Multiple Petals | 10 mins |
| 3. Exploring Random Numbers                    | 5 mins  |
| 4. Student Activity                            | 20 mins |
| 5. Wrap Up and Reflections                     | 5 mins  |
| 6. Extension (Optional)                        |         |

### Preparation

- Computers connected to the internet
- Student activity worksheet printouts ( one per student pair)

### Resources & Links

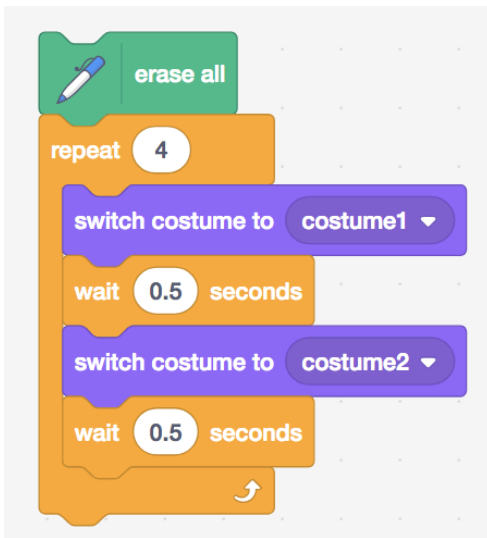
- Starter Project:  
<https://scratch.mit.edu/projects/261111785/>.

## 1. Exploring Costumes and Stamp



**Display your screen and engage** students in your demonstration and instruction of exploring costumes in Scratch:

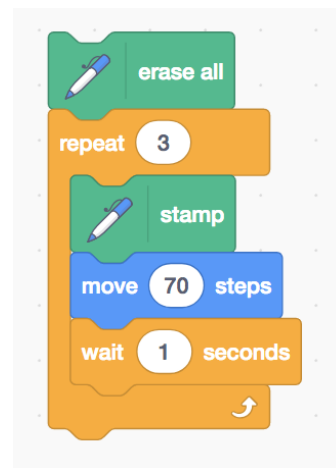
- Open Scratch and create a new project. Show the two costumes for the cat and explain that the sprite can switch between the 2 costumes. Many sprites have multiple costumes. Optionally, show Abby who has many costumes.



Next explain the code to the left line by line and run it by clicking on it to show what happens. It looks like the cat is walking by switching between the 2 costumes. The code is available by remixing :

<https://scratch.mit.edu/projects/261117263/>

- The **stamp** instruction simply makes an exact copy of the sprite. Explain and run the following code to demonstrate how it works.

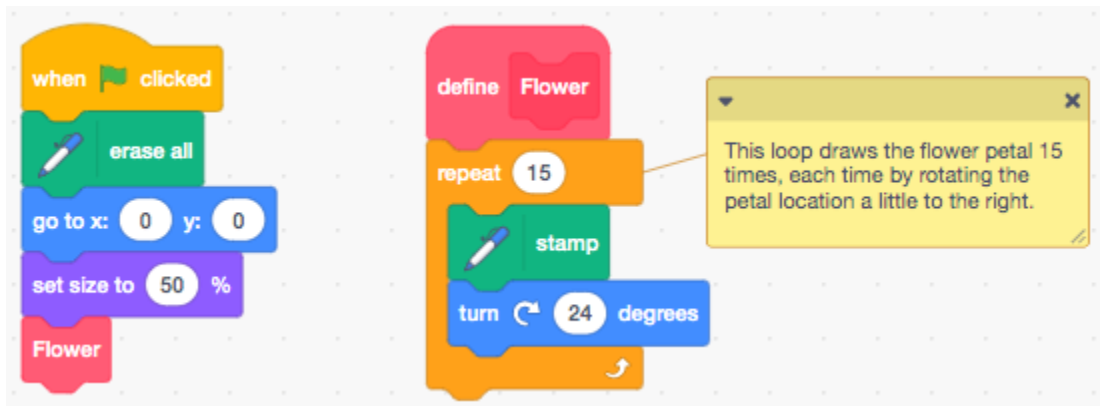


## 2. Creating Flowers by Drawing Multiple Petals



**Show** and **demo** the following code and explain it instruction by instruction. We learned about new blocks when we drew a dot. Since we eventually want to draw many flowers, we add the code to draw one flower to a new block.

The code is available by remixing: <https://scratch.mit.edu/projects/261111785/>. Run it to show the flower.



The set size to 50% determines the size of the petal, in this case the petal.

Point out that it always draws the same flower in the same place. Show students the various costumes of the Petal sprite.

**Prompt** students for ideas of how to draw different flowers using different petals and at different locations.

## 3. Student Activity: Draw 10 Flowers at Random Locations

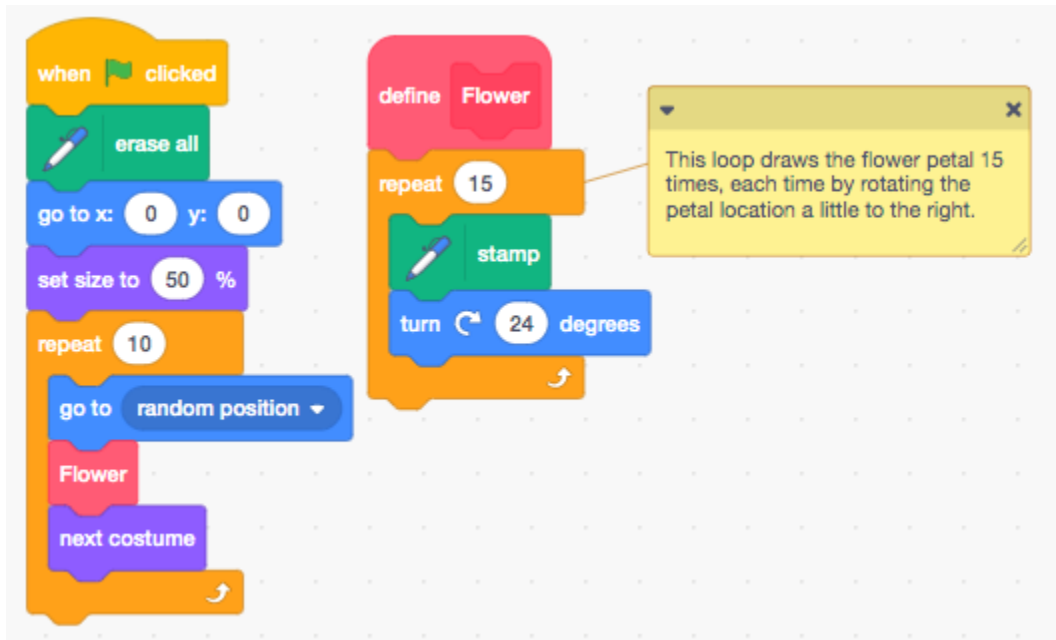


The objective of this activity is for students to explore adding the additional 3 blocks to draw 10 flowers in random locations on the stage. This is a good opportunity for students to work in pairs and practice taking on the roles of driver and navigator. Students may need help being reminded to switch roles. Distribute the Activity worksheet.

Instructions to give to students:

1. Remix the project and save it with a new name.
2. Run the project to observe a flower being drawn.
3. Explore adding the 3 instructions in the code area to the existing program until you are able to draw 10 flowers in random locations.

**Solution:**




**4. Extension: Student Activity: Random Size at Random Locations**



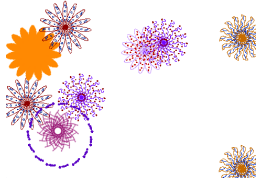
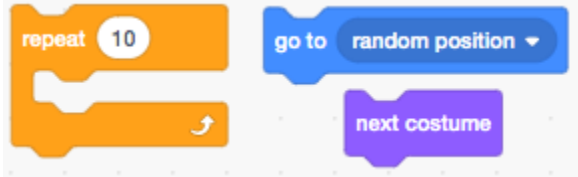
Assign this activity If time permits or for more advanced students.

**5. Wrap Up and Reflections**


Review the Code with Students and use the following reflection points for a class discussion.

 <b>Reflection Points:</b>
<ul style="list-style-type: none"> <li>• What did you like about this project?</li> <li>• Were you able to draw 10 flowers?</li> <li>• What was difficult about the activity?</li> <li>• What is a random number?</li> <li>• What is it like being the driver versus the navigator on your team?</li> </ul>

Student Activity: Draw 10 Flowers in Random Locations

What to do:	Using:
<p><b>Remix and save</b></p>	<p>261111785</p> 
<p><b>Run and Observe</b> the Project Run. What do you notice:</p>	<p>_____</p> <p>_____</p>
<p><b>Explore</b></p> <p>Add these blocks to the existing script to draw 10 flowers at random locations</p>	
<p><b>Explore:</b></p> <ul style="list-style-type: none"> <li>• Drawing more flowers</li> <li>• Flowers of different size</li> </ul>	

Student Activity: Random Size at Random Locations

What to do:	Using:
<p>Using your <b>Flowers</b> project, can you draw 10 flowers of random sizes using these 2 blocks?</p>	
<p><b>Experiment drawing:</b></p>	<ul style="list-style-type: none"> <li>● More flowers</li> <li>● Different backdrops</li> <li>● Different color effects</li> </ul>