

TITLE: **INTRODUCTION TO p5.js**

DEVELOPED BY: **Jerusha, Patti & Sarani**

**GENERAL OVERVIEW - UNIT DESCRIPTION**

APPLICABLE GRADE(S): **6th, 7th and 8th.**

TOTAL NUMBER OF LESSONS: **10 - 2-3 Weeks**

FORMAT: **Project Based Assessments & Summative and Formative Assessments**

**MOTIVATION FOR UNIT:**

Our decision to create this unit was to develop a series of p5.js introductory lessons that are ready to be implemented including a thematic culminating project of expressing ones culture.

**NY STATE COMPUTER SCIENCE STANDARDS:**

**Abstraction and Decomposition:**

7-8.CT.4 Write a program using functions or procedures whose names or other documentation convey their purpose within the larger task.

7-8.CT.5 Identify multiple similar concrete computations in a program, then create a function to generalize over them using parameters to accommodate their differences.

**Algorithms and Programming:**

7-8.CT.6 Design, compare and refine algorithms for a specific task or within a program.

7-8.CT.7 Design or remix a program that uses a variable to maintain the current value of a key piece of information.

7-8.CT.8 Develop or remix a program that effectively combines one or more control structures for creative expression or to solve a problem.

7-8.CT.9 Read and interpret code to predict the outcome of various programs that involve conditionals and repetition for the purposes of debugging.

**TOOLS USED:**

PROGRAMMING LANGUAGE: **p5.js**

PROGRAM ENVIRONMENT(S): **p5.js IDE** LINK: <https://editor.p5js.org>

ADDITIONAL MATERIALS: **See individual lessons**

**RESOURCES:**

Rubric:

<https://drive.google.com/file/d/1IMPVtwNHcEIQUMTBpnfV06O1dyQXV8D9/view?usp=sharing>

P5Graph

<https://drive.google.com/file/d/1ZRwv7PxCBkZcXK21mRIOGEJMbZh19Ron/view?usp=sharing>

Culture Project Planning Packet

<https://drive.google.com/file/d/1ro1pvdYHIK4bwFTDWH1aLwD2nE-utkmS/view?usp=sharing>

Reference Page

[https://drive.google.com/file/d/1\\_gXI\\_PfzrZelWk0g-aqvn74oL2p9WM4G/view?usp=sharing](https://drive.google.com/file/d/1_gXI_PfzrZelWk0g-aqvn74oL2p9WM4G/view?usp=sharing)

#### INSTRUCTIONAL LINKS:

- <https://p5js.org>
- <https://p5js.org/reference/>
- <https://p5js.org/examples/>
- <https://www.codecademy.com/learn/learn-p5js/modules/p5js-introduction-to-creative-coding/cheatsheet>
- <https://www.w3schools.com/tags/default.asp> (W3schools HTML Cheat Sheet)
- <https://www.w3schools.com/cssref/index.php> (W3schools CSS Cheat Sheet)
- <http://htmlcolorcodes.com> (for coloring for P5)

#### VIDEO LINKS:

- <https://www.youtube.com/watch?v=yPWkPOfnGsw&list=PLRqwx-V7Uu6Zy51Q-x9tMWlv9cueOFTFA&index=1&t=0s>
- <https://www.youtube.com/watch?v=MXs1cOlidWs>
- <https://www.youtube.com/watch?v=c3TeLi6Ns1E&list=PLRqwx-V7Uu6Zy51Q-x9tMWlv9cueOFTFA&index=4>
- <https://www.youtube.com/watch?v=rjJTF5-N7c&list=PLRqwx-V7Uu6Zy51Q-x9tMWlv9cueOFTFA&index=5>
- <https://www.youtube.com/watch?v=LuGsp5KeJMM&list=PLRqwx-V7Uu6Zy51Q-x9tMWlv9cueOFTFA&index=6>
- <https://www.youtube.com/watch?v=LuGsp5KeJMM&list=PLRqwx-V7Uu6Zy51Q-x9tMWlv9cueOFTFA&index=6>
- Youtube - The Coding Train Channel for Additional tutorials

### LESSON DETAILS:

ANTICIPATED DURATION: **2 Weeks**

#### LESSON TABLE OF CONTENTS:

**WEEK 1: Introduction to P5 Interface - What is P%**

[https://drive.google.com/file/d/1o-fy7MuzLR\\_5sF\\_my9K4CW5EZW2XjkKm/view?usp=sharing](https://drive.google.com/file/d/1o-fy7MuzLR_5sF_my9K4CW5EZW2XjkKm/view?usp=sharing) (Lesson)

[https://drive.google.com/file/d/1CILvaa4HdAQfOzYJH5T\\_xo6Xo8QGUIBG/view?usp=sharing](https://drive.google.com/file/d/1CILvaa4HdAQfOzYJH5T_xo6Xo8QGUIBG/view?usp=sharing) (Slide Deck)

**WEEK 2: Creating With Shapes in the P5 Editor -Using the Graph**

[https://drive.google.com/file/d/1Q4\\_U-BsCfFWQ5l6EG6uWa\\_1PCroYzlYV/view?usp=sharing](https://drive.google.com/file/d/1Q4_U-BsCfFWQ5l6EG6uWa_1PCroYzlYV/view?usp=sharing) (Lesson)

<https://drive.google.com/file/d/1gC2aLxqKyPrYhwnoS-STo5nF5dzojBxk/view?usp=sharing> (Slide Deck)

**WEEK 3: Creating with Additional Shapes**

<https://drive.google.com/file/d/12QbDDfeXE37RHqFTNK-tPer38zDNopFu/view?usp=s>  
[haring](#) (Lesson)

[https://drive.google.com/file/d/1X-Nc21u\\_GBA\\_EwU0uNzDyg9XgClixpsS/view?usp=s](https://drive.google.com/file/d/1X-Nc21u_GBA_EwU0uNzDyg9XgClixpsS/view?usp=s)  
[haring](#) (Slide Deck)

WEEK 4: Introduction to Creating with Digital Colors

<https://drive.google.com/file/d/1D5oz9EjiSMkIPvOY57EoXSYsWPt6lhae/view?usp=sharing>  
(Lesson)

<https://drive.google.com/file/d/1AqjWhXkFbG504WZBDGvDGCJO2gFGqBzl/view?usp=sharing>  
(Slide Deck)

**WEEK 5:** Introduction to Shape Layering with Color

<https://drive.google.com/file/d/19PVmbOQGpeBo4-b2boLBtOQ9c0MvF-mF/view?usp=sharing>  
(Lesson)

<https://drive.google.com/file/d/1RcMP0Sy4Wc0ux6WTPY0jT67znRIHyORe/view?usp=sharing> (Slide Deck)

WEEK 6: P5 Summative Quiz

<https://drive.google.com/file/d/1Sdm6jPXen9VpoGczrYBw-7oe8k1hugaH/view?usp=sharing>  
(Lesson Plan for Assessment)

<https://drive.google.com/file/d/10XgGQ4kLQUoemgdF4FP0GfQDpJQCoITr/view?usp=sharing>  
(Quiz)

<https://drive.google.com/file/d/1P-Hwr-hJB3fE6eP0TjrJhpbQIFbOx23p/view?usp=sharing>  
(Answer Key)

Introduction to **WEEK 7: Review of HTML & CSS**

[https://drive.google.com/file/d/18z\\_hEINNbjgOa83pmWjiiAEc9E6FHTRw/view?usp=sharing](https://drive.google.com/file/d/18z_hEINNbjgOa83pmWjiiAEc9E6FHTRw/view?usp=sharing)  
(HTML Review Lesson)

[https://drive.google.com/file/d/12scQcO8EMRWSVCEW3\\_7iqvnHnhLRQBAj/view?usp=sharing](https://drive.google.com/file/d/12scQcO8EMRWSVCEW3_7iqvnHnhLRQBAj/view?usp=sharing)  
(Slide Deck)

WEEK 8: CSS Review, Integration & Culminating Project

[https://drive.google.com/file/d/1zdx1o0gFzNZQXD98U\\_Rx7Rju4Y/view?usp=sharing](https://drive.google.com/file/d/1zdx1o0gFzNZQXD98U_Rx7Rju4Y/view?usp=sharing)  
(CSS Review Lesson)

<https://drive.google.com/file/d/184B9Jcn1zgw5tyhXhOL7EDV69FpukWdK/view?usp=sharing>  
(Slide Deck)

**WEEK 9: Project Lab Day 1: Work Pd for Project Recap Expectations, Tricks, Tools and Reminders**

[https://drive.google.com/file/d/1XIW\\_1lbV8K3rrpvKPX6KaCcsCWhATOm-/view?usp=sharing](https://drive.google.com/file/d/1XIW_1lbV8K3rrpvKPX6KaCcsCWhATOm-/view?usp=sharing) (Final Project Lesson)

<https://drive.google.com/file/d/15D64qpnhUjt0IJ5HJusMW2jRxsWftz7U/view?usp=sharing> (Final Project Slide Deck)

WEEK 10: Project Lab Day 2: Complete Project and Peer to Peer Support/Feedback & Gallery Walk

<https://drive.google.com/file/d/1S5zh5td7zvloB1CDMhR1ZP60nD62FbiE/view?usp=sharing> (Slide Deck)

<https://drive.google.com/file/d/15D64qpnhUjt0IJ5HJusMW2jRxsWftz7U/view?usp=sharing> (Lesson on Reflection and Peer Feedback)

## **ASSESSMENTS**

SUMMATIVE: Unit One Quiz

<https://drive.google.com/file/d/1Sdm6jPXen9VpoGczrYBw-7oe8k1hugaH/view?usp=sharing> (Lesson Plan for Assessment)

<https://drive.google.com/file/d/10XgGQ4kLQUoemgdF4FP0GfQDpJQCoITr/view?usp=sharing> (Quiz)

<https://drive.google.com/file/d/1P-Hwr-hJB3fE6eP0TjrJhpbQIFbOx23p/view?usp=sharing> (Answer Key)

FORMATIVE: Culture Project

Culture Project Planning Packet

<https://drive.google.com/file/d/1ro1pvdYHIK4bwFTDWH1aLwD2nE-utkmS/view?usp=sharing>