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Unit of Study: P5 Unit One	Lesson 4
Topic: Creating Digital Colors	CSDFS: Computational Thinking: Algorithms and Programming: 7-8.CT.10 Document the iterative design process of developing a computational artifact that incorporates user feedback and preferences. 7-8.CT.6 Design, compare and refine algorithms for a specific task or within a program. CCLS: RST 6-8:4 - Determine the meaning of symbols, key terms, and other domain specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics. Blueprint for the Arts: Digital Media
Skill: Identifying how to use RGB for Grayscale and Digital Colors to fill shapes	Academic Vocabulary: Function parameter argument canvas JavaScript Pixels Hue Saturation Brightness Transparency Alpha RGB
Warm Up: Think/Write/Pair/Share: Warm Up: How do we make colors transparent?	
Connection: (Review with Class) - We have been working in the P5 editor with JavaScript learning different shapes and grayscale colors. We are now going to learn about the different methods of creating color and filling in Shapes.	
Mini Lesson: How do we fill shapes in P5 with digital and grayscale color? We already know that colors range in the RGB scale from 0-255 from the background color already created in P5. What number signifies black? What color signifies white? Now we will look at colors for RGB. We need to know a little bit about color theory and the basic primary colors. If you notice RGB combinations can make different colors. For example, if you mix two paint colors of red and green, you will get yellow. If you mix red and blue you will get purple. If you mix red, green and blue, you will get white. There are different shades as we discussed from 0-255. When we use the code for color we use the word fill and then in the parenthesis we put the shades of	

RGB that we want. For example: fill(23, 45, 32); or if you just want red you could put fill(230, 0, 0) and similarly you could put the same in the Green or Blue field. You can also create a colored border around your shape using the word stroke() stroke is the color of the border that you want around your shape. You can also add an additional component to your RGB values that we call alpha. This makes the RGB colors transparent. The transparent value is called alpha and can range from 0-255

Quick Check: What can you create with the shapes you have already learned and how will color help emphasize your sketch?

Work period:

Task: With the link provided in Google Classroom for the P5 samples, use the directions provided to create an ellipse, a rectangle, and a triangle and fill them according to the directions using RGB values, use a transparency value, and use a colorMode value.

<https://editor.p5js.org/pelfers-truth/sketches/2rVeyc2eR>

Then create your own separate file with these three shapes and see what you can make using different variations of color. Try overlapping some shapes and using transparency as demonstrated on the slide show.

Assessments/Questions: Think of what you will be creating for your final project as we go through the rest of the unit that will demonstrate something about your and your culture. You might think of flags of your home country, sports, or anything else that you think you can create with what you have learned.

Share/Discuss: What did you create? Let's present a few examples. Any volunteers?

Closing/Exit Ticket:

- Share one new thing that you learned.
- What was challenging? Why?
- What elements would you add to your drawing if you had more time?

Note on grouping:

Students are seated next to a partner with differing ability so the more experienced student can work with the less experienced student. ELL students have similar language partners for additional translation help (if available)

Materials and Scaffolds used: P5 graph, Shapes Reference Sheet, Slide Deck for Lesson, P5 Editor
Coding Train: <https://www.youtube.com/watch?v=rjiJTF5-N7c&t=133s>

Additional details used for ELL's and SWD students

Modifications -English Language Learners	Modifications-Special Education/Support Group
<ul style="list-style-type: none"> • Working with partners • Using visuals/gesture • Total physical response • Rep of modeling • Vocabulary dictionary in the program 	<ul style="list-style-type: none"> • Working with partners • Using visuals/gesture • Total physical response • One/one modeling when needed • Vocabulary dictionary in the program