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Unit of Study: Introduction to JavaScript Unit 1	**Lesson 1 - What is P5 (JavaScript)**
Topic: P5 Interface	**CSDFS: Algorithms and Programming: 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** **CSTA K-12 (2017)** **IC- Impacts of Computing** **2-IC-20 Compare tradeoffs associated with computing technologies that affect people's everyday activities and career options**
Skill: Navigating the P5 Interface	**Academic Vocabulary:** **JavaScript** **Canvas** **Console**

Warm Up: Think/Write/Pair/Share: What do you think JavaScript is used for?

Connection: (Review with Class) - We have been learning about Web Development with HTML/CSS and now we will be adding an additional concept of JavaScript.

Mini Lesson: What is P5js (JavaScript)? P5 is a JavaScript library for developing creating coding projects and including them on a web page. A JavaScript library is a collection of prewritten code snippets that can used and reused in developing coding projects. You can create art projects, digital stories, animation projects, games, and much more. We will watch a brief video introduction to P5JS https://www.youtube.com/watch?v=feGdJFh02YQ&t=63s
We will open the P5 Editor at http://editor.p5js.org and sign in by clicking on sign in and then click on the google icon. You should already be signed into Google classroom with your NYCstudents accounts. This will automatically sign you in to P5. This is what it looks like when you log in:

```
1▼ function setup() {
2     createCanvas(400, 400);
3  }
4
5▼ function draw() {
6     background(220);
7  }
```
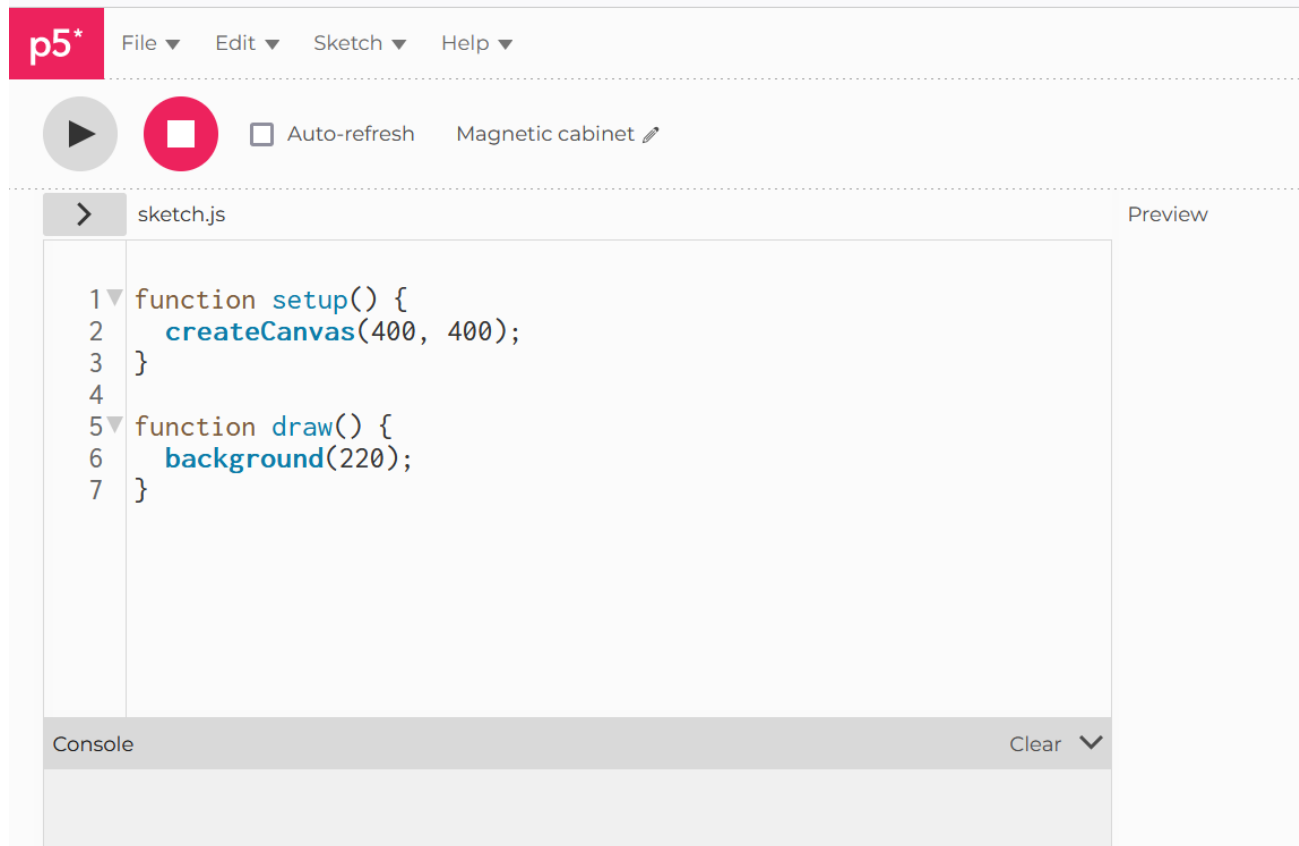
You will notice across the top, file, edit, sketch, help. Directly under that you will see a play(run) button that plays your program and a stop button that stops your program. There is also a small arrow that says sketch.js next to it. If you open that arrow up, it displays an index.html page and a style.css page which we will use later on when we get to our first big project. Then we have the space where there is already prewritten code which every program starts with. This is where you will write your code. The space under the coding space is the console where error messages are shown. The place to the right of the code is the canvas where your sketch that you code will be displayed.

P5 uses some basic punctuation that is needed and you should become familiar with:

(open parenthesis
) closed parenthesis
, comma
; semi colon
: colon
{ open curly brace
} closed curly brace

All functions use curly braces as shown in the starter code the program gives you. When you press play, what do you notice? (The canvas turns gray)
That is because in the draw function we asked that the background be (220) which is a shade of gray.
We will cover colors a little later in the unit.

Finally we also use // two forward slashes to create comments in our code. Programmers use these comments to track for changes, or to describe to them what they are doing in that specific area of code. They are good practice to use.

Two additional facts to know is that the P5 graph is different than the graph we use in Scratch. The 0, 0 coordinates are the upper left hand corner of the canvas. As you do to the right the canvas increases to 400 and as you do down the canvas the canvas increases to 400. We generally measure in increments of 20 on a graph we use, but for today you will try without the graph. Also, a rectangle is plotted by the x and y of the upper left hand corner of the square and an ellipse is plotted by its center point.

Quick Check: Why do you think it would be important to have comments in your code?

Work period:	Task One:
We will try using the P5 program to explore some basic shapes using the coding from the slide show and the reference table that can be found under the help menu.	Create an ellipse. The code for an ellipse is: ellipse(x, y, width, height); rect(x, y, width, height) See how many you can draw and what happens where you plot them.

Assessments/Questions: What did you find when you plotted your shapes? Were you successful in plotting your shapes where you wanted them? How do you know that you used the correct coordinates?

Share/Discuss Have students share their work on the smart board if time.

Closing/Exit Ticket: Question of the Day: Why do people create web pages?
Journal 3-2-1:

3 - What are three topics you might be interested in creating a website about?

2 - What are two reasons you think someone might visit a website that you create?

1 - What's one thing you're most interested in learning about creating websites?

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: Computer, Internet, web pages: http://classroom.google.com(blended learning site for directions and quick check) https://translate.google.com/ (for ELL students needing translation) Note: Pacing is student centered due to individual variation within the grouping.
http://editor.p5.js.org - P5 Interface
P5 video: https://www.youtube.com/watch?v=feGdJFh02YQ&t=63s
Coding Train https://www.youtube.com/watch?v=yPWkPOfnGsw

Additional details used for ELL's and SWD students

Modifications -English Language Learners	Modifications-Special Education/Support Group
● Working with partners ● Using visuals/gesture ● Total physical response ● Rep of modeling ● Vocabulary dictionary in the program	● Working with partners ● Using visuals/gesture ● Total physical response ● One/one modeling when needed ● Vocabulary dictionary in the program