**Lesson: JavaScript Objects**

SWBAT: Group variables as an object and use dot notation to print out individual properties.

This is an introductory lesson for high school students who are beginning to learn how to code using JavaScript. It builds on standard: 7-8.CT.7 Design or remix a program that uses a variable to maintain the current value of a key piece of information. The focus is on understanding that variables can be used to track the value of a concept in a program as it changes over time.

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| Time | Part |
| 5 min | Do Now: Think about your favorite book, movie, video game, etc. Write down information about three characters. Include the following: first name, last name, age, description. |
| 5 min  2 min  5 min  3 min  5 min | Mini-Lesson/Code-Along: Today we are going to create our own variables, update them and use changing values in our code. We will use the character information from the Do Now.  Open a new program and name it Objects.js. We are going to do a code-along activity. First watch what I do, and then when instructed, you will code in your own program. Give students a minute to create their program. Share the teacher’s screen to show the code.  Ask a student for their character information. We will start by declaring and initializing three variables with information about the character, example: firstName, lastName, and age. Review camel case for writing the variable name. Initialize the variables with the character’s information. Review the difference between a string and integer.  Question: *How can we print out the information about the character?*  Use a print statement or a console.log statement.  Instruct students to type in the variables with character information from one of their characters. Write and display two statements using the variables. Suggest they use concatenation to print out the information.  When we have a lot of information and variables, it can get a bit confusing. We can group our variables into an object to make it easier to keep track of our variables.  First declare a variable, such as “character1.” Then assign an object to that variable. Show the notation.   |  |  | | --- | --- | | Text  Description automatically generated | Ask students what they notice about the notation. How does it different from declaring a single variable?  We use curly brackets to contain the information. We use a colon instead of an equals sign. We use a comma to separate the properties. |   Question: *What do you think will happen when we print the object?* Use the console.log to print the object. All of the information in the object will be displayed. Give students time to type their character information as an object.  Sometimes we only want to use or display some of the information. We can use dot notation. Show dot notation to print out an individual property.  We can also use dot notation to change the value of the individual property. We can reassign the property: ex: character1.firstName = “Mad”. This new value will override any previous value. Instruct students to reassign one property and display it.  Show how we can create a second object using the same variable names. |
| 15 min | Activity:   1. Write new objects with information for the other two characters from the Do Now. Display several statements using dot notation with information about the different characters. 2. Look up information about players from various sports teams. Write an object for at least two different player with relevant stats. 3. Time Permitting: Students can write an object for an address (It doesn’t have to be their address) and print out the address or another person. |
| 5 min | Think-Pair-Share: Why is it helpful to use an object to store variables?  Have students write down an answer. Discuss with a partner. Then choose students to share their responses. |