

3.5 Project Coding Day 3

Summary

Students participate in an unplugged activity to understand functions and functions with variables. Students continue programming their pinball game in Scratch.

Learning Objectives

After this class, students will be able to:

- Identify why functions are used.
- Identify a function call, function definition, and function parameter (or variable).
- Use Scratch function blocks to simulate gravity acting on the movement of a sprite.

Materials

- Computers with internet access

Time

80 minutes

Preparation

Students will continue programming their main project for this unit in Scratch. The worksheet for this lesson builds upon the previous worksheet and assumes that students have saved their work from the previous coding day.

Procedure/Pacing

Unplugged Activity: Song as a Function

This activity will help students understand the purpose and use of functions and functions with parameters within code by comparing them to songs.

Vocabulary:

- Function: A piece of code that can be used repeatedly.
- Function call: Piece of code within the main program that initiates the use of a function.
- Function definition: Section of code that assigns the name of a function and the set of tasks the function will perform.
- Parameter: (Also referred to as a variable.) A value that is passed to a function to customize that function.

Use the lesson procedure for the unplugged activity at Code.org:

<https://code.org/curriculum/course4/13/Teacher>

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You may wish to use the presentation, 3.5 Songs as Functions, located on the website.

Have students complete their own song as a function (Assignment 3.5.1).

1. Help students get started with Scratch by accessing the Scratch website Scratch <http://scratch.mit.edu>. Once students have successfully reached the website, have them follow the instructions on Worksheet 3 to complete their programming for the day.
2. Once students have completed the worksheet, remind them to save their Scratch project where they will be able to access it to complete the next worksheet during next class period.
3. Give students instructions for how they should turn in their work so far.

In-Class Assignment

Assignment 3.5.1: Song as a Function

Assignment 3.5.2: Worksheet 3

Resources

- Scratch <http://scratch.mit.edu>
- Code.org 20 hour course <https://studio.code.org/s/20-hour>
- 3.6 Songs as Functions

Homework

Assignment 3.6: Code.org Activities: Functions with variables

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