Lesson Plan: Python Programming - Hawkins

Lesson should center student thinking, identify teacher strategies and have a clear purpose

Date	Lesson	Unit
03/17/2022	CMU 3.3.1: Helper Functions (CMU is the Carnegie Mellon University Computer Science Academy online Python Programming curriculum).	CMU Unit 3: Mouse Motion Events, Conditionals, and Helper Functions

Driving Question	Learning Target(s)	Standard(s)
What is a Helper Function? How do we create and use a Helper Function in Python? Why are Helper Functions used in Python programming?	I can identify, create, and use Helper Functions in Python.	(Program Environment) I can describe the characteristics of a specific programming language and use it within an IDE.

Agenda	Teacher is…	Description [Include instructional strategy]	Anticipated Student Needs & Support [student(s) - skill gap - support]	Assessment/CFU
Warm Up (5 min)	Taking attendance and doing 1st sweep	Log in to CMU CS Academy. Read Lesson 3.3.1 up to and including the definition of Helper Function. Turn and talk: What is a Helper Function? Why do you think we would use a helper function?	Identified students (see below) may have difficulty identifying drawStars as a Helper Function to drawMessage. Make sure to check in with these students while circulating to offer support as needed.	Students can explain why drawStars is a Helper Function to drawMessage. Students can make a connection to prior knowledge and accurately compare the relationship to another they previously knew/understood from another content area.
Mini Lesson/ Discovery Activity (15 min)	Doing 2nd and 3rd sweeps and then circulating/ assisting	CMU Lesson 3.3.1 Helper Functions: Students complete the lesson independently or with the help of the video posted in Google Classroom by the instructor (their choice).	Identified students (see below) may have difficulty completing the checkpoints independently or with the help of the posted video. Make sure to check in with these students while circulating to offer support as needed.	Lesson Checkpoints, CMU autograder, direct questioning (Why do you think that's right? How do you know? What's the next step? Etc.)

Practice/ Application (30 min)	Circulating/ assisting	Students will work through exercises 3.3.2	Any/all students may get stuck at various points in the Exercises. Monitor student progress while circulating and assist as needed (following “3 then me”: 1 re-read the directions and test cases for the exercise, 2 re-read the hints in the starter code, 3 ask a classmate)	CMU autograder, direct questioning (Why do you think that’s right? How do you know? What’s the next step? Etc.)
Wrap –Up/ Conclusion/ Reflection (5-10min)	Starting the discussion then listening as students lead the discussion	What is a Helper Function? How do we identify a Helper Function in a Python program? Why are Helper functions used in Python programs?	Allow students to lead discussion, but jump in and elicit participation from reluctant students (if some students are not actively participating in discussion and other students do not engage them).	Monitor responses and address any misconceptions that are not corrected by other students during the discussion.

Differentiation: CMU is a self-paced online Python Programming curriculum. Students may work straight from the online lessons and/or refer to instructor-created videos posted in Google Classroom demonstrating completion of the lessons with narration.

Students Identified for additional support:

GE: Binta, Daniel, IEP: Chris, Demmi, Brayan, Sebastian, Madi, Abdiel, Kim, Jake, MLL: Abdiel, Chris, Brayan