

Grades 9-12

Distance Learning Module 3: Week of: April 13 - April 17
Iteration and Using Objects - Python Turtle Lab and Project

Mathematics: Introduction to Computer Science Honors - *Modified [from Unit 5 Iteration and Computer Simulation](#)*

Targeted Goals from Stage 1: Desired Results

Content Knowledge: Iteration using while and for loops; what types of problems can be solved with iteration; how to instantiate objects and call methods on those instances; functional decomposition; more in-depth review of conditional logic, creating and using user-defined functions and iteration

Vocabulary: object, loop, for, while, turtle, conditional statement, function, parameter, method, iteration, if, elif, else

Skills: writing 'for' loops, writing 'while' loops, instantiating objects, problem solving, writing functions, passing parameters to functions and methods, testing, debugging

Expectation:

Description of Task (s):	Resources and Materials:	Daily Checks (Return to Google Classroom or snapshots from a cell phone)
Monday: This is a carryover from last week, due to the Good Friday holiday. Students will review Trimester 1 concepts associated with iterating with "for" loops. Students will complete any open practice items from last week, and remediate as needed.	Computer Science Trimester 1 Review Part 10 - Iteration Part B	Iteration practice lab problems (for loops)
Monday: Introduce the Python Turtle module with a	Zoom or Meet conference Turtle Commands handout	Introduction to Turtle lab (multi-day)

Description of Task (s):	Resources and Materials:	Daily Checks (Return to Google Classroom or snapshots from a cell phone)
live demonstration and lesson.		
<p>Tuesday: Students continue working on the Introduction to Turtle lab Provide guidance via live video call.</p>	<p>Zoom or Meet conference Turtle Commands handout</p> <p>YouTube video - Complete Python Turtle Graphics Overview!</p>	<p>Introduction to Turtle lab (multi-day)</p>
<p>Wednesday: Introduce the Turtle Flower programming assignment with a live video lesson. Students begin working on the Turtle Flower assignment.</p>	<p>Zoom or Meet conference Turtle Commands handout</p> <p>Starter code - turtleflower.py</p> <p>Helper code - icsutils.py</p>	<p>Turtle Flower Lab (multi-day)</p> <p>Video check-in</p>
<p>Thursday: Students continue working on the Turtle Flower assignment with live video support.</p>	<p>Zoom or Meet conference Turtle Commands handout</p> <p>Starter code - turtleflower.py</p> <p>Helper code - icsutils.py</p>	<p>Turtle Flower Lab (multi-day)</p> <p>Video check-in</p>
<p>Friday: Students continue working on the Turtle Flower assignment with live video support.</p>	<p>Zoom or Meet conference Turtle Commands handout</p> <p>Starter code - turtleflower.py</p> <p>Helper code - icsutils.py</p>	<p>Turtle Flower Lab (multi-day)</p> <p>Video check-in</p>

Week criteria for success (attach student checklists or rubrics):

By the end of this module, students should be able to create a Python Turtle program that utilizes iteration to achieve a desired outcome. Students will be able to complete the Turtle Lab and complete or nearly complete the Turtle Flower Lab, showing an increasing degree of proficiency working with loops, objects, functions, methods, and conditional logic.

Supportive resources and tutorials for the week (plans for re-teaching):

Think Python, 3rd Edition (free online Python book)

Coding Bat

Office hours

Python Programming Third Edition by John Zelle. This textbook provides additional examples and content, and is available for purchase from Amazon and other retailers.