



# Python with Robotics

## AP CSP Curriculum

### Create PT Prep Overview

Time Required: 1 ½ weeks

This unit covers supplementary lessons to prepare students for the Create Performance Task. The first four lessons give students experience in creating a practice program that meets the Create PT requirements. The next three lessons go over the Create PT submissions. Following this unit, students should spend the next 9 hours working on and completing the Create Performance Task.

### Unit Outline

#### Lesson: PT Practice (4 lessons)

These four lessons each have students create a practice PT program. Each program starts as a remix of a previous program, and goes through the steps of adding functionality to meet the Create PT requirements. The wrap-up questions for each lesson include writing prompts for the free response questions.

#### Lesson: PT Practice #5 (optional lesson)

This lesson is completely optional. It takes the same “WhatIf” program used in PT Practice 3 and shows another way to meet the Create PT requirements by using a matrix, or list of lists. If your students are interested in a list of lists, which is probably a new concept, you can assign the lesson. Otherwise skip it.

#### Lesson: Create PT Code PDF and Video

Students learn about the Create PT submissions they will upload to the Digital Portfolio. In this lesson they practice creating a PDF of their Python code and a video of the code running on a CodeBot.

#### Lesson: Create PT PPR Code Segments

Students learn about the Personal Project Reference (PPR) that they will submit to the Digital Portfolio. The PPR is printed for each student and used during the Free Response Portion of the AP Exam. Students practice creating image files from each of the four PT practice programs.

#### Lesson: Selecting a Create PT Project

The last lesson in the prep unit reviews the Create PT and then includes brainstorming activities for students to generate their own ideas for their Create Performance Task project.

### Assessment

A formal assessment is not planned for this unit. Students should be ready for the Create PT after the unit, and be ready to get started. Possible formative assessments for this unit include:

- Activity Guide for each lesson
- Four PT Practice programs, and a modification to one of the programs
- Three PDFs
- Two videos

### Materials / Preparation

- The assignments each have an activity guide that should be distributed and completed digitally. Prepare the assignments in the digital format that works best for your classroom.
- The slides for the lessons are downloadable as PowerPoint slides. Reformat into the digital format that works best for your classroom.
- Go through the lessons in advance so you are prepared to guide and help your students as needed.
- If you want the students to turn in the PDFs and videos, decide how they will submit the files.
- Make sure you have CodeBots, AA batteries and cables for the students. Two students can share a CodeBot and work in pairs, or you can have 1 to 1 CodeBots.