

AP CSP Suggested Pacing Guide – Drop-in Course

This drop-in course teaches students programming with Python and prepares them for the Create Performance Task. Follow this pacing guide to cover the concepts needed for the Create PT. Each lesson represents a 45-50 minute class period. However, some lessons may take longer. By the end of the course (8-9 weeks) students begin their Create PT and upload the required materials. The rest of the school year can then be spent on practicing the written responses, additional supplemental lessons, units from another course that teach the CSP Big Ideas, and more CodeBot missions and remixes.

1-3 days	If this drop-in course is the beginning of programming for students, you may want to start with some unplugged activities on algorithms. Suggested resources are listed →	Computer Science is Changing Everything video Algorithm lesson with drawings Algorithm lesson with LEGOs LEGO Maze Algorithms <ul style="list-style-type: none"> • Algorithms lesson plan / LEGO maze cards
Day	Unit 1 Mission or Lesson / Work to turn in	Resources
1	CodeBot Mission 1 <ul style="list-style-type: none"> • Mission 1 Assignment 	Mission 1 Assignment / Answers Mission 1 Lesson Plan Getting Started in CodeSpace slides
2	CodeBot Mission 2 <ul style="list-style-type: none"> • Mission 2 Assignment • LightsOn program 	Mission 2 Assignment / Answers Mission 2 Lesson Plan Mission 2 Review Kahoot!
3	CodeBot Mission 3 Objectives 1-6 <ul style="list-style-type: none"> • Mission 3 Obj 1-6 Assignment • SequenceLEDs program • BinaryLEDs program 	Mission 3 Obj 1-6 Assignment / Answers Mission 3 Obj 1-6 Lesson Plan Mission 3 Review Kahoot! Obj 1-6 Solution code: SequenceLEDs, BinaryLEDs
4	Binary Numbers lesson <ul style="list-style-type: none"> • Binary Numbers Activity Guide 	Binary Numbers slides Binary Numbers Activity Guide / Answers Binary Numbers Lesson Plan Manipulatives: Activity 2 Form / Flippy-do
5	CodeBot Mission 3 Objectives 7-9 <ul style="list-style-type: none"> • Mission 3 Obj 7-9 Assignment • MoveOut program • NavSquare program 	Mission 3 Obj 7-9 Assignment / Answers Mission 3 Obj 7-9 Lesson Plan Mission 3 Review Kahoot! Obj 7-9 Solution code: MoveOut, NavSquare
6	Defining Functions <ul style="list-style-type: none"> • Defining Functions Activity Guide • SequenceLEDs_functions program • NavSquare_functions program 	Defining and Calling Functions slides Defining Functions Activity Guide / Answers Defining Functions Lesson Plan Solution code: SequenceLEDs_functions_1, NavSquare_functions_1, BinaryLEDs_functions
7	Functions with Parameters <ul style="list-style-type: none"> • Functions with Parameters Activity Guide • SequenceLEDs_functions program • NavSquare_functions program 	Functions with Parameters slides Functions with Parameters Activity Guide / Answers Functions with Parameters Lesson Plan Solution code: SequenceLEDs_functions_2, NavSquare_functions_2, BinaryLEDs_functions_2
8	CodeBot Mission 3 Objectives 10-11 <ul style="list-style-type: none"> • Mission 3 Obj 10-11 Assignment • WhatIf program 	Mission 3 Obj 10-11 Assignment Mission 3 Obj 10-11 Lesson Plan Mission 3 Review Kahoot! Obj 10-11 Solution code: WhatIf

9	Unit 1 Review Unit 1 Remix Project <ul style="list-style-type: none"> Unit 1 Remix Planning Guide 	Unit 1 Vocab Review Kahoot! Unit 1 Coding Review Kahoot! CodeBot Unit 1 Remix Project slides CodeBot Unit 1 Remix Planning Guide CodeBot Unit 1 Remix Lesson Plan
10	Unit 1 Remix Project <ul style="list-style-type: none"> Unit 1 Remix Planning Guide 	CodeBot Unit 1 Remix Project slides CodeBot Unit 1 Remix Log Planning Guide CodeBot Unit 1 Remix Lesson Plan
11	Unit 1 Remix Project <ul style="list-style-type: none"> Unit 1 Remix Planning Guide Unit 1 Remix Project Unit 1 Remix Peer Reviews Unit 1 Assessments	CodeBot Unit 1 Remix Project slides CodeBot Unit 1 Remix Planning Guide CodeBot Unit 1 Remix Lesson Plan Unit 1 Vocab Assessment (MS Forms) Unit 1 Coding Assessment (MS Forms) Create PT Written Response Prompts * Can include WR prompts as part of the Remix project
NOTE	<i>Additional questions are added to Unit 1 Review and Test Questions for binary numbers, functions and parameters.</i>	
Day	Unit 2 Mission or Lesson / Work to turn in	Resources
12	Design Process and Flowcharts <ul style="list-style-type: none"> Design Process and Flowcharts Activity Guide 	Design Process and Flowcharts slides Design Process and Flowcharts Activity Guide / Answers Design Process and Flowcharts Lesson Plan
13	Mission 4 Objectives 1-7 <ul style="list-style-type: none"> Mission 4 Obj 1-7 Assignment SweepLEDs program 	Mission 4 Obj 1-7 Assignment / Answers Mission 4 Obj 1-7 Lesson Plan Mission 4 Review Kahoot! Obj 1-5 Solution code: SweepLEDs_obj7
14	Mission 4 Objectives 8-12 <ul style="list-style-type: none"> Mission 4 Obj 8-12 Assignment SweepLEDs program 	Mission 4 Obj 8-12 Assignment / Answers Mission 4 Obj 8-12 Lesson Plan Mission 4 Review Kahoot! Obj 6-12 Solution code: SweepLEDs_final
15	Mission 5 Objectives 1-5 <ul style="list-style-type: none"> Mission 5 Obj 1-5 Assignment 	Mission 5 Obj 1-5 Assignment / Answers Mission 5 Obj 1-5 Lesson Plan Analog and Digital Data slides Test Surfaces (document with blocks of color) Solution code: LineSense_obj5
16	Mission 5 Objectives 6-9 <ul style="list-style-type: none"> Mission 5 Obj 6-9 Assignment LineSense program 	Mission 5 Obj 6-9 Assignment / Answers Mission 5 Obj 6-9 Lesson Plan Mission 5 Review Kahoot! Solution code: LineSense_obj7, LineSense_obj9, LineSense_final
17	Unit 2 Review Unit 2 Remix Project <ul style="list-style-type: none"> Unit 2 Remix Planning Guide 	Unit 2 Vocab Review Kahoot! Unit 2 Coding Review Kahoot! CodeBot Unit 2 Remix Project slides CodeBot Unit 2 Remix Planning Guide CodeBot Unit 2 Remix Lesson Plan
18	Unit 2 Remix Project <ul style="list-style-type: none"> Unit 2 Remix Planning Guide 	CodeBot Unit 2 Remix Project slides CodeBot Unit 2 Remix Planning Guide CodeBot Unit 2 Remix Lesson Plan

19	Unit 2 Remix Project <ul style="list-style-type: none"> Unit 2 Remix Planning Guide 	CodeBot Unit 2 Remix Project slides CodeBot Unit 2 Remix Planning Guide CodeBot Unit 2 Remix Lesson Plan
20	Unit 2 Remix Project <ul style="list-style-type: none"> Unit 2 Remix Planning Guide Unit 2 Remix Project Unit 2 Remix Peer Reviews Unit 2 Assessments	CodeBot Unit 2 Remix Project slides CodeBot Unit 2 Remix Planning Guide CodeBot Unit 2 Remix Lesson Plan Unit 2 Vocab Assessment (MS Forms) Unit 2 Coding Assessment (MS Forms) Create PT Written Response Prompts * Can include WR prompts as part of the Remix project
NOTE	<i>Additional questions are added to Unit 2 Review and Test Questions for flowcharts.</i>	
Day	Unit 3 Mission or Lesson / Work to turn in	Resources
21	Mission 6 Objectives 1-3 <ul style="list-style-type: none"> Mission 6 Obj 1-3 Assignment CheckLines program 	Mission 6 Obj 1-3 Assignment / Answers Mission 6 Obj 1-3 Lesson Plan Solution code: CheckLines_Obj3
22	Mission 6 Objectives 4-6 <ul style="list-style-type: none"> Mission 6 Obj 4-6 Assignment 	Mission 6 Obj 4-6 Assignment / Answers Mission 6 Obj 4-6 Lesson Plan Test Surfaces Solution code: LineFollow1_obj6
23	Mission 6 Objectives 7-8 <ul style="list-style-type: none"> Mission 6 Obj 7-8 Assignment LineFollow1 program 	Mission 6 Obj 7-8 Assignment / Answers Mission 6 Obj 7-8 Lesson Plan Mission 6 Review Kahoot! Solution code: LineFollow1_final
24	Mission 7 Objectives 1-5 <ul style="list-style-type: none"> Mission 7 Obj 1-5 Assignment 	Mission 7 Obj 1-5 Assignment / Answers Mission 7 Obj 1-5 Lesson Plan Solution code: HotPursuit_obj5
25	Mission 7 Objectives 6-9 <ul style="list-style-type: none"> Mission 7 Obj 6-9 Assignment 	Mission 7 Obj 6-9 Assignment / Answers Mission 7 Obj 6-9 Lesson Plan Solution code: HotPursuit_obj9
26	Mission 7 Objectives 10-11 <ul style="list-style-type: none"> Mission 7 Obj 10-11 Assignment HotPursuit program 	Mission 7 Obj 10-11 Assignment / Answers Mission 7 Obj 10-11 Lesson Plan Mission 7 Review Kahoot! Solution code: HotPursuit_final
27	Unit 3 Review Unit 3 Remix Project <ul style="list-style-type: none"> Unit 3 Remix Planning Guide 	Unit 3 Vocab Review Kahoot! Unit 3 Coding Review Kahoot! CodeBot Unit 3 Remix Project slides CodeBot Unit 3 Remix Planning Guide
28	Unit 3 Remix Project <ul style="list-style-type: none"> Unit 3 Remix Planning Guide 	CodeBot Unit 3 Remix Project slides CodeBot Unit 3 Remix Planning Guide
29	Unit 3 Remix Project <ul style="list-style-type: none"> Unit 3 Remix Planning Guide 	CodeBot Unit 3 Remix Project slides CodeBot Unit 3 Remix Planning Guide
30	Unit 3 Remix Project <ul style="list-style-type: none"> Unit 3 Remix Planning Guide Unit 3 Remix Project Unit 3 Remix Peer Reviews 	CodeBot Unit 3 Remix Project slides CodeBot Unit 3 Remix Planning Guide CodeBot Unit 3 Remix Lesson Plan Unit 3 Vocab Assessment (MS Forms)

	Unit 3 Assessment	Unit 3 Coding Assessment Create PT Written Response Prompts * Can include WR prompts as part of the Remix project
Day	Unit 4 Mission or Lesson / Work to turn in	Resources
31	Lists #1 <ul style="list-style-type: none"> Lists #1 Activity Guide 	Lists #1 slides Lists #1 Group Code Tracing Lists #1 Activity Guide / Answers Lists #1 Lesson Plan
32	Lists #2 <ul style="list-style-type: none"> Lists #2 Activity Guide 	Lists #2 slides Lists #2 Group Code Tracing Lists #2 Activity Guide / Answers Lists #2 Lesson Plan
33	Lists with CodeBot <ul style="list-style-type: none"> Lists with CodeBot Assignment PythonLists1 program SweepLEDs program (modified) 	Lists with CodeBot slides Lists with CodeBot Assignment / Answers Lists with CodeBot Lesson Plan Solution code: PythonLists1, SweepLEDs_lists
34	Traversing a List <ul style="list-style-type: none"> Traversing a List Assignment PythonLists2 program LineSense program (modified) 	Traversing a List slides Traversing a List Assignment / Answers Traversing a List Lesson Plan Solution code: PythonLists2, LineSense_lists
35	For Loop Practice <ul style="list-style-type: none"> For Loop Practice Assignment LineSense program (modified) WhatIf program (modified) SweepLEDs program (modified) A remix project modified 	For Loop Practice slides For Loop Practice Assignment / Answers For Loop Practice Lesson Plan Solution code: LineSense_loops, WhatIf_loops, SweepLEDs_loops
36	Functions, Parameters, and Variables <ul style="list-style-type: none"> Functions, Parameters and Variables Activity Guide 	Functions, Parameters and Variables slides Functions, Parameters and Variables Activity Guide / Answers Functions, Parameters and Variables Lesson Plan
37	Unit 4 Assessment	Lesson Plan: Unit 4 Assessment Unit 4 Review and Test Questions
NOTES	A question bank is provided for developing a test for this unit. No remix project is given for this unit. Students can continue to the Create PT Prep unit.	

Create PT Prep

NOTE	After Unit 4, students should complete the assignments in "Create PT Prep" and then work on their Create Performance Task Project. Resources for this unit include: AP CSP Student Task Directions and Create PT Written Response Prompts.	
Day	Create PT Prep Lesson / Work to turn in	Resources
1	Create PT Practice #1 <ul style="list-style-type: none"> PT Practice #1 Activity Guide PT_CodeBot_Practice1 program 	CodeBot PT Practice #1 slides CodeBot PT Practice #1 Activity Guide / Answers CodeBot PT Practice #1 Lesson Plan Solution code: PT_CodeBot_Practice1

2	Create PT Practice #2 <ul style="list-style-type: none"> PT Practice #2 Activity Guide PT_CodeBot_Practice2 program 	CodeBot PT Practice #2 slides CodeBot PT Practice #2 Activity Guide / Answers CodeBot PT Practice #2 Lesson Plan Solution code: PT_CodeBot_Practice2_example1, PT_CodeBot_Practice2_example2
3	Create PT Practice #3 <ul style="list-style-type: none"> PT Practice #3 Activity Guide PT_CodeBot_Practice3 program 	CodeBot PT Practice #3 slides CodeBot PT Practice #3 Activity Guide / Answers CodeBot PT Practice #3 Lesson Plan Solution code: PT_CodeBot_Practice3
4	Create PT Practice #4 <ul style="list-style-type: none"> PT Practice #4 Activity Guide PT_CodeBot_Practice4 program 	CodeBot PT Practice #4 slides CodeBot PT Practice #4 Activity Guide / Answers CodeBot PT Practice #4 Lesson Plan Solution code: PT_CodeBot_Practice4
5	Create PT Code PDF and Video Practice <ul style="list-style-type: none"> Create PT PDF and Video Practice Activity Guide PDFs for three programs Videos for two programs 	CodeBot Create PT PDF and Video Practice slides CodeBot Create PT PDF and Video Activity Guide / Answers CodeBot Create PT PDF and Video Lesson Plan
6	Create PT Code Segment Practice <ul style="list-style-type: none"> PPR Code Segments Activity Guide 	CodeBot PPR Code Segments Practice slides CodeBot PPR Code Segments Activity Guide / Answers CodeBot PPR Code Segments Practice Lesson Plan
7	Create PT Prep - Selecting a project <ul style="list-style-type: none"> Selecting a Project Activity Guide 	CodeBot Create PT - Selecting a Project slides CodeBot Selecting a Project Activity Guide / Answers CodeBot Selecting a Create PT Project Lesson Plan CodeBot Create PT Planning Guide
9 hours	Create Performance Task <ul style="list-style-type: none"> Students upload PDF to digital portfolio Students upload video to digital portfolio Students upload images for the PPR to the digital portfolio (optional - Create PT Planning Guide) 	AP CSP Student Task Directions Create PT Planning Guide
	Create PT Prep - Writing Prompts	Create PT Writing Prompts (Lesson coming soon!)
Note	An additional Practice PT Lesson is provided below. It uses a list that is a matrix, which is new material. You can choose to use it before the Create PT as an option, or wait until after, or not use it.	

Additional Supplemental Lessons

NOTE	These supplemental lessons give additional preparation for the AP Multiple Choice Exam. They are unplugged lessons, and they can be given in any order and at any time, before or after the Create PT. They should be completed before the AP Exam in May.	
Time	Additional Supplemental Lessons	Resources
	Algorithms #1 <ul style="list-style-type: none"> Algorithms #1 Activity Guide 	Algorithms #1 slides Algorithms #1 Activity Guide / Answers Algorithms #1 Lesson Plan

	Algorithms #2 <ul style="list-style-type: none"> Algorithms #2 Activity Guide 	Algorithms #2 slides Algorithms #2 Activity Guide / Answers Algorithms #2 Lesson Plan
	Algorithms #3 <ul style="list-style-type: none"> Algorithms #3 Activity Guide 	Algorithms #3 slides Algorithms #3 Activity Guide / Answers Algorithms #3 Lesson Plan
	Binary Numbers Applications <ul style="list-style-type: none"> Binary Numbers Applications Activity Guide 	Binary Numbers Applications slides Binary Numbers Applications Activity Guide / Answers Binary Numbers Applications Lesson Plan Code.org binary game (for extra practice)
	Types of Division <ul style="list-style-type: none"> Types of Division Activity Guide 	Types of Division slides Types of Division Activity Guide / Answers Types of Division Lesson Plan Problem Sets for Printing Types of Division Kahoot Review

AFTER the AP EXAM

NOTE	The following missions do not have topics required for the Create PT. They give additional skills in Python programming with a robot. They can be completed any time after Mission 7, including after the AP Exam.	
Time	Additional Missions for CodeX	Resources
1 day	Create PT Practice #5 <ul style="list-style-type: none"> PT Practice #5 Activity Guide PT_CodeBot_Practice4 program 	CodeBot PT Practice #5 slides CodeBot PT Practice #5 Activity Guide / Answers CodeBot PT Practice #5 Lesson Plan Solution code: PT_CodeBot_Practice5
2 days	Mission 8: Navigation (using wheel encoders)	Coming soon
2 days	Mission 9: All Systems Go! (battery tester, temperature measurement, and accelerometer)	Coming soon
Final Project	Combine your knowledge and curiosity to program the robot to accomplish your own tasks	Coming soon