

AP CSP Suggested Pacing Guide – Drop-in Course ([link to Learning Portal](#))

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 (7-8 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 CodeX 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: Algorithms lesson plan / LEGO maze cards
Day	Unit 1 Mission or Lesson / Work to turn in	Resources
1	CodeX Mission 1 & Mission 2 <ul style="list-style-type: none"> Mission 1 & 2 Assignment 	Mission 1 & 2 Assignment / Answers Mission 1 & 2 Lesson Plan Getting Started in CodeSpace slides
2	CodeX Mission 3 <ul style="list-style-type: none"> Mission 3 Assignment Pixels1 program 	Mission 3 Assignment / Answers Mission 3 Lesson Plan Mission 1, 2, 3 Review Kahoot! Code solution for Pixels1
3	Defining Functions Lesson <ul style="list-style-type: none"> Defining Functions Activity Guide Pixels1_functions program 	Defining Functions slides Defining Functions Activity Guide / Answers Defining Functions Lesson Plan Code solution for Pixels1_functions
4	RGB Colors Lesson <ul style="list-style-type: none"> RGB Colors Activity Guide Pixels1_RGB program 	RGB Colors slides RGB Colors Activity Guide / Answers RGB Colors Lesson Plan Code solution for Pixels1_RGB
5	CodeX Mission 4 Objectives 1-7 <ul style="list-style-type: none"> Mission 4 Obj 7 Assignment Display program (through Obj. 7) 	Mission 4 Obj 1-7 Assignment / Answers Mission 4 Obj 1-7 Lesson Plan Mission 4 Code Solution: Display_Obj7 Mission 4 Kahoot! Review
6	CodeX Mission 4 Objectives 8-10 & Functions <ul style="list-style-type: none"> Mission 4 Obj 8-10 & Functions Assignment Display program (through Obj. 10) Display_functions program 	Mission 4 Obj 8-10 & Functions Assignment / Answers Mission 4 Functions slides Mission 4 Obj 8-10 & Functions Lesson Plan Mission 4 Kahoot Review Code Solutions: Display_Obj10, Display_functions
7	CodeX Mission 5 <ul style="list-style-type: none"> Mission 5 Assignment Music1 program 	Mission 5 Assignment / Answers Mission 5 Lesson Plan Analog and Digital slides Adding Audio to CodeX slides Mission 5 Kahoot! Review
8	Unit 1 Review Unit 1 Remix Project <ul style="list-style-type: none"> Unit 1 Remix Planning Guide 	Unit 1 Vocab Kahoot! Review Unit 1 Coding Kahoot! Review Unit 1 Review Links and Test Questions CodeX Unit 1 Remix Project slides CodeX Unit 1 Remix Planning Guide CodeX Unit 1 Remix/Assessment Lesson Plan

9	Unit 1 Remix Project <ul style="list-style-type: none"> Unit 1 Remix Planning Guide 	CodeX Unit 1 Remix Project slides CodeX Unit 1 Remix Log Planning Guide CodeX Unit 1 Remix/Assessment Lesson Plan
10	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 	CodeX Unit 1 Remix Project slides CodeX Unit 1 Remix Planning Guide CodeX Unit 1 Remix/Assessment Lesson Plan Unit 1 Vocab Assessment Unit 1 Coding Assessment Unit 1 Review Links and Test Questions 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 Assessment question bank for RGB colors and functions.</i>	
Day	Unit 2 Mission or Lesson / Work to turn in	Resources
11	Design Process and Flowcharts <ul style="list-style-type: none"> Design Process and Flowcharts Activity Guide 	Design Process & Flowcharts slides Design Process & Flowcharts Activity Guide / Answers Design Process and Flowcharts Lesson Plan Flowchart Shapes Kahoot Review
12	From Code to Flowcharts <ul style="list-style-type: none"> From Code to Flowcharts Activity Guide 	From Code to Flowcharts slides From Code to Flowcharts Activity Guide / Answers From Code to Flowcharts Guided Notes From Code to Flowcharts Lesson Plan Flowchart Shapes Kahoot Review
13	Mission 6 Objectives 1-7 <ul style="list-style-type: none"> Mission 6 Obj 1-7 Assignment Heart2_functions program (through Obj 7) 	Mission 6 Obj 1-7 Assignment / Answers Mission 6 Obj 1-7 Lesson Plan Mission 6 Kahoot Review (#1-9) Code solution for Heart2_functions
14	Mission 6 Objectives 8-11 <ul style="list-style-type: none"> Mission 6 Obj 8-11 Assignment Heart2_functions program (final) 	Mission 6 Obj 8-11 Assignment / Answers Mission 6 Obj 8-11 Lesson Plan Mission 6 Kahoot Review! Code Solution for program: Heart2_functions_final
15	Mission 7 Objectives 1-6 <ul style="list-style-type: none"> Mission 7 Obj 1-6 Assignment Billboard program 	Mission 7 Obj 1-6 Assignment / Answers Mission 7 Obj 1- 6 Lesson Plan Mission 7 Kahoot! Review Code solution for program: Billboard
16	Mission 7 Objectives 7-9 <ul style="list-style-type: none"> Mission 7 Obj 7-9 Assignment Billboard program Billboard_functions program 	Mission 7 Obj 7-9 Assignment / Answers Mission 7 Obj 7-9 Lesson Plan Mission 7 Kahoot! Review Code solutions: Billboard_final, Billboard_functions, Billboard_functions_challenge
17	Lists #1 <ul style="list-style-type: none"> Lists #1 Activity Guide 	Lists #1 slides Lists #1 Activity Guide / Answers Lists #1 Group Code Tracing examples Lists #1 Lesson Plan
18	Lists #2 <ul style="list-style-type: none"> Lists #2 Activity Guide 	Lists #2 slides Lists #2 Activity Guide / Answers Lists #2 Group Code Tracing examples Lists #2 Lesson Plan

19	Mission 8 <ul style="list-style-type: none"> Mission 8 Assignment Answer_Bot program 	Mission 8 Assignment / Answers Mission 8 Lesson Plan Mission 8 Kahoot Review Code solutions: Answer_Bot_obj7, Answer_Bot_functions, Answer_Bot_challenge
20	Lists with JPG Images <ul style="list-style-type: none"> Picture_Bot program <i>This assignment is optional. If you are short on time, you can skip it or come back to it later.</i>	Lists with JPG images slides Lists with JPG images instruction document Lists with JPG images Activity Guide / Answers Lists with JPG Lesson Plan Code solution for program
21	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! CodeX Unit 2 Remix Project slides CodeX Unit 2 Remix Planning Guide CodeX Unit 2 Remix/Assessment Lesson Plan
22	Unit 2 Remix Project <ul style="list-style-type: none"> Unit 2 Remix Planning Guide 	CodeX Unit 2 Remix Project slides CodeX Unit 2 Remix Planning Guide CodeX Unit 2 Remix/Assessment Lesson Plan
23	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 	CodeX Unit 2 Remix/Assessment Lesson Plan Unit 2 Vocab Assessment Unit 2 Coding Assessment Create PT Written Response Prompts * Can include WR prompts as part of the Remix project
NOTE	Additional questions are added to Unit 2 Review and Assessment question bank for flowcharts & algorithms.	
Day	Unit 3 Mission or Lesson / Work to turn in	Resources
24	Types of Division <ul style="list-style-type: none"> Types of Division Activity Guide Billboard_modulo program 	Types of Division slides Types of Division Activity Guide / Answers Types of Division Lesson Plan Teaching Guide and Problem Sets for Printing Types of Division Kahoot Code Solution for program: Billboard_modulo
25	Mission 9 <ul style="list-style-type: none"> Mission 9 Assignment Game_Spinner program 	Mission 9 Assignment / Answers Mission 9 Lesson Plan Mission 9 Kahoot Review Code Solution for program: Game_Spinner
26	Functions with Parameters #1 <ul style="list-style-type: none"> Functions with Parameters #1 Activity Guide Pixels1_parameters Billboard_parameters 	Functions with Parameter #1 slides Functions with Parameters #1 Activity Guide / Answers Functions with Parameters #1 Lesson Plan Code Solutions: Billboard_parameters, Pixels1_parameters
27	Functions with Parameters #2 <ul style="list-style-type: none"> Functions with Parameters #2 Activity Guide Answer_Bot_parameters Heart2_parameters Display_parameters 	Functions with Parameter #2 slides Functions with Parameters #2 Activity Guide / Answers Functions with Parameters #2 Lesson Plan Code Solutions: Answer_Bot_parameters, Display_parameters, Heart2_parameters
28	Traversing a List #1 <ul style="list-style-type: none"> Traversing a List #1 Activity Guide 	Traversing a List #1 slides Traversing a List #1 Activity Guide / Answers

		Traversing a List #1 Lesson Plan Code Solutions: Answer_Bot_traversal, Billboard_traversal, Game_Spinner_traversal
29	Traversing a List #2 <ul style="list-style-type: none"> Traversing a List #2 Activity Guide 	Traversing a List #2 slides Traversing a List #2 Activity Guide / Answers Traversing a List #2 Lesson Plan Code Solutions: Answer_Bot_traverse_for, Pixels1_matrix, Pixels1_challenge, Pixels1_traversals
30	Traversing a List #3 <ul style="list-style-type: none"> Traversing a List #3 Activity Guide 	Traversing a List #3 slides Traversing a List #3 Activity Guide / Answers Traversing a List #3 Lesson Plan Code Solutions: Animal_Sorter, Class_Schedule, Number_Sorter
NOTE	<i>Questions for Unit 3, including mission 9 and all supplemental lessons, are included in the question bank. No remix project is given for this unit. Students can continue to the Create PT Prep unit.</i>	

Create PT Prep

NOTE	<i>After Unit 3, students are ready for the Create PT Project. Use the assignments in this unit for specific preparation. During the unit students complete their Create Performance Task Project.</i>	
NOTE	<i>Resources for this unit include: AP CSP Student Task Directions and Create PT Written Response Prompts.</i>	
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_Practice1 	PT Practice #1 slides PT Practice #1 Activity Guide / Answers PT Practice #1 Lesson Plan Code solution: PT_Practice1_final
2	Create PT Practice #2 <ul style="list-style-type: none"> PT Practice #2 Activity Guide PT_Practice2 	PT Practice #2 slides PT Practice #2 Activity Guide / Answers PT Practice #2 Lesson Plan Code solutions: PT_Practice2_part1, PT_Practice2_part2, PT_Practice2_final
3	Create PT Practice #3 <ul style="list-style-type: none"> PT Practice #3 Activity Guide PT_Practice3 	PT Practice #3 slides PT Practice #3 Activity Guide / Answers PT Practice #3 Lesson Plan Code solutions: PT_Practice3_part1, PT_Practice3_part2, PT_Practice3_part3, PT_Practice3_final
4	Create PT Practice #4 <ul style="list-style-type: none"> PT Practice #4 Activity Guide PT_Practice4 	PT Practice #4 slides PT Practice #4 Activity Guide / Answers PT Practice #4 Lesson Plan Code solutions: PT_Practice4_part1, PT_Practice4_part2, PT_Practice4_part3, PT_Practice4_final
5	Functions and Global Variables <ul style="list-style-type: none"> Functions and Global Variables Activity Guide PT_Practice_response 	Functions and Global Variables slides Functions and Global Variables Activity Guide/Answers Functions and Global Variables Lesson Plan Code solution: PT_Practice2_results

6	Create PT Code PDF and Video Practice <ul style="list-style-type: none"> Create PT PDF and Video Activity Guide A PDF for three practice programs A video for two practice programs 	Create PT PDF and Video Practice slides Create PT PDF and Video Practice Activity Guide / Answers Create PT PDF and Video Practice Lesson Plan
7	Create PT PPR Code Segment Practice <ul style="list-style-type: none"> PPR Code Segment Practice Activity Guide (students should save each image file, but they do not submit them) 	PPR Code Segment Practice slides PPR Code Segment Practice Activity Guide / Answers PPR Code Segment Practice Lesson Plan
8	Create PT Prep - Selecting a project <ul style="list-style-type: none"> Selecting a Project Activity Guide 	Create PT Selecting a Project slides Selecting a Project Activity Guide / Answers Selecting a Project Lesson Plan Create PT Planning Guide (for students)
9 class 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!)

AFTER the CREATE PT PROJECT

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
1 class	Algorithms #1 (robot code) <ul style="list-style-type: none"> Algorithms #1 Activity Guide Flowchart of Mission 4 program 	Algorithms #1 slides Algorithms #1 Activity Guide / Answers Algorithms #2 Lesson Plan
1 class	Algorithms #2 (robot code) <ul style="list-style-type: none"> Algorithms #2 Activity Guide 	Algorithms #2 slides Algorithms #2 Activity Guide / Answers Algorithms #2 Lesson Plan
1 class	Algorithms #3 (robot code) <ul style="list-style-type: none"> Algorithms #3 Activity Guide 	Algorithms #3 slides Algorithms #3 Activity Guide / Answers Algorithms #3 Lesson Plan
1 class	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 Code.org binary game (for extra practice)
1 class	Binary Numbers Applications <ul style="list-style-type: none"> Binary Applications Activity Guide 	Binary Applications slides Binary Applications Activity Guide / Answers Binary Applications Lesson Plan Code.org binary game (for extra practice)

1-2 class periods	From Flowcharts to Code <ul style="list-style-type: none"> From Flowcharts to Code Activity Guide 	From Flowcharts to Code slides From Flowcharts to Code Activity Guide / Answers From Flowcharts to Code Lesson Plan Python code solutions Flowcharts and Code Review / Answers Flowchart Shapes Kahoot! Review
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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 class period	Mission 10: Reaction Tester (uses internal clock) <ul style="list-style-type: none"> Mission 10 Assignment Reaction_Time program 	Mission 10 Assignment / Answers Mission 10 Lesson Plan Mission 10 Kahoot Review Code solutions: Reaction_Time_obj2, Reaction_Time_obj6, Reaction_Time_final
1 class period	Mission 11: Spirit Level (uses accelerometer) <ul style="list-style-type: none"> Mission 11 Assignment Spirit_Level program 	Mission 11 Assignment / Answers Mission 11 Lesson Plan Mission 11 Kahoot Review Code solutions: Spirit_Level_obj3, Spirit_Level_obj6, Spirit_Level_functions, Spirit_Level_challenge
1 class period	Mission 12: Night Light (uses built-in light sensor) <ul style="list-style-type: none"> Mission 12 Assignment NightLight program 	Mission 12 Assignment / Answers Mission 12 Lesson Plan Mission 12 Kahoot Review Code solutions: NightLight_obj5, NightLight_Function, NightLight_challenge
	Unit Reviews and Exams (Missions 9-12)	Unit 3 Vocab Kahoot Review Unit 3 Coding Kahoot Review Unit 3 Vocab Exam (MS Form) Unit 3 Coding Exam (MS Form)
3 class periods	Graphics in CodeX using Loops	(Lesson plan and assignments coming soon!)
2 class periods	Mission 13: Sounds Fun (create UI, sound effects) <ul style="list-style-type: none"> Mission 13 Assignment Race_Control program 	Mission 13 Assignment / Answers Mission 13 Lesson Plan Mission 13 Obj. 1-6 Kahoot Review Mission 13 Obj. 7-11 Kahoot Review Code solution for four objectives, final & challenge
2 class periods	Mission 14: Line Art (Use math to draw line art) <ul style="list-style-type: none"> Mission 14 Assignment Line_Art program 	Mission 14 Assignment / Answers Mission 14 Lesson Plan Mission 14 Obj. 1-5 Kahoot Review Mission 14 Obj. 6-9 Kahoot Review Mission 14 Kahoot Review Code solution for three objectives final & challenge
	Unit Reviews and Exams (Missions 9-12)	Unit 4 Vocab Kahoot Review Unit 4 Coding Kahoot Review Unit 4 Vocab Exam (MS Form) Unit 4 Coding Exam (MS Form)

1 class	Mission 15: Handball (first of a 2-part program)	Mission 15 (Lesson plan and assignment coming soon!)
1 class	Mission 16: Break Out (iconic arcade game)	Mission 16 (Lesson plan and assignment coming soon!)
	Unit Reviews and Exams (Missions 9-12)	Unit 5 Vocab Kahoot Review Unit 5 Coding Kahoot Review Unit 5 Vocab Exam (MS Form) Unit 5 Coding Exam (MS Form)
	Comprehensive Code Review (Missions 1-12) (Each Kahoot Review has 10 questions – total of 40 review questions)	CodeX Python Review #1 CodeX Python Review #2 CodeX Python Review #3 CodeX Python Review #4
NOTE	Even more lessons are available for CodeX. Check out the monthly project spotlights and the cross-curricular projects in the learning portal.	