

AP CSP Python with CodeX Functions with Parameters #2 Activity Guide		Name:																	
Review: Functions																			
Write three or more things you know about parameters and arguments.		Answers will vary. Answers can include: - A parameter passes information to a function. - A parameter is like a local variable in a function. - A parameter should have a descriptive name. - The order of parameters matters because the arguments must be in the same order.																	
Functions with Parameters #2 Examples																			
Go through the slides for Example #3. Take notes as needed in the space provided.		Notes as needed – Answer_Bot program This example adds a delay parameter to the program, and uses a random number for the argument.																	
Go through the slides for Example #4. Take notes as needed in the space provided.		Notes as needed – Heart2_functions program This example uses pre-defined images as parameters and arguments. A button press determines which animation is displayed.																	
Go through the slides for Example #5. Take notes as needed in the space provided.		Notes as needed – Display_functions program This example uses a string and a button as parameters and arguments. It reduces the program from 4 functions to 1.																	
Go through the slides that review local variables. Take notes as needed in the space provided.		Notes as needed. Information from the slides: - A local variable is defined and used only within a function - You need a local variable when the variable is being calculated - If the variable is the loop control variable or part of a condition																	
Local variables. <pre>def pixel_colors(delay): pixels.set(0, random.choice(COLOR_LIST)) pixels.set(1, random.choice(COLOR_LIST)) pixels.set(2, random.choice(COLOR_LIST)) pixels.set(3, random.choice(COLOR_LIST)) sleep(delay)</pre>		Answer_Bot program. <table><tr><th>Parameter</th><th>Data Type</th><th>Local Variable</th><th>Data Type</th></tr><tr><td>delay</td><td>Float or integer</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table> Write a possible function call for pixel_colors(): pixel_colors(delay) or pixel_colors(1.0)		Parameter	Data Type	Local Variable	Data Type	delay	Float or integer										
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Local variables.		Heart2_functions program. <table><tr><th>Parameter</th><th>Data Type</th><th>Local Variable</th><th>Data Type</th></tr><tr><td></td><td></td><td></td><td></td></tr></table>		Parameter	Data Type	Local Variable	Data Type												
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<pre>def heart_beat(pic1, pic2): display.show(pic1) sleep(delay) display.show(pic2) sleep(delay)</pre>	<table><tr><td>pic1</td><td>picture</td><td></td><td></td></tr><tr><td>pic2</td><td>picture</td><td></td><td></td></tr><tr><td></td><td></td><td>Delay is global</td><td></td></tr></table> Write a possible function call for heart_beat(): heart_beat(pic1, pic2) or heart_beat(pics.TSHIRT, pics.HOUSE)	pic1	picture			pic2	picture					Delay is global					
pic1	picture																
pic2	picture																
		Delay is global															
Local variables. <pre>def play_game(message, button): display.show(message) sleep(delay) pressed = buttons.is_pressed(button) if pressed: pixels.fill(GREEN) else: pixels.fill(RED)</pre>	Display_functions program. <table><tr><td>Parameter</td><td>Data Type</td><td>Local Variable</td><td>Data Type</td></tr><tr><td>message</td><td>string</td><td>pressed</td><td>Boolean</td></tr><tr><td>button</td><td>button</td><td></td><td></td></tr><tr><td></td><td></td><td>Delay is global</td><td></td></tr></table> Write a possible function call for play_game(): play_game(message, button) or play_game("Press A", BTN_A)	Parameter	Data Type	Local Variable	Data Type	message	string	pressed	Boolean	button	button					Delay is global	
Parameter	Data Type	Local Variable	Data Type														
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button	button																
		Delay is global															
Check for Understanding:																	
Function #1: <pre>def display_image(set_list, choice): if set_list == 'a': my_image = a_list[choice] else: my_image = b_list[choice] if type(my_image) == tuple: display.fill(my_image) else: display.show(my_image)</pre>	Identify the parameters and local variables : <table><tr><td>Parameter</td><td>Data type</td></tr><tr><td>set_list</td><td>string</td></tr><tr><td>choice</td><td>integer</td></tr><tr><td></td><td></td></tr><tr><td>Local Variable</td><td>Data type</td></tr><tr><td>my_image</td><td>Color or image</td></tr><tr><td></td><td></td></tr></table> Give a possible function all for the function: display_image(set_list, choice) or display_image('a', 1)	Parameter	Data type	set_list	string	choice	integer			Local Variable	Data type	my_image	Color or image				
Parameter	Data type																
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my_image	Color or image																
Function #2: <pre>def random_diceroll(rolls): count = 0 while count < rolls: num = random.randrange(1, 7) display.print(num, scale=10) sleep(0.2) count = count + 1</pre>	Identify the parameters and local variables : <table><tr><td>Parameter</td><td>Data type</td></tr><tr><td>rolls</td><td>integer</td></tr><tr><td></td><td></td></tr><tr><td>Local Variable</td><td>Data type</td></tr><tr><td>count</td><td>integer</td></tr><tr><td>num</td><td>integer</td></tr></table>	Parameter	Data type	rolls	integer			Local Variable	Data type	count	integer	num	integer				
Parameter	Data type																
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	Give a possible function all for the function: random_diceroll(rolls) or random_diceroll(4)	
Function #3: <pre>def slideshow(topic): if topic == 1: the_list = simpsons else: the_list = peanuts for index in range(len(the_list)): display.print(the_list[index])</pre>	Identify the parameters and local variables :	
	Parameter	Data type
	topic	integer
	Local Variable	Data type
	the_lists	List of strings
	index	integer
	Give a possible function all for the function: slideshow(topic) or slideshow(1)	