





Introduce arguments by having kids do a very repetitive task.



OBJECTIVES

- 1. Students will be able to explain the advantage of using arguments
- 2. Students will be able to call functions with an argument



AGENDA

Length: 45 minutes

- 1. Warm-up Large pixel bot grid
- 2. Arguments Analogies Explore arguments using golf swing and drill bit analogies.
- 3. Pixel bot challenge Solve pixel bot challenges with arguments



VOCAB

Argument - Specific value supplied to a function call



MATERIALS

- 1. Lesson 10 | Warm-up worksheet
- 2. Lesson 10 | Worksheet 1
- 3. Lesson 10 | Worksheet 2

- 4. Laptops/Computers
- 5. Scratch paper grids
- 6. Small turtle cutout for each student
- 7. Magnetic turtle
- 8. Scratch paper grids
- 9. Pencils
- 10. Whiteboard





Length: 10 minutes

Students solve a puzzle in a large pixelbot grid.

Prep:

- Draw the Pixel Bot image from Lesson 10 | Warm-up worksheet on the whiteboard
- Distribute Lesson 10 | Warm-up worksheet

	Teacher Actions		Student Actions
1	Individual work: Ask students to write code to create the image from Lesson 10 Warm-up worksheet. Remind students that this exercise is using the icon language that they learned in Lesson 1.	1	Students individually fill out the Lesson 10 Warm-up worksheet
2	Randomly call on one student at a time to provide each next line of code.	2	If called on, students provide the next line of code.
3	Discuss what made this particular picture difficult or frustrating to code? Possible answer: It required a lot of code because of the size of the grid.	3	Students raise their hands to provide an answer.



GOLF SWING AND DRILL BITS



Length: 20 minutes

Explore golf swing and drill bit analogies that help students arrive at concept of parameters/arguments.

Prep: Distribute Lesson 10 | Worksheet 1

	Teacher Actions		Student Actions
1	Model a golf swing for students. Show how the same golf swing is used for different clubs. Show the Lesson 10 Worksheet 1 golf diagram on the board and walk students through it.		
2	Model using a drill for students. Show how the same drill motion is used for different drill bits. Show the Lesson 10 Worksheet 1 drill bit diagram on the board and walk students through it.		
3	Point students' attention to Lesson 10 Worksheet 1. Ask students to find what is similar	3	Students look at Lesson 10 Worksheet 1

	about the two situations depicted.		
4	Individual work: Ask students to write down an answer.	4	Students individually write down their answers on the worksheet.
5	With a partner, students discuss their findings.	5	Students get with a partner and discuss their answers.
6	As a whole class, discuss the similarities between the two situations. Answer: The process is exactly the same (the golf swing never changes; the drill and the drill motion never change), but we can customize the output by changing the inputs (golf club, drill bit).	6	Students raise their hands to offer answers.





Length: 5 minutes

Explain how to use arguments through observation.

Prep: None

	Teacher Actions	Student Actions
1	Point students back to the problem on the whiteboard from Lesson 1 Warm-up worksheet.	
2	Tell students that the elements can use an argument. An argument is extra information to customize the output of a function. The argument goes into the space to the right of the element Example: → 5	
3	Ask students what they think the argument will do in the case of the arrows?	3 Students raise their hand to provide an answer.

	Answer: The number controls how many spaces to move in that direction.		
6	Ask students how adding a number next to the arrow icon relates to changing clubs in the golf swing? Answer: In both examples, the action is the same (swing the golf club, paint the square) but the input can be changed to customize the output.	6	Students raise their hand to provide an answer.
7	Solve the warm up problem while narrating the steps out loud.	7	Students observe as the teacher demonstrates how to solve the problem using arguments.



CODING WITH ARGUMENTS



Length: 10 minutes

Students use arguments to solve coding challenges.

Prep:

• Distribute Lesson 10 | Worksheet 2

Teacher Actions	Student Actions
Individual work: Students work on the problems on Lesson 10 Worksheet 2. Remind students to use arguments to solve the problems more efficiently.	1 Students individually fill in their worksheet.