Name: _____ **Date:** _____

Debug the Dragon's Path: A 1st Grade Algorithm Challenge

Can you spot the error in a hero's map? Students evaluate multi-step sequences to find the most efficient route through a logic puzzle.

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1. Pip the Penguin wants to get to his ice cream. His plan is: 1. Walk 2 steps. 2. Turn left. 3. Jump. If the ice cream is actually to his right, what should Pip do to fix his plan?

A. Change step 2 to 'Turn right'
B. Add a step to go back to bed
C. Skip step 1
D. Keep the plan exactly the same

2. To make a peanut butter sandwich, which sequence of steps is the MOST logical for a robot to follow?

A. Eat sandwich, then open jar
B. Get bread, spread jam, put together
C. Put away bread, then open bread
D. Close eyes, then jump

3. If an algorithm works but takes 100 steps to do something that could be done in 3 steps, it is an efficient solution.

A. True
B. False

4. You are building a LEGO tower. You realize the bottom brick is the wrong color. What is the BEST way to decompose this problem?

A. Throw the whole tower away
B. Cry until someone fixes it
C. Take off top bricks, swap bottom brick, rebuild
D. Paint the brick while it is on the bottom

5. A robot is stuck in a loop: 'Step forward, Step backward.' To reach a finish line in front of him, he should ___.

A. Add a 'Step backward' command
B. Remove the 'Step backward' command
C. Spin in a circle five times
D. Turn the power off

6. True or False: There is only ever ONE right way to write an algorithm to solve a problem.

A. True
B. False

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7. You want to draw a square. Which instruction is the MOST important to repeat four times?

A. Draw a wavy line
B. Pick a new color
C. Draw a line and turn 90 degrees
D. Close your eyes

8. Before you give a robot the 'Go' command, you should ___ your steps to make sure they work.

A. Delete
B. Hide
C. Test
D. Forget

9. Look at these two ways to get to the door: 1. Walk through the wall. 2. Walk through the open hallway. Why is path 2 better?

A. It is a possible step
B. It is the color blue
C. It uses more steps
D. It is much harder

10. In a hard problem, searching for a specific toy by looking through every single box is more efficient than looking only in the 'Toy Box.'

A. True
B. False