

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Answer Key: Debug the Maze: Master Programming Logic for 4th Grade

Go beyond simple typing to understand how loops and if-then logic control a digital pet's life and robot movements.

**1. Imagine you are building a digital aquarium. If you want to store the number of fish in the tank so you can add more later, what would you use?**

**Answer:** B) A Variable

A variable acts like a container or a label that holds information, such as a number, which can change over time.

**2. A 'Conditional' is a piece of code that allows a computer to make a choice, like deciding to show an umbrella icon only if it is raining.**

**Answer:** A) True

Conditionals use 'If-Then' logic to let the computer check a situation and decide which action to take.

**3. When a robot needs to brush its teeth, it moves the brush up and down ten times. This repeating action is called a \_\_\_\_.**

**Answer:** C) Loop

Loops are used to repeat a set of instructions multiple times without having to write the code over and over.

**4. You create a block of code called 'DanceMove' that makes a character jump and spin. Every time you want the character to dance, you just use that one name. This is an example of a:**

**Answer:** B) Function

Functions are reusable 'mini-programs' inside a larger program that perform a specific task when called.

**5. In programming, a variable can only hold numbers and cannot hold words like a player's name.**

**Answer:** B) False

Variables are flexible; they can store numbers, strings of text (like names), or even colors.

**6. Complete this logic: 'IF the player touches a lava block, THEN the game is \_\_\_\_.'**

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**Answer:** C) Over

This is a conditional statement. If the first part (the condition) is true, the second part (the result) happens.

**7. Which of these is the best example of a 'Loop' in real life?**

**Answer:** C) Running around a track four times.

Running laps is a repetitive action, just like a loop repeats instructions in code.

**8. If you want a program to do something a specific number of times, you should use a 'For Loop'.**

**Answer:** A) True

A 'For Loop' is specifically designed to repeat an action a set number of times (like 5 or 100).

**9. If you are coding a game and want the player to jump only when they press the spacebar, you are using a \_\_\_\_.**

**Answer:** B) Conditional

The program checks the 'condition' (is spacebar pressed?) before performing the action (jump).

**10. What happens to the value inside a variable when you 'update' it, like adding 1 point to a score?**

**Answer:** C) The old value is replaced by the new total.

Variables are designed to change. When you update one, the computer replaces the old data with the updated data.