Name: _____ **Date:** _____

Answer Key: Nail Kindergarten Computer Logic Creation

Synthesize pattern recognition and complex logic building through hands-on algorithm construction. A rigorous extension for young learners ready for multi-step reasoning.

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1. If you are designing a robot to brush its teeth, which step must happen BEFORE the robot starts scrubbing?

Answer: B) Put toothpaste on the brush

In programming logic, sequences must be chronological. You cannot scrub effectively without first applying the toothpaste.

2. To make a character dance forever without stopping, a programmer needs to use a Loop.

Answer: A) True

Loops are structures that repeat actions, which is the most efficient way to keep an animation moving indefinitely.

3. A robot sees a puddle. The programmer says: '___ there is water, then jump over it.' What word starts this decision?

Answer: B) If

The word 'If' starts a conditional statement, which allows a program to make a decision based on a specific situation.

4. You want to store a 'Secret Color' in your program to use later. Which programming tool acts like a labeled box to hold this info?

Answer: C) A Variable

A variable is a named storage location used to hold data that the program can remember and change.

5. Imagine a 'Function' named WIGGLE that makes a sprite shake twice. To use it three times, a smart programmer would use a ___.

Answer: B) Loop

Combining a function with a loop is a synthesis of two concepts to repeat a complex action efficiently.

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6. A programmer must write a NEW function every single time they want a character to jump, even if the jump is exactly the same.

Answer: B) False

Functions are reusable blocks of code. You write them once and 'call' them whenever you need that specific action again.

7. A robot is walking. If the light is RED, it stops. If the light is GREEN, it walks. What is this type of logic called?

Answer: A) Conditionals

Conditionals (If-Then statements) allow programs to change their behavior based on different inputs or sensors.

8. An algorithm is like a ___ for a computer. It tells it exactly which steps to follow in the right order.

Answer: C) Recipe

A recipe is a perfect analogy for an algorithm because both require specific steps in a specific order to achieve a result.

9. In a game, the 'Score' is an example of a Variable because the number changes as you play.

Answer: A) True

Variables are designed to store data that can be updated, such as adding points to a score.

10. Which set of instructions would create a square? (Assume each step is followed by a 90-degree turn).

Answer: B) Loop 'Move forward' 4 times

A square has four equal sides. Using a loop to repeat the 'move and turn' action four times completes the shape logically.