Name: _____ **Date:** _____

Answer Key: Pizza Party Logic: Kindergarten Algorithm Architects Quiz

Create and troubleshoot multi-step sequences for real-world tasks to demonstrate high-level procedural decomposition and error correction.

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1. You are building a robot to help a gardener. If the robot must plant a seed, which step has to happen BEFORE the robot pours water?

Answer: B) Dig a hole and drop the seed in

In this algorithm, the seed must be in the ground (the hole) before water is applied to help it grow.

2. You are making a 'Morning Routine' algorithm. 1. Get out of bed. 2. Put on clothes. 3. _____. 4. Go to school. What is the best missing step?

Answer: A) Brush your teeth

Brushing your teeth is a logical morning step that fits between getting dressed and leaving the house.

3. If your algorithm for making a sandwich says 'Put jelly on top of the bread' and you don't have bread, the algorithm will still work perfectly.

Answer: B) False

Algorithms require all necessary 'inputs' (materials) to be successful; without bread, the sequence fails.

4. You want to draw a smiley face. Which sequence of steps is in the correct logical order?

Answer: B) Draw a big circle, then draw two eyes and a mouth inside it.

Effective algorithm design requires the container (the face circle) to be created before placing features (eyes/mouth) inside.

5. Decomposition means taking a big job, like cleaning a giant playroom, and breaking it into tiny jobs like 'pick up the legos'.

Answer: A) True

Decomposition is the process of breaking a complex problem into smaller, more manageable parts.

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6. Your algorithm for an ice cream sundae is: 1. Get a bowl. 2. Add ice cream. 3. Add sprinkles. 4. Eat! What happens if you skip step 2?

Answer: A) You eat a bowl of sprinkles

Skipping a core step in an algorithm changes the final output; without ice cream, you only have the toppings.

7. To build a tall block tower that doesn't fall, which 'rule' should be in your building algorithm?

Answer: B) Put the heavy, wide blocks at the bottom first.

This demonstrates algorithmic efficiency; placing a wide base ensures the steps that follow (adding height) result in success.

8. You are 'debugging' a dance. The music says CLAP, but the dancer is KICKING. What should the dancer do to fix the bug?

Answer: C) Change the kicking step to a clap

Debugging is the process of finding an error in a sequence and changing it to match the intended goal.

9. An algorithm is only for computers; it can never be used for real-life things like washing your hands.

Answer: B) False

Algorithms are step-by-step instructions for any task, whether done by a human or a computer.

10. You are designing a path for a bee to get to a flower. There is a spider web in the way. What is the smartest way to design the algorithm?

Answer: C) Add a step to 'Turn Left' and 'Fly Around' the web.

Problem-solving in algorithms involves identifying obstacles and creating new steps to navigate around them safely.