

Name: _____

Date: _____

Answer Key: Your Detective Kit: Logic Quest for Pre-K Explorers

Examine missing snack clues and animal patterns using multi-step reasoning to build the investigative foundations used by real-life forensic scientists.

1. You see muddy paw prints on the floor and a missing dog treat. You find your dog, Barnaby, with mud on his paws. What is the most likely reason the treat is gone?

Answer: B) Barnaby walked inside and ate it

Synthesis of two clues (muddy paws and missing treat) leads to the logical conclusion that Barnaby is the culprit.

2. If all squirrels love acorns, and Nutty is a squirrel, then Nutty must love acorns.

Answer: A) True

This is a basic categorical syllogism. If a rule applies to the whole group, it must apply to the individual member.

3. Look at this patterns: Red Ball, Blue Block, Red Ball, Blue Block. If you want to keep the pattern going, what comes next?

Answer: C) A Red Ball

Logical sequencing requires identifying the repeating unit (Red Ball-Blue Block) and predicting the start of the next unit.

4. You are building a tower. It falls every time you put the heavy big block on the tiny small block. How can you change your plan to make it stay up?

Answer: B) Put the heavy big block on the bottom

Critical thinking about cause-and-effect allows the child to synthesize a new solution (a stable base) to solve a recurring problem.

5. If you see your friend wearing a raincoat and carrying an umbrella, it is probably a sunny day.

Answer: B) False

Inferential reasoning uses observed evidence (rain gear) to conclude the likely state of the environment (rainy, not sunny).

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6. If an ice cube is a 'solid' because it is hard, and water is a 'liquid' because it flows, what is a rock?

Answer: C) A solid

This requires analogical reasoning: comparing the hardness of a rock to the hardness of an ice cube to categorize it.

7. You want to draw a picture, but the blue crayon is broken. You have yellow and green. What is the smartest way to finish your sky?

Answer: C) Use the broken pieces or decide a new color

This assesses problem-solving and cognitive flexibility—the ability to find an alternative goal when a tool is compromised.

8. Because my cat has four legs and my dog has four legs, all animals with four legs must be dogs.

Answer: B) False

This identifies a logical fallacy (overgeneralization). Just because two things share a trait, they aren't the same thing.

9. A key opens a lock. A hand opens a jar. What does a light switch 'open' or turn on?

Answer: B) A lamp

Functional reasoning: the child must match the function of 'activating' or 'releasing' to the correct object.

10. The wind is blowing hard. Your hat stays on, but your sister's hat flies away. Why did hers fly away but yours stayed?

Answer: C) Your hat has a chin strap and hers doesn't

Evaluating different outcomes based on physical variables requires identifying the distinguishing factor (the strap).