Name: _____ **Date:** _____

Answer Key: Outsmart the Lab: A 5th Grade Safety Mystery Quiz

Students apply analytical reasoning to recognize equipment hazards and justify emergency responses in a simulated laboratory environment.

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1. You notice a small crack in the bottom of a glass beaker before starting an experiment involving a heat lamp. What is the most scientific reason for replacing it?

Answer: B) Thermal expansion could cause the beaker to shatter when heated.

Even tiny cracks (stress fractures) can fail under the pressure of temperature changes, leading to dangerous shattering.

2. Instead of sniffing a chemical directly, a student should use a hand motion to bring the scent toward their nose, a technique called _____.

Answer: B) Wafting

Wafting protects the respiratory system by diluting the chemical vapor with air before it reaches the nose.

3. True or False: If you accidentally spill a benign substance like table salt during an investigation, you should clean it up immediately before telling the teacher.

Answer: B) False

All spills, regardless of how harmless they seem, must be reported to the instructor first to ensure proper disposal and safety protocols.

4. While observing a chemical reaction, your partner's sleeve catches on a ring stand. Why is organized personal space considered a safety requirement?

Answer: C) Clutter increases the risk of cross-contamination and tripping hazards.

Maintaining a clear workspace is a preventative measure that reduces accidental tipping of equipment or contamination of samples.

5. A student is moving a heavy microscope across the lab. They should carry it with one hand on the 'arm' and the other hand supporting the _____.

Answer: C) Base

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Supporting the base ensures the weight of the microscope is distributed and prevents it from slipping or being dropped.

6. If a substance splashes into your eyes, how long must you continue to rinse them at the eyewash station?

Answer: C) At least 15 to 20 minutes

Chemicals can lodge behind the eye or in tissues; a long rinse is required to ensure complete removal and neutralization.

7. True or False: Long hair should be tied back during a lab only if you are working with an open flame.

Answer: B) False

Hair must be tied back to prevent it from touching chemicals, getting caught in equipment, or obstructing your vision, not just for fire safety.

8. Why is it strictly forbidden to eat or drink in the science laboratory, even if you are not currently using chemicals?

Answer: B) Surfaces may have invisible chemical residues from previous experiments.

Cross-contamination is a major risk; even 'clean' looking tables can harbor residues that are harmful if ingested.

9. Identify the piece of safety equipment used to extinguish a fire that has started on a person's clothing: the _____.

Answer: B) Fire Blanket

A fire blanket is used to smother flames on a person, as fire extinguishers can contain chemicals harmful to skin and lungs.

10. True or False: Used chemicals should always be poured down the sink with plenty of water unless the teacher says otherwise.

Answer: B) False

Many chemicals are hazardous to the environment and must be collected in specific waste containers rather than disposed of in the drain.