

Name: _____ Date: _____

Answer Key: Super-Safe Science Scholars: 5th Grade Lab Leaders

Imagine being the safety lead during a volcano simulation; students will analyze complex hazard scenarios and justify emergency response decisions.

1. While observing a chemical change in a graduated cylinder, your partner notices a small crack in the base. What is the most analytical primary step to ensure safety?

Answer: B) Carefully transfer the liquid to a secondary container and notify the teacher.

Damaged glassware can fail catastrophically under pressure or temperature changes; transferring the substance and reporting the hazard prevents injury and chemical leaks.

2. If a non-corrosive saline solution splashes into your eyes, you are required to use the eyewash station for a minimum of 20 minutes regardless of the substance's pH.

Answer: A) True

Safety protocols dictate a full 15-20 minute flush for any foreign substance to ensure it is completely removed from the ocular membranes.

3. When heating a test tube over a Bunsen burner, you must always point the opening of the tube ____.

Answer: C) away from yourself and all other people

Sudden boiling (bumping) can eject hot liquids; pointing the tube away from everyone prevents thermal and chemical burns.

4. You realize you have taken 50ml of vinegar for a titration but only need 10ml. What is the most responsible way to handle the 40ml surplus?

Answer: C) Dispose of it according to your teacher's specific chemical waste instructions.

Returning chemicals to stock bottles can cause cross-contamination; proper disposal or teacher-guided reuse is the only safe standard.

5. Biological specimens, such as owl pellets or plant matter, do not require the use of gloves because they are natural objects.

Answer: B) False

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Biological materials can carry bacteria or allergens; personal protective equipment (PPE) like gloves is essential for hygiene and safety.

6. To safely investigate the odor of a volatile substance, a scientist should use a technique called ____.

Answer: A) wafting

Wafting involves using your hand to gently wave vapors toward your nose, preventing direct inhalation of potentially harmful or irritating fumes.

7. Which piece of safety equipment is most appropriate if a large beaker of ethanol tips over and ignites on the lab bench?

Answer: C) Working fire extinguisher

Fire extinguishers are designed for surface fires; a fire blanket is primarily used on people, and water from a shower could spread a chemical fire.

8. Long hair must be tied back and loose jewelry removed before beginning an experiment with mechanical pulleys or open flames.

Answer: A) True

Loose items are physical hazards that can be caught in moving equipment or easily ignited by heat sources.

9. If a heavy glass microscope slides off a table and shatters, you should immediately ____.

Answer: C) notify the teacher and keep others away from the area

Broken glass requires specific cleanup tools like a broom and dustpan; notifying the teacher prevents others from stepping in the hazardous zone.

10. What is the most critical reason for wearing safety goggles even when you are just recording data while others at your table are still working?

Answer: C) Accidents from nearby experiments can still splash or throw debris into your eyes.

Lab safety is a collective environment; hazards are not limited to your own hands but include the actions of everyone in the vicinity.