Name: _____ **Date:** _____

Answer Key: Think You're Safe? Your Freshman Lab Survival Challenge

Navigate real-world laboratory scenarios and identify essential safety protocols to ensure a hazard-free workspace during high school science experiments.

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1. A fellow student is using a Bunsen burner and their lab notebook catches fire. What is the most appropriate immediate action for you to take?

Answer: B) Alert the instructor and use a fire extinguisher or fire blanket if directed.

Safety protocols dictate that you must notify the instructor immediately; specialized equipment like fire blankets or extinguishers are safer and more effective than water, which can damage other equipment.

2. True or False: Because long hair is flammable and can interfere with experiments, it must be tied back before entering the active lab zone.

Answer: A) True

Loose hair is a physical hazard that can easily catch fire in a flame or become entangled in moving mechanical parts or chemical spills.

3. When diluting a concentrated acid, you should always add the _____ to the _____ to prevent the solution from splashing or boiling over.

Answer: C) acid; water

The mnemonic 'Do as you oughta, add acid to water' helps prevent the rapid heat release that occurs when water hits concentrated acid, which can cause dangerous splashing.

4. Which of these is the correct way to smell a chemical substance if instructed by your teacher to observe its odor?

Answer: C) Waft the vapors toward your nose using a circular motion of your hand.

Wafting allows a small, safer amount of vapor to reach your nose without risking chemical burns to your respiratory system.

5. True or False: If you get a chemical in your eye, you should rinse it at the eyewash station for a minimum of 20 minutes.

Answer: A) True

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Standard safety protocol requires flushing eyes for at least 15 to 20 minutes to ensure all traces of the chemical are diluted and removed.

6. You notice a small crack in the bottom of a glass test tube you are about to heat. What is the correct procedure?

Answer: D) Dispose of it in the designated glass waste container and get a new one.

Compromised glassware is prone to 'thermal shock' and may shatter when heated, leading to dangerous spills and glass shards.

7. Before leaving the lab for the day, the very last thing every student must do to prevent cross-contamination is _____.

Answer: B) wash their hands

Washing hands with soap and water removes any microscopic chemical residues or biological agents that might have bypassed gloves during the lab.

8. While working with an unknown clear liquid, you accidentally spill some on your lab bench. What should you do first?

Answer: C) Inform your teacher to identify the substance and proper cleanup method.

Different chemicals require different neutralization or absorption methods; the teacher will determine if it is a hazard that requires specific disposal.

9. True or False: Safety goggles are only required when you are personally handling chemicals, not when you are just observing a partner.

Answer: B) False

PPE (Personal Protective Equipment) is required for everyone in the lab area because accidents, like explosions or splashes, can affect anyone nearby.

10. If a piece of electrical equipment has a _____ cord, you should not plug it in as it poses a significant shock or fire risk.

Answer: B) frayed

Frayed or damaged insulation on electrical cords can expose wires, leading to short circuits, sparks, or electrical shock to the user.