

Questions on Safety Equipment and Lab Safety Rules

Answer the following questions on a separate sheet of paper. Point form is okay.

1. Where is the nearest fire alarm pull station?
2. Identify the 3 pieces of safety equipment that can be used to put out fires. Fill out the following comparison table:

Equipment Name	When should it be used?	When should it not be used?	Other notes

3. Describe, in detail, the evacuation route that would be taken out of the primary exit door. Where does it lead?
4. What should you do if there is a big fire in the laboratory?
5. If you are on fire, what should you do?
6. If a classmate is on fire, what should you do to help them?
7. Why shouldn't you use a fire extinguisher on people?
8. List three (or more!) things that it is important to do before a lab and explain why they are important.
9. What is the purpose of the fume hood?
10. What types of accidents and spills should you tell the teacher about?
11. When do you use the eyewash vs the safety shower? How do you use the eyewash? How do you use the safety shower?
12. When should you wash your hands in a science classroom?
13. Why shouldn't you smell chemicals directly in a lab? What should you do instead?
14. Neha is trying to use a fire extinguisher. She smashes the glass and removes the extinguisher, then aims the hose at the base of the fire, but when she tries to press the nozzle, nothing happens. What has she done wrong?
15. Nicole is working with some chemicals, when her long hair brushes against a beaker of unlabeled liquid sitting at the edge of her lab bench, and falls to the floor and shatters. She remembers her teacher saying that any spills should be wiped up with paper towel, so she leaves her lab bench to go get some paper towel. List 4 things she forgot to do or should have done differently in this situation (there are up to 6)

The following questions may require some critical thinking or extra research. Feel free to discuss with a friend.

16. Why do you aim at the base of the fire instead of the top of the flames?
17. Why don't we generally use water to put out fires in the science lab?
18. Your classmate has gotten a large piece of glass in their eye. What should you suggest that they do?
19. Why are contact lenses discouraged in science class?
20. Omar accidentally measures out 15g of copper(II) chloride onto the digital balance, instead of the 10g that is required for this lab. Omar is environmentally friendly and wants to put the extra copper(II) chloride back into the original container. Why is this a bad idea?
21. Briana has some extra chemical left over from a lab. She tries to put it in the garbage can, but her lab partner stops her. What should be done instead? Why can it be dangerous to put chemicals into the garbage can?

Questions on Safety Equipment and Lab Safety Rules (KEY)

Answer the following questions on a separate sheet of paper. Point form is okay.

1. Where is the nearest fire alarm pull station?

Along the evacuation route, right outside the upper A wing stairwell

2. Identify the 3 pieces of safety equipment that can be used to put out fires. Fill out the following comparison table:

Equipment Name	When should it be used?	When should it not be used?	How does it work?
<i>Fire blanket</i>	<i>On people</i>	<i>N/a</i>	<i>Smother's fire</i>
<i>Fire extinguisher</i>	<i>Small fires</i>	<i>On people</i>	<i>Smother's fire Only lasts 30 seconds PASS (pull pin, aim at base, squeeze nozzle, sweep)</i>
<i>Sand bucket</i>	<i>On small fires</i>	<i>On people</i>	<i>Smother's fire</i>

3. Describe, in detail, the evacuation route that would be taken out of the primary exit door. Where does it lead?

Go out the door, turn right, head to the stairwell, go downstairs and out. Make sure to stay away from the building while evacuating. Evacuation route leads to the field.

4. What should you do if there is a big fire in the laboratory?

Evacuate, pull the alarm, close doors on the way out and make sure everyone is accounted for. Stay away from the building while evacuating

5. If you are on fire, what should you do?

Stop, drop, and roll.

6. If a classmate is on fire, what should you do to help them?

Get a fire blanket and try to smother the flames while they are rolling on the ground; call a teacher.

7. Why shouldn't you use a fire extinguisher on people?

Fire extinguishers work by smothering flames and cutting off the oxygen supply. This could cause suffocation if used on a human. Some fire extinguishers involve compressed CO₂, which is cold and could cause freeze burns.

8. List three (or more!) things that it is important to do before a lab and explain why they are important.

a) Wear appropriate clothing, and safety goggles. This protects your skin and eyes from possible exposure to chemicals.

b) Leave food and drink outside the lab. Eating and drinking in a lab is dangerous...could end up consuming something that has been contaminated with chemicals.

c) *Read lab so you know what you're doing and you are less likely to make mistakes. Reading the lab will also let you know of any safety precautions or hazards associated with the lab.*

9. What is the purpose of the fume hood?

Contains and removes fumes, vapors, and dust

10. What types of accidents and spills should you tell the teacher about?

All of them! But keep in mind that some types of accidents need to be dealt with immediately because they are emergencies (e.g. someone is on fire, someone has gotten a chemical in their eye); the teacher should be told after a plan has been put in action to deal with these emergencies already.

11. When do you use the eyewash vs the safety shower? How do you use the eyewash? How do you use the safety shower?

Eyewash: run for 15 minutes by pushing the lever, eyes open. Is when you get chemicals and irritants in your eye. Shower: run for 15 minutes by pulling down the handle, outer clothing removed, is in case of large chemical spills.

12. When should you wash your hands in a science classroom?

Before and after a lab. Also, in case of minor chemical spills on your hands.

13. Why shouldn't you smell chemicals directly in a lab? What should you do instead?

Some chemicals release fumes that could damage the delicate linings of our respiratory tract. We should waft instead (using our hand to "push" air towards our nose).

14. Neha is trying to use a fire extinguisher. She smashes the glass and removes the extinguisher, then aims the hose at the base of the fire, but when she tries to press the nozzle, nothing happens. What has she done wrong?

She forgot to pull the pin.

15. Nicole is working with some chemicals, when her long hair brushes against a beaker of unlabeled liquid sitting at the edge of her lab bench, and falls to the floor and shatters. She remembers her teacher saying that any spills should be wiped up with paper towel, so she leaves her lab bench to go get some paper towel. List 4 things she forgot to do or should have done differently in this situation (there are up to 6)

a) *Long hair should have been tied up*

b) *Liquid should have been labelled...is she even sure that the liquid is what she thinks it is and therefore should be wiped up with the paper towel?*

c) *Beaker should not have been at the edge of the bench.*

d) *Should have left someone to keep watch over the area and warn others*

e) *Needs to also get a broom and dustpan to deal with the broken glass*

f) *Needs to tell teacher*

The following questions may require some critical thinking or extra research. Feel free to discuss with a friend.

16. Why do you aim at the base of the fire instead of the top of the flames?

Want to hit the fuel source

17. Why don't we generally use water to put out fires in the science lab?

Some fires have electrical causes. If you pour water on an electrical fire, it will make it worse. There are also some times when water can react with chemical-caused fires, and make things worse, or splash chemicals around and cause the fire to spread faster.

18. Your classmate has gotten a large piece of glass in their eye. What should you suggest that they do?

*They should **not** use the eyewash. They need first aid. Tell the teacher, and probably call 911.*

19. Why are contact lenses discouraged in science class?

Very difficult to remove a contact lens when there is chemical or another irritant in your eye. But need to remove contact lens in order to use the eyewash.

Also, some fumes can get trapped underneath a lens and cause major irritation.

20. Omar accidentally measures out 15g of copper(II) chloride onto the digital balance, instead of the 10g that is required for this lab. Omar is environmentally friendly and wants to put the extra copper(II) chloride back into the original container. Why is this a bad idea? What should be done instead?

Could contaminate the pure substance that is in the original container. Or, worse, could cause an unexpected reaction in the container or when another student tries to use it.

21. Briana has some extra chemical left over from a lab. She knows that Ms. Au talked about what to do with leftover chemical, but she was distracted on her phone when Ms. Au was talking. She doesn't want to admit she wasn't listening, so she puts it in the garbage can instead. Why is putting chemicals in the garbage can potentially dangerous? What should Briana do instead?

Garbage cans are made of metal, and chemicals could react with metal. She should ask a classmate or the teacher and follow appropriate disposal instructions for the chemical.