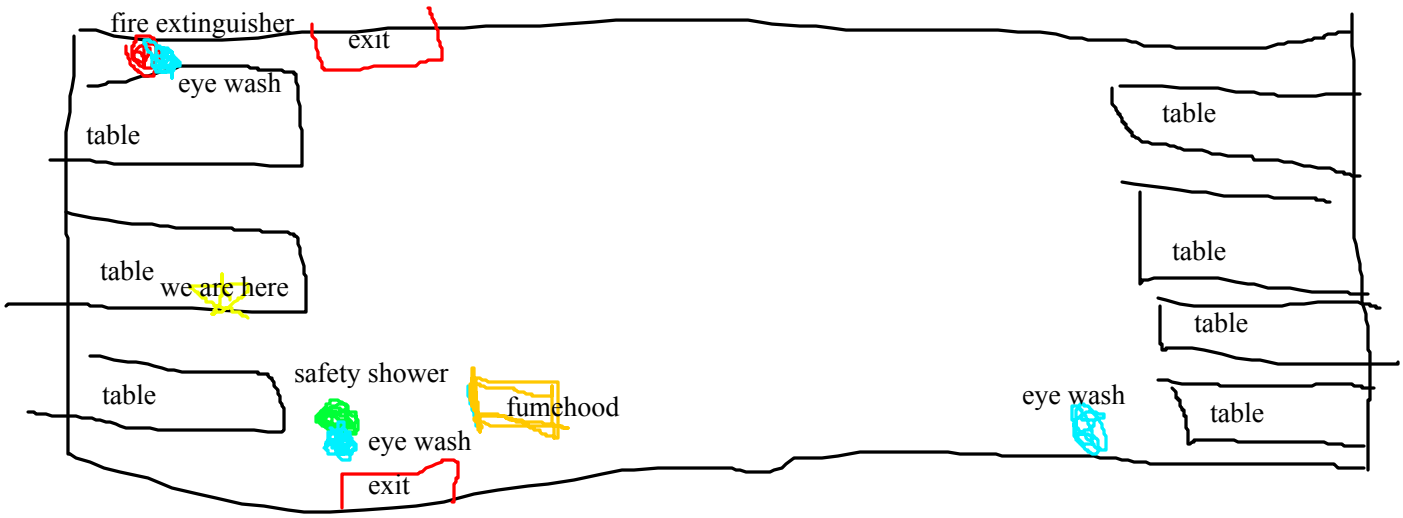
Safety

Statistics are no substitute for judgment.

1. Sketch below a representation of your laboratory, showing clearly the location of the following: exits, fire extinguishers, safety shower, eyewash fountain, and fume hoods.



2. Why must you wear safety glasses or goggles at all times while you are in the laboratory, even when you are not working on an experiment? _____
There may be times where chemicals splash, so eye protection via goggles should be mandatory.
Protect yourself from others, and it is required by law.

3. Suppose your neighbor in the lab were to spill several milliliters of a flammable substance near her burner, which were then ignited. How should this relatively small fire be extinguished? _____
Put a beaker on top of it to stop oxygen flow. Stifle it using fire blanket. If in beaker, use watchglass.
Also turn off the burner.

4. What steps should be taken if a larger-scale fire were to break out in the laboratory? _____
Fire extinguisher, and if that doesn't work, evacuate.
Unplug all electronics and turn off all sources of flammable things such as burners.

5. What measures should be taken if a student's clothing were to be ignited? _____
Fire blanket. Stop, drop and roll. Don't cover face with fire blanket or cut off oxygen flow.

6. List five types of clothing or footwear that are ***not*** acceptable in the laboratory, and why they are not acceptable.
Really long sleeves - may get into chemicals.
Open toed shoes - no protection against chemical spills.
Contact lenses - cannot clean efficiently during chemical contact in eye.
Shorts - offer no protection against chemical spills.
Really short sleeves - no protection against chemical spills.
Silk or polymer based clothing - burns and melts.
Long hair tied into ponytail - prevent fire.

7. Suppose you were pouring concentrated nitric acid from a bottle into your reaction flask, and you spilled the acid down the front of your shirt or blouse. What should you do?
Run to the shower, and pull the tab to activate the water. Take off contaminated clothing.

8. What steps should you have taken if you had spilled the nitric acid on your hand rather than on your clothing?
Wash hands. Neutralize acid using base, and tell teacher.

9. What are the most common student injuries in the chemistry lab, and how can they be prevented?
Chemical spills, being careful and aware of surroundings.
Cuts from broken glass, examine glassware before use, never pick up broken glass using bare hands.
Burns, test heat level using back of hand.

10. Where should reactions involving the evolution of toxic gases be performed?
A fumehood.

11. Why should you immediately clean up any chemical spills in the laboratory?
They could get dangerous as the water diluting the chemical evaporates.

12. Why should you never deviate from the published procedure for an experiment?
If you're attempting to follow the procedure to achieve something, then deviating means you are likely to not achieve the result you want. Plus, boom boom could happen.

13. Why should apparatus always be clamped securely to a metal ring before starting a chemical reaction? It could fall and splash.

14. Why should you never eat, drink, or smoke while you are in the laboratory? Contamination, and more likelihood of accidents.

15. Suppose the experiment you are to perform in a given lab period involves substances that are toxic or corrosive. What should you do ***before*** the laboratory to prepare yourself for using these substances safely? Be aware of its properties, and set up proper safety setups.