

LABORATORY MANAGEMENT

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Science educators have believed that the laboratory is an important means of instruction in science since late in the 19th century. Laboratory instruction was considered essential because it provided training in observation, supplied detailed information, and aroused pupils' interest. Therefore managing laboratory by good instruction is the most important aspect in order to support the activity of science learning. Laboratory instruction is not only an awareness of the basics of presenting, but also a greater understanding of how group work fits within a larger context. Therefore good lab instructors are as follows:

- Both great teachers and great managers. They get their students to understand the importance of the day's activities by first clearly explaining the significance of the activity.
- Always seeking to make experiments and practical problems relevant. In fact some of the best lab instructors turn their experiments into practical problem solving exercises.
- Spend time early in the semester preparing their students to work in groups. They assign them to work within specified roles, to use one another to reach solutions, to, in effect "jigsaw" results by using different lab groups to provide different pieces of the solution "puzzle."
- Offer just enough help, forcing students to solve problems on their own. Finally, great lab instructors have eyes in the back of their head and are always alert for potential problems. They always address safety issues before turning students loose on experiments.

REFERENCES:

1. <http://web.princeton.edu/sites/ehs/labsafetymanual/index.html>
2. <http://www.education.ky.gov/NR/rdonlyres/93A6BCE2-E764-49D8-8712-F7C4BD60CABB/0/SC3SchoolLabManualFinal.pdf>

TASK

Take a look at the picture below. Discuss in group what problem may be caused by this trouble.



QUIZ

Question # 1 (Multiple Answer) Why should contact lenses not be worn in lab?

- A) it is difficult to remove lenses after a chemical splash
- B) the lens is permeable to vapors, which cause irritation
- C) chemicals trapped under lens will cause severe damage
- D) that boy or girl you are trying to get to see you cannot tell the color of your eyes

Question # 2 (Multiple Answer) Which of the following are reasons why we should never use broken or chipped glassware?

- A) it can explode when heated or under pressure
- B) glass cuts are extra dangerous in lab due to chemicals
- C) we always get better results with broken glassware

Question # 3 (Multiple Choice) The correct procedure for combining acid and water:

- A) add acid to large amounts of water
- B) add water to large amounts of acid
- C) always add acid to water, cool and swirl
- D) always add water to acid, cool and swirl
- E) just dump them both together into beaker

Question # 4 (Multiple Choice) Which of the follow should not be a part of the check-out at the end of the lab.

- A) water turned off
- B) gas turned off
- C) aprons ripped off and stuffed, unfolded, into drawers
- D) all equipment cool, clean, and neatly arranged

Question # 5 (Multiple Answer) Which of the following is considered safety equipment for our lab?

- A) spill kit
- B) fire blanket
- C) eye wash
- D) first aid kit
- E) fire extinguisher

Question # 6 (Multiple Choice) Which of the following is not a correct match between type of fire (and fire extinguisher) and the material that would be burning in that type fire:

- A) Type A - large structures like a house
- B) Type B - oil, grease, paint thinners
- C) Type C - electrical equipment
- D) Type D - combustible metals

Question # 7 (True/False) All accidents and/or injuries must be reported to the teacher immediately

- A) True
- B) False

Question # 8 (Multiple Choice) What is the correct procedure for students to follow if a chemical is spilled:

- A) Stand back and advise the teacher of the spill
- B) Run madly about the room
- C) Splash large amounts of water onto the spill
- D) Immediately ask to go to the restroom

Question # 9 (True/False) To eliminate liquids that can flushed down the sink, first run water in the sink, then add small amounts of the liquid, then flush more water afterward.

- A) True
- B) False