

HOW TO SUCCEED IN CHEMISTRY

Many people struggle when learning chemistry because they never develop the particular study habits which are conducive to success in chemistry. The following suggestions should prove invaluable to you.

1. *Read carefully and deliberately.*

The way in which you should read chemistry texts (and take notes) should be quite different from the way you read a history book, newspaper, or a novel. In chemistry, you must read slowly, absorbing each word. It is sometimes necessary to read a discussion, or problem, many times before it begins to "make sense" to you. In some types of reading, such as a novel, it is desirable to skim and read rapidly, because there are usually a few thoughts "sprinkled" among many words. However, in reading chemistry each word or symbol is important, and there are many thoughts condensed into a few statements.

2. *Listen and ask questions in class.*

Many of the finer points, fundamental principles, and modes of thought will be developed in class. You must pay careful attention to these discussions in order to really understand what is going on. Many teachers will stop and ask if anyone has any questions. When a teacher does this, it is a clue that the teacher thinks that the material just covered was difficult, and is expecting students to have trouble with it. This is an invitation from the teacher to the students to go over the material again, or in a different way. If the teacher gets no feedback at this point, he or she will proceed to the next topic whether you are ready or not. So if you don't understand, be sure to speak up.

3. *Take time to reflect.*

To learn chemistry well you must take time to do some reflective thinking about the material covered during the previous few days or weeks. It takes time for some ideas in chemistry to "soak in." You may have to live with them awhile and do some reflective thinking about them before they become a part of you.

4. *Work the Problems*

Paying attention in class is important, reading the book is important, but nothing is as important as working the problems. Practice, practice, practice by working as many problems as you can. The number one reason why students do not succeed in chemistry is that they do not work (and understand) enough problems. Be very careful not to lean too heavily on the solution guides provided in class. They are intended to be an aid if you get stuck, but too many students use them as a starting place. Before you move on to the next problem set, be sure that you can do that type of problem from beginning to end, and without having to peek at the solution guide along the way.

5. *Understand the Problems, Forwards and Backwards*

When the teacher is working problems on the board, you may be tempted to think, "Oh, that's easy. I understand that, so I don't need to do those problems." Don't be fooled! Watching the teacher (or your tutor, or your friends) work a problem is not the same as doing it yourself. Chemistry requires a lot of practice, and you have to do it yourself. As you work each problem, have a clear idea of where you are going (what you are solving for). List what you are given to start with, then clearly show each step of your calculations or thought processes, and always label all units. Then, when you study your work later, you will have no trouble figuring out how or why you did what you did. Explain how to do the problem to someone else. If you can explain it to someone else so that they understand it, you can feel confident that you really do understand it yourself.

6. *Take time to do your work and do it on time.*

You must do your homework regularly. No concessions will be made to anyone failing to do his or her homework. Do not wait until the last minute to do your work and then rush through it. If you spend just enough time on your lesson to get the “answers” and do not take time to really understand the underlying concepts, you will soon become confused. Chemistry is a lot of fun as long as you are “on top of it” and understand what is going on; otherwise it can be very frustrating.

7. *Know when to ask for help.*

Try to complete each assignment without assistance. If you seek help needlessly, either from your teacher or a classmate, you will not gain the maximum benefit from your work. It takes exercise to become strong; you cannot do it through someone else’s exercise. However, you must ask questions when necessary. Sometimes little things cause considerable confusion. Do not be afraid that your questions may sound “dumb;” the only “dumb” action is to fail to ask about a topic that you have really tried to grasp and still do not understand. Some people seek help too soon and some wait too long. You will have to use good common sense in this matter.

8. *Persevere.*

Recognize from the start that chemistry is a subject that requires a lot of time and work, and become committed to investing both the time and effort that the course demands. You have to be an active, aggressive student to do well in chemistry. Do not become frustrated if a topic or problem completely baffles you at first. Stick with it. Even though chemistry is difficult for many people, you can understand it if you work at it. And remember that learning chemistry is your own responsibility; the teacher will help you out as much as possible, but the teacher can't learn it for you.

9. *Be neat and accurate*

Neatness and accuracy are habits that will save you many headaches in any field of endeavor. Most people must deliberately practice them before they become habitual. Keep your work organized. For example, have a special section in your notebook for chemistry and keep today’s homework paper in that same place in this section every day so that you can turn to it immediately.

10. *Other tips for success.*

- Learn to identify that which you know and that which you need to work on.
- Reread old material carefully.
- Find a dull, quiet place to work such as the kitchen table, the corner of the hall floor
- Get yourself organized (do the hardest or least liked homework first.)
- Be independent – begin to fight – don’t be passive or expect others to do it for you (teacher, tutor, parent)
- Begin today!
 - Read the text (with pencil and paper, not just your eyes.)
 - Start a notebook.
 - Star (*) difficult problems or passages in the margin.
 - Do your own digging and working – and finish it.
 - Do a short, concise outline of the current chapter.

Learning chemistry is not an activity for the intellectually lazy; it requires a strong, steady effort. There is no other successful way. Neither is chemistry a spectator sport; you must become actively involved. Do not expect to sit idly by and watch your teacher do the work. This may keep the teacher in good condition, but it won’t do you much good.

YOU CAN DO IT!