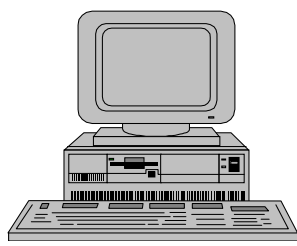




Cornerstone Chemistry

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From the Editor's Desk



For first-time Chemistry students, some likely questions at the beginning of the course are: What is Chemistry? Why take Chemistry classes anyway? How might I use this knowledge in the future? Other questions they may ask include: Will we be doing a lot of experiments? Can you show us how to make a bomb?

The astute teacher will surely give a comprehensive definition of Chemistry at the onset of the course. Also s/he would discuss, in general terms, the applications of Chemistry in every day life. In this way students get an overview of what is involved in this field of study. More importantly, they would recognize the usefulness of the subject because of its practical applications.

The nature of early Chemistry lessons allows for experimentation, which does not require too many sophisticated pieces of equipment or uncommon chemicals. In fact some experiments may be done at the kitchen table/countertop, utilizing ordinary household substances and utensils. Consequently, quite a number of experiments may be carried out, whether or not there is to a laboratory.

Sneak Preview

Now that your appetite has been whet, it's time to focus on what's ahead in Chemistry for this year. Following are the 'hot topics' designed to unleash the chemist in all of you:

- ▶ What is Chemistry and how is it applied?
- ▶ The Three States of matter
- ▶ Pure and Impure Matter
- ▶ Purifying Matter: Separating Mixtures
- ▶ Atomic Structure
- ▶ Chemical Bonding
- ▶ Introducing the Periodic Table
- ▶ The Chemical Equation



What you already know

Are you aware that you have already done some Chemistry? Well it's true; you touched on some of the ideas in your Integrated Science course at the Form 1 and Form 2 levels. Look again at the hot topics above. What do you notice? Are any of them familiar? Sure, at least two or three.

So why is that important? Well it is important because learning is always easier if

one can begin with what is already known. In other words, your previous knowledge is important as a reference point for new lessons.

However, do not be worried that you may not remember ideas from past lessons. *Your teacher should be able to help you bridge any gaps. In fact it is imperative for that to occur in order to progress to new learning.*

What you can do to help yourself

You can do quite a bit in aid of your own learning of Chemistry. The first place to start is to develop a positive attitude towards the subject. This newsletter is geared towards assisting you to do that.

Another suggestion is that you review information such as the symbols and formulae of common elements. Moreover, it is advisable that you begin to memorize the *atomic numbers* of the first twenty elements in the **Periodic Table*. This will allow you to understand more quickly some of the concepts that shall be introduced later.

Maximizing your instruction time is yet another way to enhance your learning experience. Be attentive in class, participate actively, ask questions to clarify ideas and do homework/projects diligently.

Do not confine your learning of chemistry to what is done during lessons or to the material covered in your coursework. Recognize that there are many opportunities to learn more and to dig deeper. Your teacher may not have all the answers but is able to direct and assist you in discovering them.

The AGS library has a subscription to **Scientific American** magazine. This is a good place to look for in-depth information on particular topics. There are also vast resources available on the Internet, in multimedia formats, so the possibilities are endless.

Maintaining the knowledge gained

It is very important that the knowledge gained from your coursework be maintained. *In a very real sense, the basic facts that you are exposed to at this level form the cornerstone of your future learning in Chemistry.* When a lesson is taught the information needs to be kept and used to make connections to other

ideas that follow later on. Sometimes revision becomes necessary, especially when faced with a comprehensive exam, such as the end of year exam at AGS.

A fun way of refreshing the memory with key facts in Chemistry is by solving puzzles. These may be comprised of questions on either general or specific topics.

The following puzzle reviews your first unit of work. Have a go at solving it....

The Three States of Matter

Across		Down	
3. another name for hydrochloric acid	16. movement of fluid particles form area of high concentration	1. gas to liquid	14. occurs via a semi-permeable membrane
8. easily converted to a gas/vapour	9. the inter-particle force holding solid particles together	2. requires heat	15. composed of nitrogen and hydrogen
10. particles of a liquid escaping the surface	11. freezes to a white solid	4. releases heat	
12. solid to liquid		5. a liquid being converted to a vapour	
		6. a solid changing directly to a gas and vice versa	
		7. liquid to solid	
		9. particles arranged in a fixed pattern	
		13. clustered particles	

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* a table in which elements are arranged by atomic number, etc.