A decorative graphic on the left side of the page features three balloons in shades of green, blue, and purple, each with a streamer and several yellow triangular streamers radiating from it.

Chemistry

New Senior Secondary Curriculum

NSS Chemistry Curriculum Structure and Time Allocations

Compulsory Part	(198 hours)
Elective Part	(52 hours)
School-based Assessment (SBA)	(20 hours)

Compulsory Part

- Planet earth
- Microscopic world I *
- Metals
- Acids and bases
- Fossil fuels and carbon compounds
- Microscopic world II
- Redox reactions, chemical cells and electrolysis
- Chemical reactions and energy
- Rate of reaction
- Chemical equilibrium
- Chemistry of carbon compounds
- Patterns in the chemical world

F3 Chemistry Curriculum

- **1st Term**

- Atomic Structure
- Periodic Table

- **2nd Term**

- Chemical Bonding
 - Ionic Bond
 - Covalent Bond
- Mole Calculation

Microscopic
World I

Elective Part

- Industrial chemistry
- Materials chemistry
- Analytical chemistry

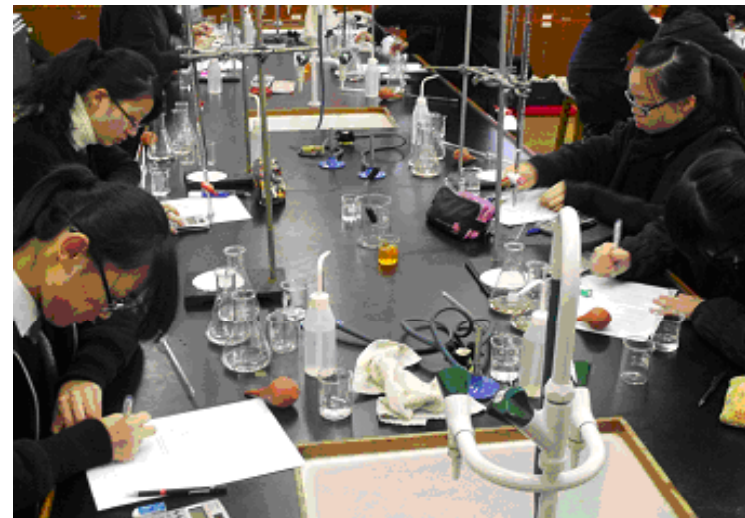
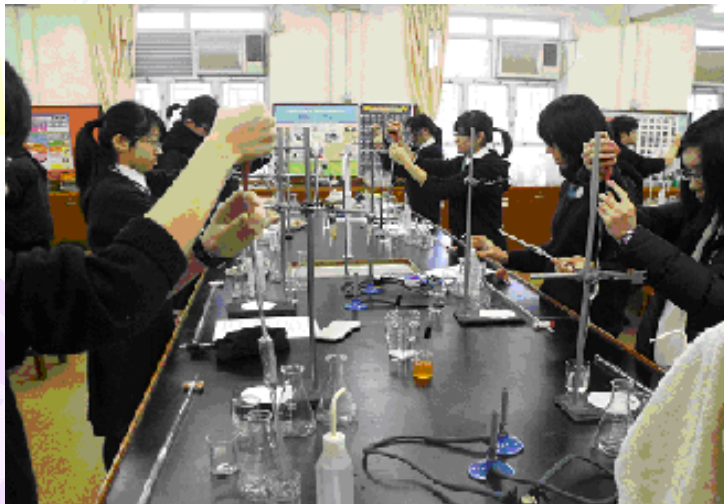
**** study any 2 out of 3**

(Our school opt for Industrial chemistry & Analytical chemistry)

School-based Assessment (SBA)

- Compulsory for all school candidates
- Assessment will begin from S5
- Practical related tasks only
- Different areas involved
 - Volumetric Analysis (VA)
 - Qualitative Analysis (QA)
 - Other Experiments (EXPT)
- Individual work & group work are required

SBA



Assessment

	Content	Weighting	Time
Written Exam	Paper 1 Compulsory Part	60 %	2.5 hours
	Paper 2 Elective Part	20 %	1 hour
SBA	Practical work	20 %	continuous assessment

Is NSS Chemistry easy or difficult ?

The subject require students to

- **memorize**
 - ▶ quite a number of facts (e.g. symbols, formulae, equations, observations etc)
- **master abstract concepts** (e.g. electron, atom, molecule, intermolecular force, reaction rate, chemical equilibrium, etc.)
- **understand and apply**
chemistry concepts & knowledge
- **do chemistry calculations**

Memorize a number of facts

First 20 elements – names & symbols

Name	Symbol	Name	Symbol
Hydrogen	H	Sodium	Na
Helium	He	Magnesium	Mg
Lithium	Li	Aluminum	Al
Beryllium	Be	Silicon	Si
Boron	B	Phosphorus	P
Carbon	C	Sulphur	S
Nitrogen	N	Chlorine	Cl
Oxygen	O	Argon	Ar
Fluorine	F	Potassium	K
Neon	Ne	Calcium	Ca

Memorize a number of facts

Ionic Compounds – names & formulae

Name	Formula
Sodium chloride	NaCl
Magnesium oxide	MgO
Aluminium nitride	AlN
Potassium sulphide	K ₂ S
Calcium fluoride	CaF ₂
Aluminium chloride	AlCl ₃
Lithium nitride	Li ₃ N
Magnesium nitride	Mg ₃ N ₂
Aluminium oxide	Al ₂ O ₃



Memorize a number of facts

Chemical reactions and equations

- Reaction between metal and acid



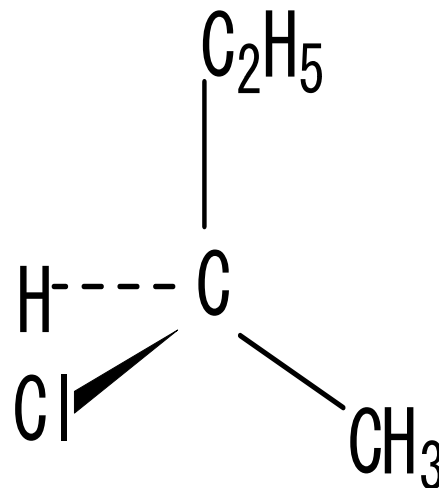
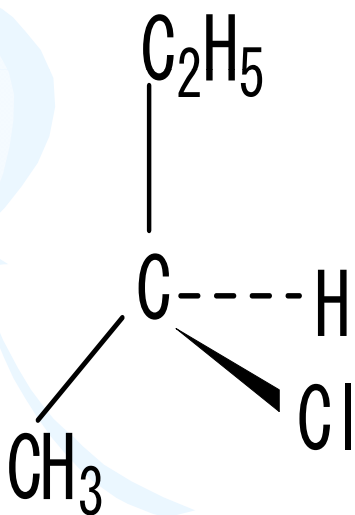
- Redox reaction



Master abstract concepts

Question

The **three-dimensional structures** of a compound are shown below.



What is their relationship?

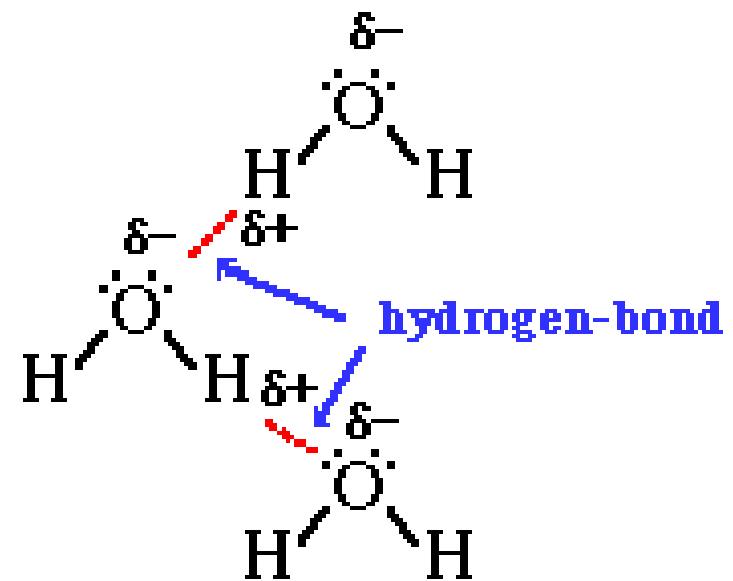
Non-superimposable mirror images

understand and apply concepts & knowledge

2013 HKDSE Paper IB (1c)

Explain, from **molecular level**, why the density of ice is lower than that of water.

- Formula of Water: H_2O
- Shape of water (H_2O) molecule: V shaped
- Force between water (H_2O) molecule: "Hydrogen Bond"



Do Chemistry Calculations

1. Relative atomic mass

There are two isotopes of chlorine and the information about these two isotopes are shown below.

Isotopes	Relative abundance
^{35}Cl	75%
^{37}Cl	25%

Calculate the **relative atomic mass** of chlorine.

Do Chemistry Calculations

2. Mole Calculations $\text{Mole} = \frac{\text{mass}}{\text{formula mass}}$

Question

Which of the following containing
greatest number of mole of ions?

- A. 58.5g Sodium chloride
- B. 94g Potassium oxide
- C. 132.5g Aluminium chloride
- D. 109g Magnesium nitride

Greatest number of mole of ions ?

Mole = mass / formula mass

Name	Formula	Mass(g)	Formula Mass (sum of relative atomic mass)	Mole
Sodium chloride	NaCl	58.5	$23 + 35.5 = 58.5$	1
Potassium oxide	K ₂ O	94	$39 \times 2 + 16 = 94$	1
Aluminium chloride	AlCl ₃	132.5	$27 + 35.5 \times 3 = 132.5$	1
Magnesium nitride	Mg ₃ N ₂	100.9	$24.3 \times 3 + 14 \times 2 = 100.9$	1

Do Chemistry Calculations

Mole Ratio

Formula	Cation & Anion	Mole	Mole of Cation	Mole of Anion	Mole of Ions (cation + anion)
NaCl	Na ⁺ Cl ⁻	1	1	1	1 + 1 = 2
K ₂ O	2K ⁺ O ²⁻	1	1x2	1	2 + 1 = 3
AlCl ₃	Al ³⁺ 3Cl ⁻	1	1	1x3	1 + 3 = 4
Mg ₃ N ₂	3Mg ²⁺ 2N ³⁻	1	1x3	1x2	3 + 2 = 5



To certain extent, NSS Chemistry is
demanding !

- Students with the following characters are suitable to study NSS Chemistry:
 - ✓ diligent (take initiative to work hard)
 - to understand abstract concepts
 - to memorize quite a lot of facts
 - ✓ interested in calculations
- Quiz & test are regular & frequent (weekly or biweekly)



The End