Enseignement secondaire		
Classes internationales		
	Régime anglophone	
Chimie		
Programme		
6IEC		

Leçons hebdomadaires: 2
Langue véhiculaire: anglais
Nombre minimal de devoirs par trimestre: 1

Theory

	Topic	**Teaching hours**	**Contents**	**Methods**
1	Materials, elements and compounds	11	Sorting data Air as a mixture Earth's elements	- Drawing, using and interpreting tables, bar charts, pie charts and scatter graphs - Recognise the difference between atoms and molecules - Identify elements, mixtures and compounds from descriptions and particle diagrams - Chemical symbols for common elements - Different elements have different properties - Resources of elements are limited

			Metals and non-metals	- Describe and identify metals and non-metals by their properties - Relate the use of an element to its properties - Observe changes when a chemical reaction takes place
			Making and naming compounds	- Name simple compounds
			Chemical reactions	- Use and understand word equations for chemical reactions - Decomposition reactions
2	Combustions	12	Engines, Burning fuels.	- Describe the reactions of hydrogen and hydrocarbons with oxygen. - Use word equations to model combustion reactions.
			Oxidation.	- Describe oxidation reactions of metals and non-metals.
			Conservation of mass.	- Explain changes in mass seen in oxidation reactions (law of conservation of mass).
			Fire safety and fire extinguishers.	- Use the fire triangle to explain how to control a fire. - Identify hazard symbols for substances likely to cause fire.
			Air pollution.	- Describe pollutants that are formed by burning fuels. - Explain how these pollutants cause problems and how their effects can be reduced.
			Global warming.	- Describe the greenhouse effect and how it is caused - Explain how human activity may be causing global warming. - Explain how global warming can be reduced

			Information and explanation text. Reducing pollution. Fireworks.	- Identify information text and explanation text. - Use the structure of a text to help with answering questions. - Describe how pollution caused by cars can be reduced in the future.
3	The periodic table.	10	Dalton's atomic model.	- Describe Dalton's atomic theory. - Describe elements using physical properties.
			Chemical properties.	- Write and identify the chemical symbols for elements. - Explain the difference between physical and chemical changes and properties - Use atomic theory to explain what happens during chemical reactions. - Write and interpret chemical formulae.
			Mendeleev's table.	- Use the periodic table to find elements with similar properties. - Describe some typical properties of alkali metals, halogens and noble gases. - Describe how the periodic table is arranged.
			Physical trends.	- Explain melting, freezing and boiling points, and use them to predict the state of a substance. - Describe and identify trends in physical properties within the periodic table.
			Chemical trends.	- Identify metals and non-metals by their properties and position in the periodic table. - Describe the reactions of some elements with water and oxygen.

				- Identify trends and make predictions about chemical properties using the periodic table. (Use of alkali metal compounds in fireworks, Firework ban)
4	Materials and their uses.	12	Building up.	- Name different materials used in building different structures (houses, tall structures). - Explain why some materials are better suitable for building than others.
			Metal properties.	- Describe some common properties and uses of metals - Write word equations for the reactions of metals and non-metals. - Describe what a catalyst is and some uses of catalysts.
			Corrosion.	- Describe what happens during corrosion and rusting. - Explain how metals can be protected from corrosion. - Identify the products and reactants using a symbol equation.
			Metals and water.	- Describe the reactions of metals with water. - Place metals in order of reactivity. - Write word and symbol equations for reactions.
			Metals and acids.	- Describe the reactions with acids. - Place metals in order of reactivity. - Write word and symbol equations for reactions.
			Pure metals and alloys.	- Explain what alloys are and why they are used. - Use models to explain the properties of alloys.

			Metals in the art.	- Identify pure substances by their melting points and boiling points.

Practicals

	Topic	**Teaching hours**	**Contents**	**Methods**
1	Safety in the lab.	2	Hazards Controlling risks.	- Recognize some common hazard symbols. - Explain why hazard symbols are necessary. - Plan and explain safety precautions. - Recognize hazards and explain how the risks can be controlled. - Identify hazards when heating and describe how to reduce risks.
2	Metals and non-metals	2	Properties of non-metals and metals	Use experiments to show differences - Melting temperature - Conductivity of heat (with different metals) - Conductivity of electricity - Density
3	Combustions.	5	Combustions in air and in pure oxygen. Fair testing. (Independent variable, dependent variable, control variables. Conservation of mass. Fireworks	- Combustion of hydrocarbons (candle). - Test for carbon dioxide, - Test for water. - Combustion of metals and non-metals. - Identify independent and dependent variables in a test. - Identify control variables in an experiment and describe how to control it. - Explain why it is important to carry out a fair test. - Production of sparklers.

4	Analysis of data.	3	Anomalous results. Describing materials Quality evidence.	- Explain what is meant by an anomalous result (outliers). - Identify anomalous results and the range of readings in data. - Suggest reasons for anomalous results/outlier. Describe substances accurately using adjectives. - Identify and explain adjectives used in science. - Explain what it means by accurate data. - Identify data that is, or is not, reliable, repeatable or reproducible. - Explain how to improve the quality of data collected during an investigation.
5	Physical and chemical properties.	4		- Physical and chemical change. - Melting and boiling points of different substances. - Reaction of metals with acids. - Test for hydrogen. - Different factors influencing rusting of iron.