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| **Enseignement secondaire** | | |
| **Classes internationales** | | |
| | **Régime anglophone** | |
| **Chimie** | | |
| **Programme** | | |
| **7IEC** | | |

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| Leçons hebdomadaires: 1,5 |
| Langue véhiculaire: anglais |
| Nombre minimal de devoirs par trimestre: 1 |

# Theory

| | Topic | Teaching hours | Contents | Methods |
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| 0 | Introduction | 2 | Explain chemistry | |
| 1 | Solids, liquids and gases. | 4 | State of matter | - Describe, give properties and define solid, liquid and gas.<br>- Identify materials that are difficult to classify as solids, liquids or gases. |
| 2 | Mixtures and separations | 8 | Mixtures | - Classify and define different mixtures (suspension, emulsion, colloid, solution).<br>- Define solubility, solvent, solute,<br>- Describe how soluble substances can form solutions.<br>- Identify the solute and solvent in a solution.<br>- Describe the effects of different variables (solvent/temperature) on solubility. |

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| | | | Separation | - Introduction to separation methods, use diagrams to draw apparatus (drawings should be done in 2D, use ruler and pencil)<br>- Separation liquids-solids (cleaning waste water, filtration, settlement)<br>- Describe differences between evaporation and boiling. (Production of table salt). Explain how distillation can be used to separate a solvent from a solution. (Desalination of sea water) |
| 3 | Acidic and alkaline solutions | 8 | Indicators<br><br>Acidity and alkalinity.<br><br>Neutralisation. | - Name examples of indicators made from plants.<br>- Describe how indicators can be used to test for acidic, alkaline or neutral solutions.<br>- Name some common examples of acids and alkalis.<br>- Describe the pH scale and how it is useful. Describe how pH can be measured.<br>- Describe what happens during neutralisation.<br>- Write word equation for neutralisation reactions.<br>- Explain the pH changes taking place during neutralisation.<br>- Describe and explain some everyday neutralisation reactions. |

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| 4 | Solids, liquids and gases | 8 | States of matter | - Name the different states of matter<br>- Describe the properties of the states<br>- Identify materials difficult to classify |
| | | | Hypotheses and theories | - Identify scientific questions, hypotheses and predictions<br>- Describe how to develop a hypothesis into a theory<br>- Explain how evidences are used to support a given theory |
| | | | Matter is made of particles, states of particles | - Recognise that all matter is made up of particles<br>- Describe, draw and recognise the arrangement of particles in the 3 states |
| | | | Brownian motion | - Use the particle theory to explain the properties<br>- Explain Brownian motion |
| | | | Diffusion | - Unit conversations, (nm, μm, mm, m)<br>- Explain diffusion and its effects<br>- Explain the different rates for diffusion |

# Practical work

| | **Topic** | **Teaching hours** | **Contents** | **Methods** |
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| 1 | Safety in the lab. | 1 | Hazards<br><br><br><br><br>Controlling risks. | Recognize some common hazard symbols.<br>Explain why hazard symbols are necessary.<br>Recognize some common acids.<br>Plan and explain safety precautions.<br>Recognize hazards and explain how the risks can be controlled. |
| 2 | The Bunsen burner | 2 | Safety when heating. | Describe how a Bunsen burner is used.<br>Identify hazards and describe how to reduce risks. |
| 3 | Lab equipment | 1 | Glass material | Show different lab equipment to the students, make drawings of equipment using a pencil and a ruler |
| 4 | Separation methods 1 | 2 | Evaporation<br><br><br><br>Sedimentation<br>Filtration | Describe how solutes can be separated from a solution by evaporation.<br>Separate a salt-water mixture.<br><br>Separate a sand-water mixture.<br><br><br>Structure a method in a clear way.<br>Use diagrams to draw apparatus. |
| 5 | Solutions | 1 | | Work out graphs on solubility.<br>(Solubility of a salt at different temperatures) |
| 6 | Separation methods 2 | 2 | Chromatography<br><br><br><br><br>Distillation | Define chromatography and describe how it can be used to identify substances in a mixture.<br>Paper chromatography with different inks.<br>Distillation of wine. |

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| 7 | Acidic and alkaline solutions. | 2 | Indicators<br><br><br><br>pH<br>Neutralisation | Production of red cabbage indicator.<br>Reaction of red cabbage indicator with different solutions and products from daily life.<br>Measurement of pH using test paper.<br>Preparation of sodium chloride from a neutralisation. |
| 8 | States of matter | 1 | Compare states | Experiments that show the different properties of the 3 states (diffusion, compressibility, fluidity…) |
| 9 | Waste | 1 | Separate different wastes | Show how different plastic material could be separated (by density), metals |
| 10 | Data analysis | 2 | Make different kinds of graphs | Use experiments to draw graphs<br>- Heating water (t° versus time)<br>- Burning candle experiment<br>- … |