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| Subject | IB Chemistry SL/**HL** |
| HL / SL cohort | MIxed |
| Main Text book | Pearson Baccalaureate IB Chemistry SL or HL |

**Christmas Term**

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| Week | Topics covered | TOK | Connections | Recommended Extra Reading |
| 1 | Introduction to the IB Course  1.1 Introduction to the particulate nature of matter and chemical change  \*1.2 The mole concept | How does the knowledge we gain from the natural world depend on the questions we ask and the experiments we perform? |  |  |
| 2 | \*1.2 The mole concept  \*1.3 Reacting masses and volumes  11.1 uncertainties and errors in measurement  11.2 graphical techniques | Chemical equations are the universal language of chemistry. To what extent do they help or hinder the pursuit of knowledge?  To what extent is mathematics effective in describing the natural world? | Experimental error in Biology and Physics  Graphical techniques in Maths |  |
| 3 | 2.1 The Nuclear Atom  2.2 Electron Configuration  **12.1 Electrons in Atoms** | What ways of knowing can we use to grasp the magnitude of Avogadro’s number even though it is beyond the scale of our everyday experience?  What role do models play in our understanding of the world and how effective are they? |  |  |
| 4 | 3.1 The Periodic Table  3.2 Periodic Trends | Inductive reasoning was used to construct the periodic table. Is inductive reasoning ever a reliable source of knowledge? |  |  |
| 5 | 3.2 periodic trends  **13.1 First Row D Block**  **13.2 Coloured Complexes** | What is the role of practical work in helping develop understanding? |  |  |
| 6 | Assessment Week |  |  |  |
| 7 | 4.1 Ionic bonding and Structure  4.2 Covalent Bonding  **14.1 Further aspects of covalent bonding** | People often find physical models of bonding structures to be helpful does this suggest different qualities to the knowledge we acquire in different ways? |  |  |
| 8 | 4.3 Covalent Structures  4.4 Intermolecular Forces  **14.2 Hybridisation** | Using Graphene as an example what is the role of imagination in helping direct the research of scientists? |  |  |
| 9 | 4.4 Intermolecular Forces  4.5 Metallic Bonding  **14.2 Hybridisation** | Which ways of knowing do we use to interpret evidence gained through the use of technology? |  |  |
| 10 | \*5.1 Measuring Energy Changes  **15.1 Energy Cycles** | To what extent is certainty attainable within areas of knowledge eg laws of thermodynamics? |  |  |
| 11 | \*5.1 Measuring energy changes  5.2 Hess’s Law  **15.1 Energy Cycles** | What is the role of intuition in the pursuit of scientific knowledge? |  |  |
| 12 | 5.3 Bond Enthalpies  **15.2 Entropy and Spontaneity** | To what extent does a specialised vocabulary help or hinder the growth of knowledge? |  |  |
| 13 | Assessment Week |  |  |  |
| 14 | \*6.1 Collision theory and rates of reaction  **16.1 Rate expression and reaction mechanism** |  |  |  |
| 15 | \*6.1 Collision theory and rates of reaction  **16.1 Rate expression and reaction mechanism** |  |  |  |
| 16 | \*6.1 Collision theory and rates of reaction  **16.2 Activation energy** |  |  |  |
| 17 | \*6.1 Collision theory and rates of reaction  **16.2 Activation energy** |  |  |  |
| 18 | Assessment Week |  |  |  |
| 19 | 7.1 Equilibrium  **17.1 The Equilibrium Law** |  |  |  |
| 20 | 7.1 Equilibrium  **17.1 The Equilibrium Law** |  |  |  |
| 21 | 8.1 Theories of acids and bases  **18.1 Lewis Acids and Bases** |  |  |  |
| 22 | 8.1 Theories of acids and bases  **18.1 Lewis Acids and Bases** |  |  |  |
| 23 | \*8.2 Properties of acids and bases  **18.2 Calculations involving Acids and Bases** |  |  |  |
| 24 | Assessment Week |  |  |  |
| 25 | \*8.3 The pH Scale  **18.2 Calculations involving Acids and Bases** |  |  |  |
| 26 | \*8.3 The pH Scale  **18.3 pH curves** |  |  |  |
| 27 | 8.4 Strong and weak acids and bases  **18.3 pH Curves** |  |  |  |
| 28 | 8.5 Acid deposition |  |  |  |
| 29 | Assessment Week |  |  |  |
| 30 | 9.1 Oxidation and Reduction |  |  |  |
| 31 | 9.1 Oxidation and Reduction  \*9.2 & **19.1** Electrochemical Cells |  |  |  |
| 32 | \*9.2 & **19.1** Electrochemical Cells |  |  |  |
| 33 | End Of Year Exams |  |  |  |