 Year 11 – chemistry scope and sequence

This document references the [Chemistry Stage 6 Syllabus](https://syllabus.nesa.nsw.edu.au/chemistry-stage6/) © 2017 NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales.

Term 1

| Weeks | Weeks 1-2 | Week 3 | Week 4 | Weeks 5-6 | Weeks 7-8 | Week 9 | Week 10 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Module | Module 1: Properties and structure of matter | Module 1: Properties and structure of matter | Module 1: Properties and structure of matter | Module 1: Properties and structure of matter | Module 1: Properties and structure of matter | Module 2: Introduction to quantitative chemistry | Module 2: Introduction to quantitative chemistry |
| Content | Properties of matter | Atomic structure and atomic mass | Atomic structure and atomic mass | Periodicity | Bonding | Chemical Reactions and Stoichiometry | Mole Concept |
| Inquiry question | How do the properties of substances help us separate them? | Why are atoms of elements different from one another? | Why are atoms of elements different from one another? | Are there patterns in the properties of elements? | What binds atoms together in elements and compounds? | What happens in chemical reactions? | How are measurements made in chemistry? |
| Outcomes | CH11/12-2  CH11/12-3  CH11/12-4  CH11/12-7  CH11-8 | CH11/12-2  CH11/12-3  CH11/12-4  CH11/12-7  CH11-8 | CH11/12-2  CH11/12-3  CH11/12-4  CH11/12-7  CH11-8 | CH11/12-2  CH11/12-3  CH11/12-4  CH11/12-7  CH11-8 | CH11/12-2  CH11/12-3  CH11/12-4  CH11/12-7  CH11-8 | CH11/12-2  CH11/12-4  CH11/12-6  CH11-9 | CH11/12-2  CH11/12-4  CH11/12-6  CH11-9 |
| Assessment | N/A | N/A | Depth study 3 hours | Depth study 3 hours | Depth study 3 hours | N/A | N/A |

Term 2

| Weeks | Week 1 | Weeks 2-3 | Weeks 4-5 | Weeks 6-7 | Week 8 | Week 9 | Week 10 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Module | Module 2: Introduction to quantitative chemistry | Module 2: Introduction to quantitative chemistry | Module 2: Introduction to quantitative chemistry | Module 3: Reactive chemistry | Module 3: Reactive chemistry | Module 3: Reactive chemistry | Module 3: Reactive chemistry |
| Content | Mole Concept | Concentration and Molarity | Gas Laws | Chemical Reactions | Predicting Reactions of Metals | Predicting Reactions of Metals | Predicting Reactions of Metals |
| Inquiry question | How are measurements made in chemistry? | How are chemicals in solutions measured? | How does the ideal gas law relate to all other Gas Laws? | What are the products of a chemical reaction? | How is the reactivity of various metals predicted? | How is the reactivity of various metals predicted? | How is the reactivity of various metals predicted? |
| Outcomes | CH11/12-2  CH11/12-4  CH11/12-6  CH11-9 | CH11/12-2  CH11/12-4  CH11/12-6  CH11-9 | CH11/12-2  CH11/12-4  CH11/12-6  CH11-9 | CH11/12-2  CH11/12-3  CH11/12-4  CH11-10 | CH11/12-2  CH11/12-3  CH11/12-4  CH11-10 | CH11/12-2  CH11/12-3  CH11/12-4  CH11-10 | CH11/12-2  CH11/12-3  CH11/12-4  CH11-10 |
| Assessment | N/A | N/A | N/A | N/A | N/A | Practical assessment | N/A |

Term 3

| Weeks | Weeks 1-2 | Weeks 3-4 | Weeks 5-7 | Week 8 | Week 9 | Week 10 |
| --- | --- | --- | --- | --- | --- | --- |
| Module | Module 3: Reactive chemistry | Module 4: Drivers of reactions | Module 4: Drivers of reactions | Module 4: Drivers of reactions | N/A | N/A |
| Content | Rates of Reactions | Energy Changes in Chemical Reactions | Enthalpy and Hess’s Law | Entropy and Gibbs Free Energy | N/A | N/A |
| Inquiry question | What affects the rate of a chemical reaction? | What energy changes occur in chemical reactions? | How much energy does it take to break bonds, and how much is released when bonds are formed? | How can enthalpy and entropy be used to explain reaction spontaneity? | N/A | N/A |
| Outcomes | CH11/12-2  CH11/12-3  CH11/12-4  CH11-10 | CH11/12-1  CH11/12-5  CH11/12-6  CH11/12-7  CH11-11 | CH11/12-1  CH11/12-5  CH11/12-6  CH11/12-7  CH11-11 | CH11/12-1  CH11/12-5  CH11/12-6  CH11/12-7  CH11-11 | N/A | N/A |
| Assessment | N/A | N/A | N/A | N/A | N/A | Formal written examination |