

Year 9 C2: The periodic table. Chemistry – Science Faculty

Rationale and Context of Unit:	Core curriculum content:	Tier 2 & Tier 3 vocabulary explicitly taught:
<ul style="list-style-type: none"> • In this chapter, students will learn about the development of the periodic table, including the work of Dalton, Newlands, and Mendeleev. Within this, students should have built upon their understanding of the development of scientific models from <i>C1 Atomic structure</i>. Students should understand how each stage in the development of the periodic table was facilitated by new evidence becoming available. They should also be able to identify the importance of an inherent pattern to the elements and how this guided Mendeleev’s thinking. • Students should also develop their understanding of electronic structures from <i>C1 Atomic structure</i>, and apply this to the arrangement of the periodic table and the chemical properties of Group 0, Group 1, and Group 7 elements. They should also be able to identify trends in properties and reactivity, and higher-tier students should be able to explain these in terms of the electronic structure of the elements. • AQA GCSE Chemistry: 4.1.2 	<ul style="list-style-type: none"> • Development of the periodic table • Electronic structures and the periodic table • Group 1: the alkali metals • Group 7: the halogens • Explaining trends • (Separate science) The transition elements 	<ul style="list-style-type: none"> • Reactivity • Electrostatic • Relative atomic mass • Trend

Challenge and Support:	World wide learning/ links to 21 st century:	Cultural capital/ Industry/ Enrichment:
<ul style="list-style-type: none"> Explaining how differences between Mendeleev and Newlands periodic table models led to one being accepted and the other rejected by the scientific community. Drawing electronic configuration diagrams of different elements to show patterns down groups in the periodic table. Extended writing task to explain the difference in patterns of reactivity as you descend different groups of the periodic table. 	<ul style="list-style-type: none"> Understanding how the periodic table allows chemists to make predictions about new elements that are yet to be discovered. New elements have recently been discovered added to the periodic table, understanding of their structure was present before their discovery due to this model. The periodic table demonstrates that science is a global effort, improved by generations of scientists building upon knowledge and understanding obtained by the work of those that came before. While Mendeleev is credited with creating the modern table it has been revised with new discoveries. 	<ul style="list-style-type: none"> The periodic table is an amazing tool that is used in virtually all aspects of chemistry. It provides a reference tool that quickly gives information about all known elements when you understand how to use it.
Historical, Social, Moral, Spiritual, Cultural context:	Cross curricular links/ literacy/numeracy:	Common misconceptions:
<ul style="list-style-type: none"> Mendeleev's periodic table has recently had it's 100th anniversary. This unit gives pupils an overview of the history in the development of this table. 	<ul style="list-style-type: none"> Shared content with physics Literacy opportunities explaining why some models are accepted and others rejected and explaining trends in the periodic table. 	<ul style="list-style-type: none"> Mendeleev made the periodic table in its current state. The periodic table is complete. The bigger an element, the more reactive it is.
Assessment timeline:		
<ul style="list-style-type: none"> regular EPPQs end of unit test EPPQ homework task in lesson questioning and other progress checks 		

Home learning

- *EPPQ homework booklet*

Feedback

- *Students self/peer mark homework booklets and set revision goals based on understanding.*
- *Feedback based on the end of the unit test.*

Length of unit (duration indicated in lessons)

C2.1	C2.2	C2.3	C2.4	C2.5	C2.6 (separate science only)	C2 test
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Unit: C1: Atomic structure, Chemistry