



Greenwood School Autumn Term 2

Curriculum Summary

Subject: Science

Year: 11

Term: Autumn 2

Lesson name	Lesson outline	Online resources	Other resources
Atoms, Elements and Compounds	Define elements and compounds as well as identify them from diagrams. Learn how to name compounds. Interpret chemical formulae, define conservation of mass and apply conservation of mass to equations.	https://classroom.thenational.academy/lessons/atoms-elements-and-compounds-6cv3ge https://classroom.thenational.academy/lessons/chemical-formulae-and-conservation-of-mass-6ngk4c	C1.1 Periodic Table C1.1 Periodic Table colour-in Instructions C1.2 Balancing equations
Separating Mixtures	Identify mixtures, describe the process of filtration and crystallisation, explain how to separate a mixture of a soluble and an insoluble substance. Recap changes in state, describe the method of distillation and explain the process of distillation using the particle model. Describe the method of chromatography and why it's useful, and then interpret chromatograms.	https://classroom.thenational.academy/lessons/mixtures-filtration-and-crystallisation-60u38e https://classroom.thenational.academy/lessons/separation-by-distillation-75jk2r https://classroom.thenational.academy/lessons/separation-by-chromatography-69j3jr	C1.3a Literacy sheet C1.3b Elements, mixtures and compounds
Atomic Structure	The structure of an atom, understand the difference between atomic mass and atomic number. Calculate the number of protons, neutrons, and electrons within an atom.	https://classroom.thenational.academy/lessons/atomic-structure-6cjk8qd https://classroom.thenational.academy/lessons/development-of-the-atomic-model-6crp2t	C1.5 Developing the atomic model C1.6 Atomic structure
Ions, Atoms, Isotopes and Electronic Structures	Define an isotope, compare isotopes and calculate relative atomic mass using isotopic abundances. Describe the contributions of Marie Curie and Frederick Soddy to enhance our understanding of isotopes and the atomic model. Explain why the charge of an atom is neutral. Draw and write the electron configuration of atoms and explain how electron configuration is linked to the group number.	https://classroom.thenational.academy/lessons/isotopes-ccwp4c https://classroom.thenational.academy/lessons/isotopes-case-study-lesson-cguk0t https://classroom.thenational.academy/lessons/electron-configuration-and-the-periodic-table-61jp4c	C1.7 Ideas about ions C1.8 Electronic structures of the first 20 elements
Development of the Periodic Table	Describe the work that led to an increased understanding of what atoms are made of and how this led to changes to the atomic model.	https://classroom.thenational.academy/lessons/development-of-the-atomic-model-6crp2t	C2.1 Mendeleev's predictions
Group 1 and Group 7 Elements and Explaining trends	Describe what happens when metals and non-metals react in terms of electrons. Explain why noble gases don't react and describe and explain the physical property trends of group 0. Describe the trends in the physical properties of group 1 elements, and the reactions of group 1 metals with water and oxygen. Describe and explain the trends in the physical properties of group 7 elements. Describe trends in group 7 reactivity, predict the products and colours changes that occur during displacement reactions of group 7 elements and write word and symbol equations for these displacement	https://classroom.thenational.academy/lessons/why-elements-react-6cuk4d https://classroom.thenational.academy/lessons/group-1-cdk68r https://classroom.thenational.academy/lessons/group-7-c5h36c https://classroom.thenational.academy/lessons/group-7-displacement-69jp4c https://classroom.thenational.academy/lessons/comparing-the-reactivities-of-group-1-and-7-elements-6tjpac	Periodic Table C2.3 Reactions of alkali metals with water C2.4 Boiling Points of the Halogens C2.5 Putting the periodicity into the periodic table

	reactions. Use electron configuration to explain trends in reactivity in both group 1 and group 7 elements.		
Chemistry Revision	Review of atomic structure and introduction to the flashcard method for revision, focus on maths skills such as significant figures and decimal places and introduce the technique of mind mapping and practice constructing one for separation techniques. There will be a focus on command words used in exams.	https://classroom.thenational.academy/lessons/review-part-1-chh62t https://classroom.thenational.academy/lessons/review-part-2-cmvked	
Energy Transfers and Conservation of Energy	Explore the 8 stores of energy, and the 4 pathways in which energy can be transferred and looking at the law of conservation of energy with a focus on conservation of energy during transfers between the kinetic store and gravitational potential energy store.	https://classroom.thenational.academy/lessons/energy-transfers-64upac https://classroom.thenational.academy/lessons/conservation-of-energy-71gk6c	P1.1 Energy Transfers
Energy Stores	Exploring the kinetic energy store and defining what this is, how to calculate it for different objects and how to change the value of the kinetic store, looking at the gravitational potential energy store, and how to calculate values of this and exploring the elastic potential energy store. Look at the factors that affect its value, and how to calculate this.	https://classroom.thenational.academy/lessons/the-kinetic-energy-store-6thpad https://classroom.thenational.academy/lessons/the-gravitational-potential-store-crr6ar https://classroom.thenational.academy/lessons/the-elastic-potential-store-70u62t	P1.3 Bump your grade P1.4 Practical sheet P1.5 Literacy Sheet
Specific Heat Capacity	Exploring the effects of adding energy to a system and its effect on temperature. We will look at how this leads to a definition of the property of specific heat capacity and how to calculate this for different materials. Applying our understanding of specific heat capacity to complete one of the required practicals for the physics part of the course. We will perform an investigation to determine specific heat capacity, and in the process consider effects on uncertainty in our readings.	https://classroom.thenational.academy/lessons/specific-heat-capacity-chhp6r https://classroom.thenational.academy/lessons/specific-heat-capacity-required-practical-69i66r	P2.4 SHC questions
Renewable and Non-renewable energy	Exploring the topic of non-renewable energy resources and their impact on the environment. Exploring the advantages and disadvantages of renewable energy resources. We will then compare their use with non-renewable resources.	https://classroom.thenational.academy/lessons/non-renewable-energy-resources-6rupcd https://classroom.thenational.academy/lessons/renewable-energy-resources-ccu6cr	P3.3 Renewable resources table
Energy review	Revision of the content covered in this topic. There will be a focus on recalling the knowledge from this topic and applying it to different types of questions.	https://classroom.thenational.academy/lessons/energy-review-6rtkgt	