Curriculum Overview: Science
Year group 8

What your child will learn each half term
This overview shows the key topics, skills, and knowledge your child will be learning in **Science** in **Year 8**. It helps families understand what's being taught, how it builds on previous learning, and how you can support your child at home.

- **What we are learning**: The topic or focus for the half term.
- **Key knowledge & skills**: What students should understand and be able to do.
- **How we assess learning**: knowledge checks, practical tasks, written responses and formal assessments.
- **Key words to know**: Vocabulary students will learn and use.

Half term	What we are learning	Key knowledge Key skills	How we will assess learning in this unit	Homework	Key vocabulary for this unit
HT 1	• Atoms, Elements, Compounds • Moving and Breathing	• The structure of an **atom**: **protons**, **neutrons**, and **electrons** • How **atomic number** and **mass number** define elements • The difference between **elements**, **compounds**, and **mixtures** • **Chemical symbols and formulas** • Interpreting and using **chemical symbols and formulas** • Drawing and modelling **atomic structures** • Classifying materials as **elements**, **compounds**, or **mixtures** • Writing and balancing **simple chemical equations** • The structure and function of **muscles**, **bones**, **joints**, and **tendons** • How these systems work together to allow **movement** • The structure and role of the **lungs**, **diaphragm**, and **airways** • The process of **gas exchange** in the lungs	Multiple choice knowledge check applied a few lessons into the topic. This will be out of 10 marks. Testing recall of facts, comprehension and the ability to apply knowledge – this allows for a quick evaluation of understanding of the topic so far. Extended writing task – a 6-mark question on a particular aspect of the topic. Requiring pupils to provide more detailed and structured responses, assessing a pupil's ability to organise their ideas clearly, apply scientific vocabulary accurately and encourage a deeper understanding. An end of unit feedback task – composed of a variety of tasks. Assessing pupils understanding of key concepts and skills covered throughout the topic; testing both recall and application of scientific knowledge. Helping to identify strengths and topics that may need further reinforcement or focus for pupils.	Homework is set weekly on a Monday using a website 'Educake' Quizzes will focus on the topic that is being taught and will encourage learning retrieval from previous lessons. Homework's will be a mix of multiple choice and long answer style questions. Teachers will check homework's weekly and feedback to the class. Parents will be contacted if homework's are not being completed by pupils.	Atoms, Elements and Compounds Element Compound Molecule Proton Neutron Electron **Moving and Breathing** Skeleton Muscle Joint Tendon Ligament Diaphragm Trachea Bronchi Alveoli Oxygen Inhalation Exhalation

HT 2	• Periodic Table • Heat Transfer	• How elements are arranged in order of **increasing atomic number** • The significance of **groups** (vertical columns) and **periods** (horizontal rows) • Shared chemical properties within **element groups** • The difference between **metals and non-metals** • Interpreting and using the **periodic table** to find information • Predicting properties of elements based on their group and period • The three methods of heat transfer. • How materials act as **thermal conductors** or **insulators** • Real-life applications of **heat transfer** in design and safety • Conducting and observing **experiments** on heat transfer • Measuring **temperature changes** accurately	Multiple choice knowledge check Extended writing task An end of unit feedback task	Homework is set on a Monday and is due the following Monday.	**Periodic Table** Periodic table Element Alkali metals Transition metals Halogens Noble gases Heat Transfer Temperature Conduction Convection Radiation Insulator Conductor