Curriculum Assessment Map: Year 7 Science

	Autumn Term	Spring Term	Summer Term
Topic	**Lab skills** **Cells** **Element and periodic table** **Energy**	**Reproduction** **Particle model** **Forces**	**Respiration and movement** **Compounds and mixtures** **Electricity** **Plants** **Space**
Key Learning & Skills	• Pupils will develop their scientific enquiry skills through practical activities a • Pupils will develop their skills in handling various scientific equipment • Pupils will develop their graph skills when analysing practical data • **Pupils will be able to draw and label animal and plant cells** • **Pupils will able to use a microscope to identify cells** • **Pupils will be able to take at a basic level how substances move in and out of cells** • **Pupils will develop their understanding of the periodic table** • **Pupils will be able to identify properties of different elements based on their position in the periodic table** • **Pupils will be able to identify energy types and how this is transferred** • **Pupils will be able to explain what a fuel is and different examples of these**	• **Pupils will be able to label and describe the roles of reproductive organs in both plants and animals** • **Pupils will be able to describe how organisms develop from fertilisation to birth in animals** • **Pupils will be able to describe fertilisation and seed dispersal in plants** • **Pupils will be able to describe different states of matter and the process in changing states** • **Pupils will be able to investigate calculating density of various objects** • **Pupils will be able to describe what gravity and drag is** • **Pupils will be able to describe unbalanced and balanced forces as well as contact and non-contact forces** • **Pupils will be able to investigate Hookes law**	• **Pupils can describe the role of the circulatory system, respiration system and musculoskeletal system** **Pupils will be able to describe aerobic and anaerobic respiration** • **Pupils will be able to describe the processes of various separating techniques** • **Pupils will be able to describe how clean water can be produced** • **Pupils will be able to describe the properties of series and parallel circuits** • **Pupils to be able to compare conductors and insulators** • **Pupils will be able to explain what static electricity is** • **Pupils to be able label a plant and leaf and describe the functions of these parts** • **Pupils will be able to state the equation for photosynthesis and discuss limiting factors** • **Pupils to be able to describe how day, night and seasons are formed** • **Pupils to be able to describe different areas of the solar system including satellites and exploration**
End points	Please see module specific endpoints throughout books	Please see module specific endpoints throughout books	Please see module specific endpoints in books
Informal (*formative*) Assessment	• Live feedback in lessons • Midpoint assessment of a multiple-choice quiz based on content covered. Feedback is provided by a whole class feedback sheet	• Live feedback in lessons • Midpoint assessment of a multiple-choice quiz based on content covered. • Feedback is provided by a whole class feedback sheet	• Live feedback in lessons • Midpoint assessment of a multiple-choice quiz based on content covered. • Feedback is provided by a whole class feedback sheet
Formal (*summative*) Assessment	• End of topic assessment • Feedback is individualised	• End of topic assessment • Feedback is individualised	• End of topic assessment • Feedback is individualised • End of year test

Curriculum encompassing literacy, careers and enrichment as well as interconnectivity with other subjects

Curriculum Assessment Map: Year 8 Science

	Autumn Term	Spring Term	Summer Term
Topic	Chemical reactions Nutrition and health Energy II Acids and alkalis	Ecosystems Sound and light Magnets	Chemistry of the Atmosphere Metals and materials Variation Forces motion and pressure
Key Learning & Skills	• Pupils will be able to describe how to identify chemical reactions • Pupils will be able to describe and wrote word equations for various reaction including exothermic and endothermic reactions and oxidation and thermal decomposition • Pupils will be able to describe the role of catalyst in reactions • Pupils to be able to describe how the effects of lifestyle choices on the body • Pupils will be able to describe the role of the digestive system including various enzymes. • Pupils to be able to describe the role of insulators and conductors in heat transfer • Pupils to be able to develop maths skills by calculating power and fuel bills • Pupils to be able to describe the role of pH scale and indicators in real life applications • Pupils to have a basic understanding of neutralisation reactions •	• Pupils will be able to explain how organisms interact with each other in an ecosystem and how pesticides can disrupt this • Pupils will develop their sampling skills through using quadrats • Pupils to be able to describe how light waves travel with reference to reflection and refraction • Pupils to describe how the eye and the camera work • Pupils to describe how sound waves travel • Pupils to be able to describe how the ear words with reference to human hearing and ranges • Pupils to apply their knowledge of waves to ultrasound • Pupils to be able to describe magnets and magnetic fields and apply their knowledge of this to compasses • Pupils to explain and investigate electromagnets	• Pupils to be able to describe the structure of the earth and its atmosphere and how global warming affects this Pupils to be able to describe the rock cycle and weathering effects on this • Pupils to be able to describe the properties and extraction of metals including recycling of metals • Pupils to describe the effect of metals with water and acids • Pupils to be able to describe properties of various materials • Pupils to describe the structure and history of DNA and how this relates to inheritance and variation • Pupils to be able to describe the process of evolution and extinction • Pupils will be able to calculate speed from the equations and graphs • Pupils will be able to describe different forces on objects and how to minimise this • Pupils to describe and calculate effect of pressure of water and air
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Curriculum Assessment Map: Year 9 Biology

	Autumn Term	Spring Term	Summer Term
Topic	**Cell Biology**	**Organisation**	**Bioenergetics**
Key Learning & Skills	Key Learning • Pupils to understand the structure of cells and the role of the organelles. • Pupils to be able to calculate magnification. • Pupils to be able to describe how mitosis and cell cycle allows for cell division. • Pupil to describe how substance are moved in and out of cells. Skills • **Mathematic skills**: using formula and converting between units and percentage change. • **Practical skills:** Using a microscope and investigating effects of salt and sugar solution on plant cells.	Key Learning • Pupils to understand how cells, tissues, organs, and organ systems are arranged. • Pupils to explain the structure and function of the digestive and circulatory system • Pupils to explain the role of enzymes and how the rate of enzymes can be affected. • Pupils to explain how different disease can occur in the body. • Pupils to describe the structure and function of plant organs Skills • **Mathematic skills**: data analysis, calculating rate and graph work. • **Practical skills:** To calculate rate of enzymes	Key Learning • Pupils to explain photosynthesis and how to calculate the rate of photosynthesis. • Pupils to explain the uses of the products of photosynthesis • Pupils to explain the difference between aerobic and anaerobic respiration • Pupils to explain the role of metabolism Skills • **Mathematic skills**: Calculating rate, analysing graphs • **Practical skills:** To investigate the effect of light intensity on rate of photosynthesis
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Curriculum Assessment Map: Year 9 Physics

	Autumn Term	Spring Term	Summer Term
Topic	**Energy**	**Electricity**	**Particle model of matter**
Key Learning & Skills	Key Learning • Pupils to describe the different energy stores and systems • Pupils to be able to describe the law of conservation of energy • Pupils to be able to calculate energy calculations • Pupils to be able to calculate and explain specific heat capacity • Pupils to be able to evaluate the use of renewable energy • Pupils to be able to describe conduction, heating and insulation Skills • **Mathematic skills**: Using equations linked to energy • **Practical skills:** Pupils to develop their skills during the specific heat capacity practical	Key Learning • Pupils to be able to draw accurate circuit diagrams • Pupils to be able to describe charge, current, voltage and resistance • Pupils to be able to compare series and parallel circuits • Pupils to be able to describe the role of resistors • Pupils to be able to calculate power • Pupils to describe difference between AC and DC • Pupils to be able to explain the role of national grid in supply houses with electricity • Skills • **Mathematic skills**: Using equations linked to electricity • **Practical skills:** Pupils to develop their skills on building circuits	Key Learning • Pupils to describe what density is and be able to calculate density of irregular and regular objects • Pupils to describe the states of matter and how we achieve the changing of states • Pupils to compare specific latent heat and specific heat capacity • Pupils to be able to describe gas pressure • Pupils to be able to explain difference between degrees Celsius and kelvin Skills • **Mathematic skills**: Using density and specific heat capacity equations • **Practical skills:** Pupils to develop their skills during the density practical
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Curriculum Assessment Map: Year 9 Chemistry

	Autumn Term	Spring Term	Summer Term
Topic	**Atomic structure and periodic table**	**Bonds and properties of matter**	**Quantitative chemistry (foundation only)** **Chemical changes (metals**
Key Learning & Skills	Key Learning • Pupils to be able to describe the differences between atoms, elements, compounds and mixtures • Pupils to be able to describe the different states of matter and different techniques to separate mixtures • Pupils to be able to draw and explain atomic/ electronic structure and the history behind its development • Pupils to apply their learning of atomic structure to ions and isotopes • Pupils to be able to calculate relative atomic mass • Pupils to describe the parts of the periodic table and explain how it was developed • Pupils to describe properties of group 1,7 and 0 elements Skills • **Mathematic skills**: Calculating relative atomic mass and analysing data • **Practical skills:** Pupils to develop their skills in separating mixtures including distillation and chromatography	Key Learning • Pupils to recap learning on ions • Pupils to describe how ionic compounds are formed the properties of ionic compounds • Pupils to describe how covalent molecules are formed and the properties of simple and giant covalent molecules including graphene and fullerenes • Pupils to describe how metal atoms are bonded • Pupils to describe how and why alloys are formed • Pupils to compare ionic, covalent and metallic bonding Skills • **Mathematic skills**: Calculating proton, electron and neutron number • **Practical skills:** Pupils to produce moly mod structures of various ionic and covalent compounds	Key Learning • Pupils to understand the conservation of mass • Pupils to recap calculating relative formula mass • Pupils to be able to balance equations • Pupils to be able to calculate changes of mass when using gases • Pupils to be able to calculate concentration of solutions • Pupils to be able to state the reactivity series of metals and how this links to metal extraction • Pupils to be able to explain oxidation and reduction in metals • Pupils to be able to explain the neutralisation of acids • Pupils to be able to describe the process of electrolysis Skills • **Mathematic skills**: Calculating relative formula mass, concentration and changes in mass. • **Practical skills:** Pupils to develop their skills on preparing salts and electrolysis
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