



KS3 Assessment Criteria: Science

	Flight Path 1: GCSE grades 1 and above	Flight Path 2: GCSE grades 2 and above	Flight Path 3: GCSE grades 4 and above	Flight Path 4: GCSE grades 6 and above
Year 7	<ul style="list-style-type: none"> Use laboratory equipment safely to gather evidence. Explain how different techniques separate mixtures. Describe the key functions of the organelles in plant and animal cells. Label a diagram of male and female reproductive systems, describing briefly the journey of the sperm. Describe the size and direction of forces using force diagrams. Label a diagram showing the organs of the digestive system and identify the roles of the different parts. Explain how compounds can be formed. Make accurate observations, identify differences and, with support, describe reactions using simple models or word equations. Identify some different joints. Draw particle diagrams to represent solids, liquids and gases. Identify magnetic attraction and repulsion as non-contact forces; draws field lines to indicate the direction of forces. Describe the variation of pressure in liquids with depth and the effects of this. Can test the strength of an electromagnet Can describe the factors affecting resistance Describes why day and night happen. Identify and compare the rates at which electrical appliances transfer energy. 	<ul style="list-style-type: none"> Select and draw apparatus accurately; explain safety precautions. Explain when to use particular separation techniques using the correct terms. Compare and contrast the similarities and differences between animal cells and plant cells. Explain briefly the journey of a sperm. Describe the size and direction of forces using force diagrams. Describe the role of all the organs in the digestive system. Give examples of elements, use correct symbols Make accurate observations, identify differences and, describes reactions using simple models or word equations. Identify some different joints and explain the role of tendons and ligaments in joints. Explain factors that can affect food webs. Can draw particle diagrams to represent solids, liquids and gases, explaining their properties. Identify magnetic attraction and repulsion as non-contact forces; draw field lines to indicate the direction and strength of forces. Can calculate the pressure applied by a solid from the force applied and the contact surface area. Can explain what an indicator is and analyse results when using an indicator. Describe how an electromagnet works. Can describe and explain the factors affecting resistance. Describes the causes of daily and seasonal changes Use the power rating of a device. 	<ul style="list-style-type: none"> Safely separate rock salt, describing how the experiment is carried out. Explain the choice of separation techniques using correct terms. Compare and contrast plant and animal cells. Describe the structures and functions of the main parts of the male and female human reproductive systems. Can use and apply the law of moments. Name the organs of the digestive system in the order that food passes through them. Suggest reasons for different observations, describe reactions using word equations. Evaluate changes in a food web. Explain how different parts of the skeleton are adapted. Apply the particle model to explain physical and chemical changes. Explain how field lines indicate the direction and strength of forces. Explain how force and area can be varied to alter the pressure applied. Explain what all acids have in common and what all alkalis have in common. Explain the causes of daily and seasonal changes Explain how an electromagnet works. Calculate resistance and explain factors which affect it Compare rates of energy transferred when electrical appliances are used. 	<ul style="list-style-type: none"> Safely separate rock salt, explaining how the experiment is carried out. Identifies the uses and advantages of distillation. Explain the structure and adaptation of specialised plant and animal cells. Understand how the male and female reproductive systems function. Explain moments using force diagrams and the law of moments. Explain the link between digestion and circulation. Suggest reasons for different observations, describe reactions using symbol equations. Analyse an example of interdependence of organisms in an ecosystem. Explain how muscles and the skeleton work to bring about movement. Evaluate the strengths and limitations of particle models. Apply and evaluate the concept of magnetic fields in various contexts. Identify the causes and implications of variation of pressure. Explain what happens during neutralisation reactions Compare and contrast the use of magnets and electromagnets in different applications, such as a circuit breaker. Use data and a mathematical relationship between current, voltage and resistance to carry out calculations. Understands the implications of the Earth being tilted on its axis. Understand energy transfer in electrical devices.
Year 8	<ul style="list-style-type: none"> Describes the role of mitochondria. Describe the changes to indicators when acids and alkalis are mixed. Describe the observations of reactions between acids and metal, and acids and carbonate that tell us that a chemical change is taking place. Describe the gases in our atmosphere and their relative proportions. Can describe how sedimentary, igneous and metamorphic rocks, including how fossils are formed. Interprets distance–time graphs for simple journeys. Describe what is required in order to calculate the speed of an object. Describe where gases are exchanged between the lungs and the blood. explain a chemical reaction using simple models Interpret and draw energy transfer diagrams for a range of different energy transfers. Explain how longitudinal waves carry sound. Identifies features that are inherited and those which are determined by the environment. Define cloning. Describe the process of extracting iron from its ore in a blast furnace. Interpret data to explain how a catalyst affects a reaction. 	<ul style="list-style-type: none"> Explains how mitochondria are adapted for respiration. Explains the general reaction between an acid and a metal, and between an acid and a carbonate, using word equations. Describe how the gases in our atmosphere and their relative proportions have changed over time. Can explain how sedimentary, igneous and metamorphic rocks, including fossils are formed. Construct distance–time graphs for simple journeys. Carry out basic speed calculations. Write the equation for respiration and knows where gas exchange takes place. Give examples of elements, use correct symbols and explain how they are organised in the Periodic Table. Interprets and draws quantified energy transfer diagrams. Relate the terms frequency and amplitude to sounds. How plants make food. Knows why variation can occur. Give examples of asexual reproduction. Describe what happens in a displacement reaction. Explain how catalysts work. Understand how waves behave. Describes the effects of drugs on the body. 	<ul style="list-style-type: none"> Explain the role of respiration in building up complex molecules. Summarise specific reactions between acids and metals and between acids and carbonates using word equations. Describe how plants and then animals have changed the atmosphere over time. Describe the processes involved in the rock cycle. Explain distance–time graphs for complex journeys. Explain the concept of speed. Apply the structure of alveoli to their function in gas exchange Explain how the periodic table is organised. Use Sankey diagrams to explain a range of energy changes. Interpret and devise wave diagrams. Explain the chemical changes involved in photosynthesis Explain why offspring from the same parents can be very different. Explain how artificial cloning is performed. Write word equations for displacement reactions Explain the energy changes taking place during an exothermic and an endothermic reaction. Can accurately draw ray diagrams for reflection. Explain the effects of different drugs on the body. 	<ul style="list-style-type: none"> Describe and explain the effects of respiration. Summarise specific reactions between acids and metals and between acids and carbonates using word equations, symbol equations and particle drawings. Explain how plants and then animals have changed the atmosphere over time using different processes. Explain the processes involved in the rock cycle and link these to how the rocks are formed. Construct distance–time graphs for complex journeys. Explain the motion of an object in terms of its vertical and horizontal speed Explain the difference between breathing and respiration Explain how scientists’ organisation of the periodic table changed over time. Draw to scale, Sankey diagrams to explain a range of energy changes and demonstrate that all energy is always accounted for. Use calculations to measure the speed of sound and the distance of objects in different applications. Relate and explain how the structure of palisade, mesophyll and guard cells allows them to perform their function. Understand the importance of genetic and environmental variation. Understand cloning, asexual and sexual reproduction. Can make predictions using the reactivity series.



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	<ul style="list-style-type: none">• Compare the properties of different types of wave.• Explain how the body is damaged by smoking and passive smoking.			<ul style="list-style-type: none">• Understand changes in exothermic and endothermic reactions.• Understand how to draw ray diagrams for reflection.• Can explain the effects of drugs on the body.

King Edward VI