Year Group: 7	Subject: Science	Term: Autumn 2021

Topic	Key Learning points	Assessment
Introduction to Science:	*End Point: Understand the scientific method and know good practice for carrying out scientific investigations safely and methodically* • Recognise potential hazards in a science laboratory • Label a Bunsen burner to include rubber tubing, base, air hole, chimney and flame • Define independent variable, dependent variable and control variable • Know how to write a hypothesis • Know how to draw and describe what the following equipment is used for; test tube, boiling tube, beaker, conical flask, round bottom flask, measuring cylinder, condenser, tripod, gauze, Bunsen burner, evaporating basin, filter funnel, rubber bung, rubber bung with a hole • Know how to write an experimental method using well sequenced steps • Identify risks in an experimental method • Know how to calculate the mean and describe data shown in a table and spot anomalies • Define continuous data, discrete data and categoric data • Know how to draw a graph using an appropriate scale, including a title and labelled axes with units • Know what is meant by the terms accurate, precise, repeatable and reproducible • Understand that a conclusion describes a trend using scientific knowledge	Students will be formatively assessed during each topic by weekly multiple-choice tests in class: • Before each assessment students will complete a revision homework • After each assessment there will be an opportunity for students to review their understanding • Teachers will provide students with targeted feedback, based on their test performance At the end of the term students will have a summative assessment. This will be a 45-mark exam paper (15 marks from each topic), which will be marked by their teacher
Biology: Cells	*End Point: Describe generic plant and animal cell structure and give examples of a range of specialised cells. Know how to use a microscope and prepare cell samples to view. Describe levels of organisation in organisms and compare this with structure of single-celled organisms.* • Know how to draw and label an animal cell and describe the functions of the nucleus, mitochondria, cytoplasm and cell membrane • Know how to draw and label a plant cell and describe the functions of the nucleus, mitochondria, cytoplasm, cell membrane, cell wall, vacuole and chloroplasts • Be able to use a microscope to observe cells • Know how to draw and label a sperm cell, egg cell and red blood cell • Know that humans are multicellular organisms and define cell, tissue & organ • Describe the function of the heart, lungs, brain and kidneys • Know the function of the circulatory system, digestive system, respiratory system and nervous system • Know that the human skeleton is made up of individual bones and label the skull, ribcage, spine, humerus and femur. • Know how to draw bacterial cells, labelling the cell wall, cell membrane, cytoplasm, flagellum, plasmid and genetic material	
Chemistry: The Particle Model	*End Point: Understand particle theory, being able to describe how movement and arrangement of particles is related to energy. Describe particles in solid, liquid and gases and explain changes of state.* • Know that solids do not flow, cannot be compressed and do not take the shape of their container • Know that liquids flow, cannot be compressed and do take the shape of their container • Know that gases flow, can be compressed and do take the shape of their container • Define melting, evaporation, sublimation, condensation, freezing and deposition • Draw particle diagrams for solids, liquids and gases • Know that particles in liquids and gases move randomly as they collide with other particles and that this is called Brownian Motion • Define diffusion as the movement of particles from an area of high concentration to an area of low concentration • Draw heating and cooling curves and label the states/ state changes • Understand that the mass of a substance does not change during a state change	