	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Theme/Big Idea	Scientists use evidence to explain the world. Everything is made from tiny particles in constant motion.	Cells are the building blocks of all living things. Light allows us to see and carry information about the world. Sound is energy transferred through vibrations. Specialised organs work together to keep us alive.	Forces change how objects move and interact. A small number of building blocks create all matter.	Life continues through growth, development and reproduction. New substances form when atoms rearrange. Our place in the universe is shaped by predictable patterns and forces. Chemical properties determine how substances interact.	Our place in the universe is shaped by predictable patterns and forces. Chemical properties determine how substances interact. Revision End of year exam	KS3 Project Work – Scientific knowledge can be applied to investigate and solve real-world problems.
Content What are they learning? (including keywords)	**Topic: Working Scientifically** **Content**: working safely planning investigations, recording, presenting, analysing and evaluating data **Key words:** variables, independent, dependent, control, predictions, hazard, risk, mean, line of best fit, line graph, bar chart, evaluation, anomalous, random, systematic **Topic C1: Particles and their behaviour** **Content**: particle model, stated of matter, density, changes of state, diffusion **Key words:** particle, mixture, particle model, solid, liquid, gas, density, melting, freezing, boiling, evaporation, condensing, subliming, diffusion	**Topic B1: *Cells*** **Content:** observing cells, plant and animal cells, specialised cells, movement of substances, unicellular organisms **Key words:** *cell, nucleus, cell membrane, unicellular, diffusion, organ* **Topic P3: *Light*** **Content**: *Light, Properties of light. Reflection. Refraction. Camera and the eye. Colour vision and making coloured light.* **Key words:** *light, emits, reflects, luminous, non-luminous, transmit, opaque, transparent, translucent, reflection incident ray, reflected ray, refraction, lenses, eye, camera, colour, primary and secondary colours* **Topic P2: Sound** **Content**: Making sounds. Sound waves. Detecting sounds, the ear, microphone. Audible range. Ultrasound	**Topic P1: Forces** **Content**: Forces – contact, non-contact. Weight and mass. Investigating springs. Friction. Pressure on surfaces. Balanced and unbalanced forces. **Key words:** Forces Newton, Resultant force, Friction, Tension, Compression, Contact force, Weight, Non-contact force, Mass, Gravity **Topic C2: Elements, atoms and compounds** **Content**: elements, atoms, compounds, chemical formulae, chemical reactions. **Key words:** Atoms, Elements, Compounds Atom, Element, Molecule, Compound,	**Topic B3: Reproduction** **Content:** adolescence, reproductive systems, fertilisation and implantation, development of the foetus, menstrual cycle, flowers and pollination, fertilisation and germination, seed dispersal **Key words**: *adolescence; reproductive systems; human reproduction; the menstrual cycle, pollination, seeds* **Topic C3: Reactions** **Content**: *chemical reactions, words equation, oxidation reaction, decomposition reactions, using ratios, conservation of mass, exothermic and endothermic reactions,* **Key words**: *reactions, catalyst, physical change, word equations, oxidation reactions, combustion thermal decomposition, ratios, conservation of mass, balanced equation, exothermic and endothermic reactions*	**Topic P4: Space** **Content**: Exploring the solar system. The 4 seasons. Magnetic earth. Gravity in space. Beyond the solar system. **Key Words:** Solar system, phases of Moon, Copernicus' model, Ptolemy's model, orbit, Kepler's model, equator, hemispheres, tilted axis, seasons, magnetic field, compass, magnet, poles, gravitational field, gravity, mass, weight, satellite, stars, galaxy, constellation, light year. **Topic C4: Acids and Alkali –** **Content**: Acids and alkali, indicators and pH, neutralisation reactions, making salts **Keywords:** *acids & alkalis; indicators & pH, acid strength, concentration, dilute, neutralisation, making salts;* **Revision** **End of Year 7 Exams**	**KS3 Project work** **Topic: Eco House Project** **Content:** Sustainability, carbon footprint, energy sources, energy efficiency, heat transfer, insulation, water conservation, waste management, building materials, environmental impact, renewable energy, and designing environmentally friendly homes. **Key Words:** sustainability carbon footprint energy sources renewable energy energy efficiency heat transfer conduction convection radiation insulation water conservation waste management recycling building materials environmental impact **Topic: Health and fitness project** **Content:** digestive system, skeletal system, muscular system, respiration, effect

		Key words: Sound, Vibration, Volume, Pitch, Amplitude, Wavelength, Frequency. **Topic B2: Structure and Function of the body systems** **Content**: Levels of organisation, gas exchange, breathing, skeleton, movement of joints and muscles **Key words:** *tissue, organ, lungs, inhale, exhale, bones, skeleton, joints, antagonistic muscles*	Mixture, Chemical formula, Metal, Non-metal.	**British Science Week –** Lunchtime celebrating science week activities with engaging activities		of exercise on heart rate, reaction time and factors affecting reactions **Key Words:** digestive system, skeletal system muscular system, respiration, exercise, heart rate, reaction time nervous system, coordination, reflexes, oxygen, energy, fitness, health, response time
Skills How are they learning it?	Planning investigations; identifying variables; writing predictions; carrying out practical work safely; recording observations; presenting data in tables and graphs; calculating means; identifying patterns and anomalies; using the particle model to explain observations; evaluating evidence.	Using microscopes; observing and drawing cells; interpreting biological diagrams; constructing models; investigating reflection, refraction and sound waves; analysing results from practical investigations; using scientific vocabulary to explain how body systems work. SI units and scale, Scientific modelling – particle model, kinetic theory.	Measuring forces; collecting and graphing data; identifying balanced and unbalanced forces; using models to represent atoms and compounds; writing chemical formulae; interpreting patterns in scientific data; applying mathematical skills to science.	Analysing life-cycle processes; constructing word equations; identifying evidence for chemical reactions; using pH indicators; carrying out comparative investigations; explaining scientific phenomena using models; evaluating conclusions using evidence.	Applying scientific knowledge to unfamiliar contexts; analysing and interpreting data; retrieving and linking concepts across biology, chemistry and physics; evaluating evidence; practising exam-style questions; developing scientific explanations. Hazard identification. Manipulation of practical equipment. Everyday applications of science. Planning investigations – neutralisation. Modelling (circuits). SI units.	Planning and carrying out independent enquiries; researching from reliable sources; collecting and analysing data; presenting findings; communicating scientific ideas; evaluating methods and conclusions; collaborative problem-solving.
Key Questions	**Working Scientifically** How do scientists plan and carry out reliable investigations? How can data and evidence be used to draw valid conclusions? **Topic C1: Particles and their Behaviour** How does the particle model explain the properties of solids, liquids and gases?	**Topic B1: Cells** Why are cells considered the basic units of life? How are specialised cells adapted for their functions? **Topic P3: Light** How does light enable us to see the world around us? How do reflection and refraction affect the path of light? **Topic P2: Sound**	**Topic P1: Forces** How do forces affect the movement and shape of objects? What is the difference between balanced and unbalanced forces? **Topic C2: Elements, Atoms and Compounds** What are atoms, elements and	**Topic B3: Reproduction** How do humans and plants reproduce? How does reproduction ensure the continuation of species? **Topic C3: Reactions** What happens to atoms during a chemical reaction? How can chemical reactions be represented and explained?	**Topic P4: Space** What is our place within the Solar System and the wider Universe? How do the movements of the Earth, Moon and Sun affect life on Earth? **Topic C4: Acids and Alkalis** How can acids and alkalis be identified and compared? How are neutralisation reactions used in everyday life?	**KS3 Project Work** How can scientific knowledge be used to investigate a real-world problem? How can evidence be gathered, analysed and communicated effectively?

	How do particles behave during changes of state and diffusion?	How are sounds produced and transmitted? What affects the pitch and loudness of a sound? **Topic B2: Structure and Function of Body Systems** How do different organs and tissues work together to keep us alive? How do the skeleton, muscles and lungs support movement and survival?	compounds, and how are they related? How can scientists represent substances using symbols and formulae?			
Assessment (specific assessed piece(s); milestone(s))	Marking Milestone: End of Topic Assessments: Working Scientifically, Particles and their Behaviour	Marking Milestone: End of Topic Assessments: Cells, Light, Sound, Structure and Function of Body Systems	Marking Milestone: End of Topic Assessments: Forces, Elements, Atoms and Compounds	Marking Milestone: End of Topic Assessments: Reproduction, Reactions, Space, Acids and Alkalis	Marking Milestone: End of Topic Assessments: Space, Acids and Alkalis, End of Year 7 Examination End of Year 7 Exam	KS3 Project Work Assessment / Marking Milestone