Year 7 Science Curriculum Outline

The science department at Linslade School delivers a broad and diverse curriculum that instils awe and wonder, a sense of excitement and curiosity about natural phenomena and a window into the wider science world. We plan our schemes to provide a bridge from Lower to Upper School equipping them with knowledge to use across a range of subjects at GCSE and beyond, including how to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. Pupils will develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
Through the delivery of practical and theory lessons, we develop creative and curious learners and encourage aspirations and an understanding of the future careers that are open to them. Our learners today have an inspirational knowledge base to be our scientific leaders of tomorrow that is vital to the world's future prosperity.

Topic and term	Forces - speed and gravity. Organisms - Movement and Cells.	Matter - Particles and their behaviour and separating mixtures. Electricity - potential difference and resistance.	Genes - Variation and Human Reproduction Reactions - Acids and alkalis and metals and non-metals	Complete Reactions topic - metals and non-metals. Energy - energy costs and energy transfer.	Waves - Light and sound Earth and Space - Earth structure and universe	Ecosystems - Interdependence and plant reproduction
Key Skills	Represent sizes and direction of forces using arrows Explain the effects of balanced and unbalanced forces in	To describe the differences in arrangements, in motion and in closeness of particles explaining changes of state,	To describe the reproductive systems of male and female animals To explain how gametes	To describe what elements and atoms are. To describe the periodic table and know some of the elements. To describe the	Describe the transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface.	To understand feeding relationships and food chains. To explain how food chains can be disrupted.

	simple situations Describe how the extension of a spring depends on the force applied Explain ways in which friction can be changed Use the formula relating force, pressure and area To describe, draw and explain the functions of animal and plant cells. To describe the role of cells in the body and specialised cells. To describe how cells form tissues, organs and organ	shape and density, the anomaly of ice-water transition To describe atoms and molecules as particles. To understand the concept of a pure substance To describe mixtures, including dissolving To explain diffusion in terms of the particle model To use simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography To describe changes of	form a new life. To describe how human bodies change during puberty. To describe the changes in the female body during pregnancy and birth. To describe the development of the foetus. To describe the difference between acids and alkalis To describe the uses of indicators To show how a neutralisation reaction takes place and the products formed.	properties of metals and non-metals and how they react and form compounds. To describe what molecules and compounds are. To identify reactions and describe how to test for gases. Describe the properties of metals and non-metals. Relate the uses of different elements to their chemical properties. Describe how catalysts affect the speed or rate of a reaction. Model simple reactions using symbol equations. Describe what alloys are. Identify a pure substance from its melting or boiling point.	To use the ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lenses in focusing; the human eye. Describe colours and the different frequencies of light, white light and prisms. Describe how we see colour. Understand the term ‘orbit’ and be able to describe what a planetary orbit is. Describe differences in the seasons in terms of day length and the height of the Sun. Know that gravity is an invisible force that pulls falling objects back to Earth.	To describe food webs. To understand how interdependence works. To describe sexual reproduction in plants, including naming the part of the flower required for this. To describe asexual reproduction and why this can be beneficial. To compare the differences between asexual and sexual reproduction in plants

	systems. To explain how organ systems work to keep organisms alive and healthy. Identify organisms that are unicellular and those that are multicellular and state the meaning of: multicellular, unicellular. Identify the common parts of bacteria. Recall what happens in aerobic and anaerobic respiration in yeast.	state in terms of the particle model. To draw and label accurate circuit diagrams with symbols. To identify how current can be changed in circuits. To explain how current can be modelled. To measure current accurately in investigations.		Identify and explain the products formed by the reactions of metals with water and with oxygen. To link particle movement to energy transfer. To describe the different types of energy and their transfers. To describe how energy resources can be used.	State the meaning of gravitational field and gravitational field strength Explain why the weight of an object changes if taken to the Moon, but not its mass. Describe the Earth's magnetic field and explain why a magnetic compass needle points north.	

Previous learning and next steps links	Changing state, reversible and irreversible changes at KS2 KS4 curriculum- physics and chemistry	Life cycles, animals and humans KS4 biology	KS2 sound KS4 physics	KS2 electrical circuits Irreversible changes KS4 physics and chemistry	KS2 Irreversible changes and forces KS4 physics and chemistry	KS2 life cycles KS4 biology
Numeracy Opportunities	Data, tally, bar charts, pie charts, thermometers, line graphs, tables of results, timing, measuring etc.					
Literacy opportunities	Experimental write ups and recording of information. Key vocabulary, reading text linked to each topic					