

Levenshulme High School – Curriculum Map – Science

		Term 1		Term 2		Term 3	
No. of Weeks		8	7	6	6	5	7
Year 8	<b>Topic Title and NC link</b>	<b>8K&amp;L Light and Sound.</b>	<b>8A&amp;B Digestion and Respiration</b>	<b>8F&amp;G Materials, recycling, elements, compounds and mixtures</b>	<b>8I&amp;J – Heat and Forces</b>	<b>8IF intermolecular forces and bonding</b>	<b>8C Doctors and Diseases &amp; Further energy</b>
	<b>Big ideas</b>	<i><b>Objects can affect other objects at a distance.</b></i>	<i><b>Organisms require a supply of energy and materials for which they often depend on, or compete with, other organisms.</b></i>	<i><b>All matter is made of particles.</b></i>	<i><b>All matter is made of particles. &amp; Objects can affect other objects at a distance</b></i>	<i><b>Ideas about Science: Science often has ethical and social implications.</b></i>	<i><b>The total amount of energy in the Universe is always the same but can be transferred from one energy store to another.</b></i>
	<i>Pupils should know...</i>	This unit returns to KS2 ideas of light which are extended to how light travels, reflection, refraction, absorption and colour. Students move on to learn about sound as waves, including pitch, frequency and the ear.	This unit covers diet, digestion and the transport of nutrients around the body. Students then move into the study of the chemical reaction for respiration, and how its products are transported and used in our bodies.	This unit revisits ideas about elements, compounds and mixtures also how materials are classified. Students will learn how particle models are used to represent elements, compounds and mixtures. Students will also learn how to write simple words and symbol equations. Students will examine how to classify and sort into metals and non-metals.	This unit looks at heat transfers, and how objects can be conductors or insulators. This unit looks at weight, drag, magnetic and electromagnetic forces, and at drawing free body diagrams.	This unit will revisit physical and chemical changes. Students will learn about why physical changes happen in terms of intermolecular forces and the reason why solids, liquids and gases have similar chemical properties. Students will apply their learning to plastics, what they are, how they are made also the consequences of using them on the environment.	Students are introduced to the work of doctors in prevention of diseases. This includes microbes, disease transmission and disease preventions.  Students aim to build upon knowledge of energy and energy transfers.

	<p><i>Pupils should be able to do...</i></p>	<ul style="list-style-type: none"> <li>• Define refraction and reflection.</li> <li>• Describe how sound waves travel Describe relationship between amplitude, intensity, frequency and pitch</li> </ul>	<ul style="list-style-type: none"> <li>• Identify how digested food is transported to the cells.</li> <li>• Recall the word equations for respiration</li> </ul> <p>Describe how gas exchange takes place in organisms with a single circularity system.</p>	<ul style="list-style-type: none"> <li>• Use particle diagrams to identify the difference between elements, compounds and mixtures.</li> <li>• Use evidence to describe how compounds are different from their elements.</li> <li>• Write word equations for chemical changes and name reactants and products.</li> <li>• Explain what a chemical formula shows</li> <li>• Describe the physical properties of metals</li> </ul>	<ul style="list-style-type: none"> <li>• Describe how heat is conducted through materials.</li> <li>• Draw free body diagrams to represent forces.</li> <li>• Describe what causes air resistance.</li> </ul>	<ul style="list-style-type: none"> <li>• State the melting and boiling points of water</li> <li>• Use data to determine the melting and boiling points of other materials.</li> <li>• Explain what happens to the elements in a chemical reaction.</li> <li>• Compare chemical properties before and after a reaction.</li> <li>• Apply knowledge of intermolecular forces and bonding to describe the properties of slime. <ul style="list-style-type: none"> <li>• Define a polymer</li> <li>• Give some examples of polymers</li> </ul> </li> <li>• Describe the relationship between a polymer and a monomer</li> </ul>	<ul style="list-style-type: none"> <li>• Define microbe.</li> <li>• Describe some ways that microbes can spread disease.</li> <li>• State the ways our body defends against disease.</li> <li>• Identify energy types</li> <li>• Apply knowledge to simple energy pathways diagrams.</li> <li>• Recall some advantages and disadvantages of generating electricity through burning fossil fuels.</li> </ul>
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<i>Pupils should have remembered...</i>	<b>From Yr7-</b> light is needed to see things (link to shadows), light is reflected, how sounds are made and that they need a medium to travel.	<b>From Year 7-</b> Cells carry out respiration in order to produce energy.	<b>From Yr7 -</b> categorise substances as solids, liquids and gases Ideas about chemical reactions. Difference between physical and chemical changes.	<b>From Yr7-</b> describe why objects fall, how temperature is measured, and how magnets have two poles.	<b>From Yr7 -</b> categorise substances as solids, liquids and gases Ideas about chemical reactions. Particle diagrams of solids, liquids and gases.	From Year 7 – Recall structure and function of components of a bacteria cell.  Describe energy stores and pathways.	