

Year Group: 8	Subject: Science	Term: Spring 2020
Topic	Key Learning points	Assessment
<b>Biology:</b> Respiration	<p><i>End Point: Understand that respiration is a biochemical process that plays a central role for all living organisms. Link this to the mechanical process of breathing and the cells, tissues, organs and organ systems involved.</i></p> <ul style="list-style-type: none"> <li>Recap animal cells and organisation in animals including cells, tissues, organs and organ systems</li> <li>Recap the role of diffusion in the transport of substances in and out of cells</li> <li>Know that respiration is a biochemical process that releases energy from glucose</li> <li>Describe the structure of the respiratory system and thorax, including the lungs, diaphragm, ribcage, intercostal muscles, trachea, bronchi and bronchioles</li> <li>Explain the mechanical process of ventilation in the lungs</li> <li>Describe factors that affect lung health, such as asthma and smoking</li> <li>Compare aerobic and anaerobic respiration</li> <li>Know that fermentation is a type of anaerobic respiration that can be used in baking and brewing</li> </ul>	<p>Students will be formatively assessed during each topic by weekly multiple-choice tests in class:</p> <ul style="list-style-type: none"> <li>Before each assessment students will complete a revision homework</li> <li>After each assessment there will be an opportunity for students to review their understanding</li> <li>Teachers will provide students with targeted feedback, based on their test performance</li> </ul>
<b>Chemistry:</b> The Periodic Table	<p><i>End Point: Have a secure knowledge of particles, atoms, elements and compounds and understand how elements are displayed on the periodic table. Describe the trends within the groups and periods of the periodic table.</i></p> <ul style="list-style-type: none"> <li>Know the history of the periodic table, including Mendeleev's periodic table</li> <li>Recap atoms, elements, compounds and mixtures</li> <li>Recap chemical formulae and be able to identify elements by their formulae using the periodic table</li> <li>Know how the periodic table is arranged into periods and groups</li> <li>Know that elements can be categorised as metals and non-metals and identify where they are found on the periodic table</li> <li>Know the properties of metals, including thermal and electrical conductivity, hardness and malleability</li> <li>Know that group 1 elements are called the alkali metals and write word equations to show their reactions with water</li> <li>Describe the reactivity of alkali metals</li> <li>Know that group 7 elements are called the halogens and describe their reactivity through displacement reactions</li> <li>Know that group 0 elements are called the noble gases and are inert (unreactive)</li> </ul>	<p>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</p>
<b>Physics:</b> Heating and Cooling	<p><i>End Point: Understand how energy is transferred between stores of energy both by particles (conduction and convection) and by radiation.</i></p> <ul style="list-style-type: none"> <li>Recap the particle model and how the arrangement/movement of particles changes during a state change</li> <li>Describe state changes in terms of energy and recap heating and cooling curves</li> <li>Recap energy stores and energy transfer mechanisms</li> <li>Know the difference between heat and temperature</li> <li>Know the thermal energy is transferred through solids by conduction</li> <li>Know that thermal energy is transferred through liquids and gases by convection</li> <li>Know that thermal energy is transferred through a vacuum by radiation</li> <li>Know that materials can be conductors or insulators of thermal energy</li> <li>Use practical work to determine how to reduce heat loss, relate this to everyday issues, such as insulating materials used in house building</li> </ul>	