








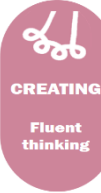


## Key Stage 3 Curriculum Map 2021-22

### Term 3


| Year Group: 9   | Subject: Physics  |   |  |  |
|---|---|---|--|--|
| Focus/Topic   | Objectives  | Key Skills/ UAE Links   | HPL Skill  | Home Learning/<br>Recommended Reading                            |
| <b>Energy</b><br>1. Energy types<br><br>2. Energy transfers<br><br>3. Friction and thermal Energy | <ul style="list-style-type: none"> <li>Use your knowledge to describe what energy is</li> <li>Use your knowledge to list different types of energy</li> <li>Evaluate exam questions</li> <li>Use your knowledge to give examples of energy transfers</li> <li>Use your knowledge to state the law of conservation of energy</li> <li>Compare what is meant by useful and wasted energy</li> <li>Use your knowledge to describe how friction is caused</li> <li>Justify how friction can be minimised</li> <li>Set up an investigation to see how weight affects friction</li> </ul> | <ul style="list-style-type: none"> <li>Recall, application, how science works and mathematics in science.</li> <li>Discuss how the UAE generates it's electricity.</li> </ul> | <b>VAA: Empathetic</b><br><br>The ability to seek out opportunities to receive responses to your work; present your own views and ideas clearly and concisely; listen to the views of others; be willing and able to work in teams; take a variety of roles and be able to evaluate your own ideas and contributions. | <ul style="list-style-type: none"> <li>Guided reading</li> </ul> |

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| <p>4. Non-renewable energy</p> <p>5. Renewable energy</p> <p>Energy end of topic test and feedback</p> | <ul style="list-style-type: none"> <li>• Use your knowledge to define renewable energy sources</li> <li>• Use your knowledge to give examples of renewable energy sources</li> <li>• Examine the pros and cons of renewable sources</li> <li>• Use your knowledge to define renewable energy sources</li> <li>• Use your knowledge to give examples of renewable energy sources</li> <li>• Examine the pros and cons of renewable sources</li> </ul> | <ul style="list-style-type: none"> <li>• Recall, application, how science works and mathematics in science.</li> <li>• Research and discuss which renewable energy resources the UAE is investing in and why.</li> </ul> | <p><b>ACP:</b></p>  <p><b>Analysing</b><br/>The ability to deduct, hypothesize, reason, seek supporting evidence</p>  | <ul style="list-style-type: none"> <li>• Guided reading</li> </ul> |
| <p><b><u>Heat transfer</u></b></p> <p>1. Specific Heat Capacity</p> <p>2. Conduction</p>               | <ul style="list-style-type: none"> <li>• Use your knowledge to describe what is meant by specific heat capacity</li> <li>• Calculate energy transferred using the formula</li> <li>• Evaluate everyday applications of SHC</li> <li>• Use your knowledge to describe the arrangement</li> </ul>  | <ul style="list-style-type: none"> <li>• Recall, application, how science works and mathematics in science.</li> <li>• Give examples of conduction and convection within the UAE.</li> </ul>                             |  <p>The ability to approach new learning experiences by actively attempting to connect it to existing knowledge or concepts and hence determine an appropriate way to think about the work.</p> | <ul style="list-style-type: none"> <li>• Guided reading</li> </ul> |

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| <p>3. Convection</p>  | <p>and motion of particles in a solid</p> <ul style="list-style-type: none"> <li>Analyse the effect of heating up a substance on the motion of particles</li> <li>Justify how heat is transferred through conduction</li> <li>Use your knowledge to explain how particles move in a liquid</li> <li>Analyse how convection currents are formed</li> <li>Justify where convection currents appear in nature</li> </ul> |  |  <p>Work diligently and work systematically.<br/>-Not be satisfied until high quality, appropriate precision and the desired outcome are achieved.</p>   |  |
| <p>4. Radiation</p> <p>5-6. Investigation – cooling curve</p> | <ul style="list-style-type: none"> <li>Use your knowledge to describe what radiation is</li> <li>Evaluate factors that affect the emission of thermal radiation</li> <li>Justify which the best materials for different applications</li> <li>Use your knowledge to identify variables</li> <li>Collect data from an investigation</li> <li>Analyse data to create a conclusion.</li> </ul>                           | <ul style="list-style-type: none"> <li>Recall, application, how science works and mathematics in science.</li> <li>Design an investigation into energy transfer within the UAE.</li> </ul> |  <p>The ability to monitor, evaluate and self-correct.</p><br> <p>The ability to be curious, be willing to work alone, be proactive, keen to learn, show enterprise think independently</p> | <ul style="list-style-type: none"> <li>Guided reading</li> </ul> |

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| <p><b><u>Density – Kinetic Theory</u></b></p> <p>1. Solids - Liquids – Gases (SLG)</p> <p>2. Change of state</p> <p>3. Cooling curve</p> | <ul style="list-style-type: none"> <li>Use your knowledge to describe the arrangement of particles in solids, liquids and gases.</li> <li>Relate the arrangement of particles in solids, liquids and gases to the motion of the particles.</li> <li>Justify the properties of S solids, liquids and gases by considering the arrangement of particles</li> <li>Use your knowledge to name the changes of state</li> <li>Outline deposition</li> <li>Outline sublimation</li> <li>Compare heat and temperature</li> <li>Analyse a graph to explain what happens when a substance changes shape.</li> <li>Evaluate what happens to heat energy when heating up a substance</li> </ul> | <ul style="list-style-type: none"> <li>Recall, application, how science works and mathematics in science.</li> <li>Research and outline how the UAE uses knowledge of changes of state in everyday life.</li> </ul> | <div data-bbox="1318 69 1417 224">  <p>Generalisation</p> </div> <p>-The ability to see how what is happening in this instance could be extrapolated to other similar situations.</p> <div data-bbox="1318 487 1417 678">  <p>Fluent thinking</p> </div> <p>The ability to generate ideas</p> | <ul style="list-style-type: none"> <li>Guided reading</li> </ul> |
| <p>4. Density</p> <p>5-6 Density practical</p>   | <ul style="list-style-type: none"> <li>Use your knowledge to describe what density represents</li> <li>Calculate density given the formula</li> <li>Compare the density of different materials</li> <li>Measure dimensions of objects</li> <li>Calculate volume using the formula</li> <li>Calculate density using the formula</li> </ul>   | <ul style="list-style-type: none"> <li>Recall, application, how science works and mathematics in science.</li> <li>Outline how the UAE uses knowledge of density if everyday life.</li> </ul>                       | <div data-bbox="1318 998 1453 1166">  <p>Critical or logical thinking</p> </div> <p>The ability to deduct, hypothesise, reason, seek supporting evidence</p> <div data-bbox="1360 1323 1474 1494">  <p>Practice</p> </div> <p>The ability to train and prepare</p>                        | <ul style="list-style-type: none"> <li>Guided reading</li> </ul> |



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|               |  |  | <p>-Not be satisfied until high quality, appropriate precision and the desired outcome are achieved.</p> <div><p>CREATING<br/>Flexible thinking</p></div> <p>The ability to abandon one idea for a superior one or generate multiple solutions.</p> |  |
| END OF TERM 3 |  |  |  |  |