

Key Stage 3 Curriculum Map 2021-2022
Term 2

Year Group: 8	Subject: Physics			
Focus/Topic	Objectives	Key Skills/ UAE Links	HPL Skills	Home Learning/ Recommended Reading
<p>Physics: A) Electricity 1) Circuit symbols and diagrams</p> <p>2) Current in Series</p> <p>3) Voltage in Series</p>	<ul style="list-style-type: none"> Use your knowledge to identify circuit symbols Use your knowledge to create circuit diagrams Explain how multiple cells are drawn Use your knowledge to describe what is meant by current Explain how an ammeter is used Justify why current is the same in a series circuit Use your knowledge to describe what is meant by voltage Explain how to use a voltmeter 	<ul style="list-style-type: none"> Recall, working scientifically Electricity in the UAE Working scientifically, application UAE links : How does electricity work in UAE? The UAE is planning to add nuclear, renewable, and coal-fired electricity generating capacity to accommodate rising demand, but the country 	<p>VAA – Agile <i>Creative and enterprising</i> -The ability to be open-minded and flexible in your thought processes. -Demonstrate a willingness to innovate and invent new and multiple solutions to a problem or situation. -Adapt your approach according to need; surprise and show originality in your work, developing a personal style. -Be resourceful when presented with challenging tasks and problems, using your initiative to find solutions.</p>	<p>Guided reading</p>

	<ul style="list-style-type: none"> Justify how voltage changes in a series circuit 	<p>currently relies primarily on natural gas, with oil playing a secondary role.</p> <ul style="list-style-type: none"> Recall, apply, how science works, evaluate and mathematics 		
4) Resistance	<ul style="list-style-type: none"> Calculate resistance Collect data for an investigation Plot data onto a graph 	<ul style="list-style-type: none"> Recall, working scientifically and mathematics 	<p>ACP – Meta-thinking Meta-cognition : The ability to knowingly use a wide range of thinking approaches and to transfer knowledge from one circumstance to other.</p> <p>Strategy- Planning : 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>	Guided reading
5) Conductors and Insulators	<ul style="list-style-type: none"> Use your knowledge to draw a parallel circuit Investigate where parallel circuits are used Create a parallel circuit with 2 bulbs 	<ul style="list-style-type: none"> Working scientifically, application Materials in the UAE 		
6) Test	<ul style="list-style-type: none"> Evaluate your knowledge. Recognise areas of improvement and what went well. Reflect on your knowledge. 	<ul style="list-style-type: none"> Revise and reflect 		

<p>7) Feedback</p> <p>B) <u>Magnetism</u> 1) Permanent magnets</p> <p>2) Electromagnets introduction</p>	<ul style="list-style-type: none"> Evaluate your knowledge. Recognise areas of improvement and what went well. Reflect on your knowledge. Use your knowledge to describe how to draw a magnetic field Justify how magnets can attract or repel Evaluate materials that are magnetic Use your knowledge to list the components needed for an electromagnet Explain how we can increase the strength of an electromagnet Plan an investigation 	<ul style="list-style-type: none"> Revise and reflect Working scientifically, application Hyperloop train Dubai-Abu Dhabi Recall, working scientifically 	<p>ACP – Linking Connection finding: The ability to use connections from past experiences to seek possible generalisations</p>	<p>Guided reading</p>
<p>3) Electromagnets investigation</p>	<ul style="list-style-type: none"> Setup a practical safely Use your knowledge to collect data Identify and evaluate a trend 	<ul style="list-style-type: none"> Recall, apply and evaluate Use of electromagnets in the UAE 	<p>VAA – Hard working Perseverance: The ability to keep going and not give up. Face obstacles and difficulties but never give up. Persist in effort. Work diligently and work systematically.</p>	<p>Guided reading</p>

4) Motors	<ul style="list-style-type: none"> • Use your knowledge to list the components of a motor • Investigate where motors are used • Evaluate factors that affect the speed of a motor 	<ul style="list-style-type: none"> • Working scientifically, application 	Not be satisfied until high quality, appropriate precision and the desired outcome are achieved.	
5) Generators 6) Test	<ul style="list-style-type: none"> • Use your knowledge to list the components of a generator • Investigate where generators are used • Evaluate factors that affect the output of a generator • Evaluate your knowledge. • Recognize areas of improvement and what went well. • Reflect on your knowledge. 	<ul style="list-style-type: none"> • Recall, application and working scientifically • Types of Motors and generators manufactured in the UAE • Revise and reflect 		Guided reading
7) Feedback	<ul style="list-style-type: none"> • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. 	<ul style="list-style-type: none"> • Revise and reflect 		Guided reading

<p><u>C) Speed, distance, time and moments</u> 1) Speed - Distance – Time</p> <p>2) Distance - Time graphs</p>	<ul style="list-style-type: none"> • Use your knowledge to state the units of speed, distance and time • Apply formula with speed, distance and time • Rearrange and apply the formula for speed, distance and time • Use your knowledge to explain what is meant by acceleration • Explain lines on distance time graphs in terms of motion • Create a distance time graph 	<ul style="list-style-type: none"> • Working scientifically, application • Recall, working scientifically and mathematics. • Distance-time graphs to describe a car travelling from the Frame to Burj Khalifa 	<p>VAA – Collaborative</p> <p>The ability to seek out opportunities to receive responses to your work.</p> <ul style="list-style-type: none"> -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 	<p>Guided Reading</p>
Half-term				
<p>3) Velocity-Time graphs</p> <p>4) Moments</p>	<ul style="list-style-type: none"> • Use your knowledge to link lines on a velocity time graph to the motion • Create a velocity time graph • Analyse and extract information from a velocity time graph • Use your knowledge to describe what is meant by a moment 	<ul style="list-style-type: none"> • Working scientifically, application • UAE Link: Working of <i>Speed cameras</i> in the UAE • Recall, application and working scientifically 	<p>ACP – Analysing <i>Critical or logical thinking</i></p> <p>The ability to deduct, hypothesise, reason, seek supporting evidence.</p> <p><i>Precision</i> The ability to work effectively within the rules of a domain.</p> <p>Complex and multi-step The ability to break down a task, decide on a suitable approach, and then act.</p> <p>problem solving</p>	<p>Guided reading</p>

<p>5) Moments investigation</p>	<ul style="list-style-type: none"> • Apply the formula for moments • Calculate a moment given the formula • Use your knowledge to set up a practical safely • Collect and evaluate data • Explain why we should repeat experiments 	<ul style="list-style-type: none"> • Working scientifically, application and mathematics • Moments and stability of buildings in the UAE 		
<p>6) Test</p> <p>7) Feedback</p> <p><u>D) Gas and pressure</u> 1) Gases</p>	<ul style="list-style-type: none"> • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. • Use your knowledge to describe the motion of particles in a gas 	<ul style="list-style-type: none"> • Revise and reflect • Revise and reflect • Recall, apply and evaluate • How gases behave in the UAE where temperature is high 	<p>ACP – Meta-thinking</p> <p>Self regulation: The ability to monitor, evaluate and self-correct</p> <p>ACP – Creating</p> <p>The ability to create new ideas through building on existing ideas or diverting</p> <p>VAA – Agile</p> <p>Enquiring: The ability to be:</p> <ul style="list-style-type: none"> • <i>Curious, be willing to work alone</i> • <i>be proactive</i> 	<p>Guided reading</p>

	<ul style="list-style-type: none"> • Explain what is meant by volume and temperature of a gas • Justify the link between volume and temperature 		<ul style="list-style-type: none"> • <i>keen to learn</i> • <i>show enterprise</i> • <i>think independently</i> <p>-Challenge assumptions and require evidence for assertions -Actively control your own learning -Move on from the absorption of knowledge and procedures to develop your own views and solutions</p>	
2) Pressure in gases	<ul style="list-style-type: none"> • Use your knowledge to describe what is meant by pressure • Explain the effect of increasing pressure • Evaluate why objects may collapse if temperature drops too quickly 	<ul style="list-style-type: none"> • Recall, working scientifically, evaluate and mathematics 		Guided reading
3) Pressure in liquids	<ul style="list-style-type: none"> • Use your knowledge to describe how pressure changes in a liquid • Explain why pressure changes in a liquid • Justify why dams are build thicker at the bottom 	<ul style="list-style-type: none"> • Working scientifically, application and mathematical skills 		

<p>4) Pressure in solids</p> <p>5) Research - Bernoulli principle and Magnus Effect</p>	<ul style="list-style-type: none"> • Use your knowledge to state the formula for pressure • Calculate pressure using the formula • Calculate the pressure a person exerts on the floor • Use your knowledge to describe the Bernoulli Principle • Use your knowledge to describe the Magnus Effect • Evaluate how the Magnus effect is used in sport 	<ul style="list-style-type: none"> • Recall, working scientifically and mathematics • Pressure in buildings such as Burj Al Arab and Burj Khalifa • Working scientifically, application, evaluate and mathematics. 		<p>Guided reading</p>
<p>6) Test</p> <p>7) Feedback</p>	<ul style="list-style-type: none"> • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. 	<ul style="list-style-type: none"> • Revise and reflect • Revise and reflect 		
END OF TERM				

