

Medium Term Plan 2021/2022      Subject: Science    Term: ST1    Topic from LTP:    Forces, Motion and Energy

Lessons per week: 3      Group(s): Rowsell    Accreditation ELC

Students will show achievement by being able to understand what is meant by force and energy and how energy is stored and transformed. They will use motion equations to calculate speed. Practical tasks encourage independence. The power point presentations will link to communication. Group work is a vital part of this unit to share their ideas.

	Lesson	Learning Intentions	Tasks	Assessed LIs
W1/2	Forces and friction	<ul style="list-style-type: none"> <li>• Students will be able to recall what a force is</li> <li>• They will be able to explain friction and know the direction of the friction force</li> <li>• They will investigate friction on different surfaces</li> </ul>	<ul style="list-style-type: none"> <li>• Forces investigation</li> <li>• Investigation into friction</li> <li>• Write up of investigation</li> <li>• Phet interactive investigation</li> </ul>	<b>I can</b> <ul style="list-style-type: none"> <li>• Recall what a force is</li> <li>• Explain what friction is and am able to draw on the correct direction</li> <li>• Make conclusions about the friction on different surfaces</li> </ul>
W3	Stopping distance	<ul style="list-style-type: none"> <li>• Students will recall what is meant by stopping distance</li> <li>• Students will be able to recall and use the equation for stopping distance</li> <li>• They will be able to explain how stopping distance can</li> </ul>	<ul style="list-style-type: none"> <li>• Mario cart Wii to look at different surfaces</li> <li>• Stopping distance poster</li> <li>• Worksheet on stopping distance equation</li> <li>• Reading of a graph of stopping distance and adding on own data</li> </ul>	<b>I can</b> <ul style="list-style-type: none"> <li>• Recall what is meant by stopping distance</li> <li>• Recall and use the equation for stopping distance</li> <li>• Explain how stopping distance can be affected by road surface and weather</li> </ul>

		<p>be affected by factors such as road surface and weather.</p> <ul style="list-style-type: none"> <li>To be able to read off and complete a simple bar chart</li> </ul>	<ul style="list-style-type: none"> <li>Reaction time simulation</li> </ul>	<ul style="list-style-type: none"> <li>Read off a simple bar chart</li> <li>Create a poster communicating understand of the factors that affect stopping distance</li> </ul>
W4	Motion	<ul style="list-style-type: none"> <li>Students will understand what is meant by acceleration and speed</li> <li>Student will be able to use speed and acceleration equations.</li> <li>They will be able to relate speed and acceleration to the area under graphs and the steepness of the graphs.</li> <li>They will understand what is meant by an anomaly in data and be able to spot anomalies</li> </ul>	<ul style="list-style-type: none"> <li>Work sheet on the motion equations</li> <li>Work sheets to identify motion graphs</li> <li>List relative speeds and Clicker 7 sort</li> <li>Data and investigation into the speed of sound</li> </ul>	<p><b>I can</b></p> <ul style="list-style-type: none"> <li>Show my understanding of the meaning of acceleration and speed</li> <li>Use the equations of motion and read of graphs</li> <li>Explain what an anomaly is and spot them in given data</li> </ul>
W5	Energy Transfer	<ul style="list-style-type: none"> <li>Students will be able to recall what energy is</li> <li>They will recognise energy stores</li> </ul>	<ul style="list-style-type: none"> <li>Matching energy stores – clicker 7</li> <li>Students should complete an energy circus demonstrating different energy transfers</li> </ul>	<p><b>I can</b></p> <ul style="list-style-type: none"> <li>Recall what energy is</li> <li>Recognise energy stores</li> <li>Know that energy cannot be created or destroyed</li> </ul>

		<ul style="list-style-type: none"> <li>• They will understand that energy cannot be created or destroyed only transformed from one form to another.</li> <li>• Students will be able to recognise energy inputs and outputs in simple devices</li> </ul>	labelling energy input and output.	<ul style="list-style-type: none"> <li>• Recognise energy inputs and outputs</li> </ul>
W6	Energy Wastage	<ul style="list-style-type: none"> <li>• Students should recall ways that energy can be wasted</li> <li>• They should be able to draw a simple Sankey diagram</li> <li>• They should be able to work out how much energy is being wasted from the Sankey diagram</li> <li>• They should plan an investigation to find the best way to reduce energy loss.</li> </ul>	<ul style="list-style-type: none"> <li>• Students should draw Sankey diagrams of light bulbs, TV etc. and be able to identify where energy is wasted.</li> <li>• Plan an investigation into the best insulator labelling equipment</li> </ul>	<p><b>I can</b></p> <ul style="list-style-type: none"> <li>• Recall ways energy can be wasted</li> <li>• Draw and interpret a simple Sankey diagram</li> <li>• Calculate how much energy is wasted using a Sankey diagram</li> <li>• Conclude the best way to reduce energy loss from an investigation</li> </ul>