

### Year 7 – Design and Technology

<b>Curriculum intent</b>	The aim of the curriculum is that through the delivery of the rubrics and a project-based approach learners are prepared for work and life in the 21 <sup>st</sup> century by allowing them to participate confidently and successfully in an increasingly technological world. Key concepts are highlighted at the start of the rubrics for KS3 groups and are recorded in learner books in order to clearly convey the project intent. The order for these follows that of the linear design model. A brief, research, specification, ideas, development, manufacture and evaluation. Mechanisms compliments the later learning on structures in the next project.					
<b>Term</b>	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<b>Knowledge</b>	<p><u>Mechanisms</u></p> <p>Single term project based learners will develop their technical vocabulary and understanding of the four types of motion, being able to apply these to common examples. Learners will conduct practical research into gears and pulleys, so they build an understanding of how these can be used to transmit power.</p>	<p><u>Mechanisms</u></p> <p>Single term project based learners will develop their technical vocabulary and understanding of the four types of motion, being able to apply these to common examples. Learners will conduct practical research into gears and pulleys, so they build an understanding of how these can be used to transmit power.</p>	<p><u>Mechanisms</u></p> <p>Single term project-based learners will develop their technical vocabulary and understanding of the four types of motion, being able to apply these to common examples. Learners will conduct practical research into gears and pulleys, so they build an understanding of how these can be used to transmit power.</p>	<p><u>Structures</u></p> <p>Frame structures and their components are explored in the second part of the project, with learners gaining an understanding of types of load each is suitable for. The role of triangulation and techniques for strengthening structures are developed as understanding grows.</p>	<p><u>Sustainability</u></p> <p>Sustainable Design: Making products and considering their impact on the natural world.</p> <p>Sustainability: Sustaining life on our planet for future generations.</p>	<p><u>Sustainability</u></p> <p>Sustainable Design: Making products and considering their impact on the natural world.</p> <p>Sustainability: Sustaining life on our planet for future generations.</p>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• 3 classes of lever</li> <li>• Linkages in action</li> <li>• Gears and pulleys</li> <li>• Pop-up celebration card</li> </ul>	<ul style="list-style-type: none"> <li>• 3 classes of lever</li> <li>• Linkages in action</li> <li>• Gears and pulleys</li> <li>• Pop-up celebration card</li> </ul>	<ul style="list-style-type: none"> <li>• 3 classes of lever</li> <li>• Linkages in action</li> <li>• Gears and pulleys</li> </ul>	<ul style="list-style-type: none"> <li>• Natural and manmade structures</li> <li>• Frame structures and</li> </ul>	<ul style="list-style-type: none"> <li>• The 6 R's</li> <li>• Precious plastics</li> <li>• Sustainable Timber</li> </ul>	<ul style="list-style-type: none"> <li>• The 6 R's</li> <li>• Precious plastics</li> <li>• Sustainable Timber</li> </ul>



	<ul style="list-style-type: none"> <li>Graphics based covering sketching in 2D and 3D</li> <li>Automaton</li> </ul>	<ul style="list-style-type: none"> <li>Graphics based covering sketching in 2D and 3D</li> <li>Automaton</li> </ul>	<ul style="list-style-type: none"> <li>Pop-up celebration card</li> <li>Graphics based covering sketching in 2D and 3D</li> <li>Automaton</li> </ul>	<p>their components</p> <ul style="list-style-type: none"> <li>Triangulation and strengthening structures</li> <li>Practical outcome</li> <li>Identifying modification</li> </ul>	<ul style="list-style-type: none"> <li>Recycling Metals</li> <li>The morals of sustainability</li> </ul>	<ul style="list-style-type: none"> <li>Recycling Metals</li> <li>The morals of sustainability</li> </ul>
<b>Assessments</b>	Mechanisms Test with high value question.	Mechanisms Test.	Outcome from card levers project.	Structures test, with high value question. Structures written evaluation.	Sustainability test, with high value question.	Outcome.
<b>Enrichment</b>	<a href="https://learning.science.museumgroup.org.uk/resources/?subject=design-and-technology">https://learning.science.museumgroup.org.uk/resources/?subject=design-and-technology</a>	<a href="https://www.bbc.co.uk/bitesize/topics/z39mhyc/resources/1">https://www.bbc.co.uk/bitesize/topics/z39mhyc/resources/1</a>	<a href="https://www.bbc.co.uk/bitesize/topics/zpv8q6f/resources/1">https://www.bbc.co.uk/bitesize/topics/zpv8q6f/resources/1</a>	<a href="https://www.bbc.co.uk/bitesize/topics/zpv8q6f/resources/1">https://www.bbc.co.uk/bitesize/topics/zpv8q6f/resources/1</a>	<a href="https://www.bbc.co.uk/bitesize/guides/znmnb9q/revision/1">https://www.bbc.co.uk/bitesize/guides/znmnb9q/revision/1</a>	<a href="https://www.bbc.co.uk/bitesize/subjects/zfr9wmn">https://www.bbc.co.uk/bitesize/subjects/zfr9wmn</a>



**Rayner Stephens**  
HIGH SCHOOL