

KS4 CURRICULUM: RESISTANT MATERIALS (YEAR 10)

<p><u>Overview</u></p> <p>In Resistant Materials you will learn about:</p> <ul style="list-style-type: none"> • Core design and technology principles with some emphasis on maths and science skills • In-depth knowledge of how different materials and manufacturing processes are used to design and make products.
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	Focus / Topic	Knowledge & Skills	Assessment
Autumn 1	Core Design and Technology Content <ul style="list-style-type: none"> • Mini contextual challenge (Acoustic Phone Stand) 	<ul style="list-style-type: none"> • Impact of new and emerging technologies • Informing design developments • Technical Drawing (Isometric, One point and third angle orthographic) • CAD/CAM programmes (sketch up and Techsoft 2D) 	<ul style="list-style-type: none"> • Half termly mock-exam • Maths in Technology Quiz on Google Classroom
Autumn 2	Core Design and Technology Content <ul style="list-style-type: none"> • Mini contextual challenge (Acoustic Phone Stand) 	<ul style="list-style-type: none"> • Electronic systems • The use of programmable components • The categorisation of the types, properties and structure of polymers • The categorisation of the types, properties and structure of metals and timbers 	<ul style="list-style-type: none"> • Assessment week (w/b 11th Nov 2019)
Spring 1	Specialist Material Categories (RM) <ul style="list-style-type: none"> • Mini Contextual challenge – Manufacture (CAD/CAM Furniture/Building Design) 	<ul style="list-style-type: none"> • How energy is generated and stored • Modern and smart materials • The functions of mechanical devices • Developments in modern and smart materials, composite materials and technical materials 	<ul style="list-style-type: none"> • Half termly mock-exam • Maths in Technology Quiz on Google Classroom
Spring 2	Specialist Material Categories (RM) <ul style="list-style-type: none"> • Mini Contextual challenge – Manufacture (CAD/CAM Furniture/Building Design) 	<ul style="list-style-type: none"> • Forces and mechanisms • CAD/CAM Programmes (Sketch Up and Techsoft 2D) • Processes used to manufacture products to different scales of production. • Specialist techniques used for high quality prototypes. • Surface treatments and finishes. 	<ul style="list-style-type: none"> • Half termly mock-exam • Maths in Technology Quiz on Google Classroom
Summer 1	Specialist Material Categories (RM) <ul style="list-style-type: none"> • Mini Contextual challenge – Manufacture (CAD/CAM Furniture/Building Design) 	<ul style="list-style-type: none"> • Investigate social and economic challenges • Investigate the work of others • Avoiding design fixation • Developing design ideas 	<ul style="list-style-type: none"> • Half termly mock-exam • Maths in Technology Quiz on Google Classroom
Summer 2	Non-exam assessment <ul style="list-style-type: none"> • (Briefs released by the exam board in June) 	<ul style="list-style-type: none"> • Contextual challenge – Investigate • Contextual challenge – Specification 	<ul style="list-style-type: none"> • End of Year exams (w/b 22nd Jun 2020 for 2 weeks)

<p><u>Further Information</u></p> <ul style="list-style-type: none"> • Design and Technology – Component 1: Written paper (100 Marks – 2 Hours) (50% of GCSE 9-1) • Iterative Design Challenge – Component 2: Non-exam Assessment (100 Marks - Approx. 40 hours) (50% of GCSE)
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