

CORE KNOWLEDGE

What I will know and understand by the end of Year 10.



This year in Engineering we will be learning		This links to:	Key Vocabulary:
1	Unit 1: Introduction to Engineering Manufacture AO1 Demonstrate knowledge and understanding - of an engineering product/ tools and equipment. AO2 Apply skills (including practical skills), knowledge and understanding in a variety of contexts and in planning and carrying out investigations and tasks - plan the making of an engineering product.	This component will support you in progressing to a Level 2 or 3 qualification in a range of engineering sectors, for example aerospace, automotive, electrical, electronic, manufacturing, marine, mechanical or telecommunications.	<ul style="list-style-type: none"> Data sheets Detail views Engineering drawing Isometric Manufacturing specification Orthographic projection Risk assessment Sectional view Title block
	2 AO3 Analyse and evaluate information, making reasoned judgements and presenting conclusions – reading and understanding engineering drawings		
3 Focused Unit 1 Task You will begin your externally set coursework assignment covering the three assessment objectives	The work done in years 7, 8 & 9 working with design briefs to solve a problem or create a solution.	<ul style="list-style-type: none"> Data sheets Detail views Engineering drawing Isometric Manufacturing specification Orthographic projection Risk assessment Sectional view Title block 	
4 AO1 Demonstrate knowledge and understanding AO2 Apply skills (including practical skills), knowledge and understanding in a variety of contexts and in planning and carrying out investigations and tasks AO3 Analyse and evaluate information, making reasoned judgements and presenting conclusions			Anthropometrics BS8888 Conventions CAD Visuals Datum Points Ergonomics OHM's law Operational parameters Orthographic View
5 Unit 2 Designing engineering products	The work done in years 7, 8 & 9 working with design briefs to solve a problem or create a solution.		
6 AO1 Demonstrate knowledge and understanding - of an existing component. AO2 Apply skills (including practical skills), knowledge and understanding in a variety of contexts and in planning and carrying out investigations and tasks – to adapt an existing component. AO3 Analyse and evaluate information, making reasoned judgements and presenting conclusions – adapting or improving an existing component.			
Target Grade:	AP1:	AP2:	AP3:

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This year in Engineering, we will be learning		This links to:	Key Vocabulary:	
1	Unit 2 design of a modification to an existing product to meet the requirements of a brief released from the exam board. AO1 Demonstrate knowledge and understanding - of an engineering product/ tools and equipment. AO2 Apply skills (including practical skills), knowledge and understanding in a variety of contexts and in planning and carrying out investigations and tasks - plan the making of an engineering product.	The work done in years 7, 8 & 9 working with design briefs to solve a problem or create a solution.	<ul style="list-style-type: none"> Anthropometrics BS8888 Conventions CAD Visuals Datum Points Ergonomics OHM's law Operational parameters Orthographic View 	
2	AO3 Analyse and evaluate information, making reasoned judgements and presenting conclusions – reading and understanding engineering drawings			
3	Unit 3 – External exam preparation – Solving engineering problems: <ul style="list-style-type: none"> Understanding the effects of engineering achievements Understanding properties of engineering materials Understanding methods of preparation, forming, joining and finishing engineering materials Solving engineering problems 	This links to unit 1 and 2 through application, knowledge and skills for example, understanding engineered drawings, solving engineered problems using mathematics and relating material properties to solutions. Subject links – Maths, Science, Art	<ul style="list-style-type: none"> Detail views Engineering drawing Isometric Manufacturing specification Orthographic projection Risk assessment Tolerance Anthropometrics BS8888 Conventions CAD Visuals Datum Points Ergonomics 	
4	Unit 2 – design of a modification to an existing product to meet the requirements of a brief released from the exam board. <ul style="list-style-type: none"> Understanding function and meeting requirements Proposing design solutions Communicating an engineered design solution Solving engineering problems 	The work done in years 7, 8 & 9 working with design briefs to solve a problem or create a solution.	<ul style="list-style-type: none"> Anthropometrics BS8888 Conventions CAD Visuals Datum Points Ergonomics OHM's law Operational parameters Orthographic view 	
5	Unit 3 – External exam preparation – Solving engineering problems: <ul style="list-style-type: none"> Understanding the effects of engineering achievements Understanding properties of engineering materials Understanding methods of preparation, forming, joining and finishing engineering materials Solving engineering problems 	This links to unit 1 and 2 through application, knowledge and skills for example, understanding engineered drawings, solving engineered problems using mathematics and relating material properties to solutions. Subject links – Maths, Science, Art	<ul style="list-style-type: none"> Detail views Engineering drawing Isometric Manufacturing specification Orthographic projection Risk assessment Tolerance Anthropometrics BS8888 Conventions CAD Visuals Datum Points Ergonomics 	
6				
Target Grade:		AP1:	AP2:	AP3: