Ormiston Park Academy Curriculum Map (Yrs 7-11) Updated September 2019 **Department: DESIGN AND TECHNOLOGY** **Curriculum Leader: C BERRY**

	INTENT	IMPLEMENTATION	IMPACT
	• To engage students in participation in Design and Make Activities at KS3 across both Curriculum Areas • To educate students about healthy and balanced lifestyles • To engage students in a vocational based Curriculum at KS4 and provide opportunities to understand the Engineering Sectors and the Hospitality Industry	• Students is Key Stage 3 are taught for 1 hour each week for 20/21 weeks and then swap to the next curriculum area. • The Key stage 3 year is split between Design and Technology and Food Technology. • Under design and technology, the students will experience a range of different material disciplines including Textiles, Wood, Metal and Plastics. • Students across both curriculum areas will complete design and make practical based projects that will provide the students will knowledge of skills and techniques for the different tools, equipment and processes needed to success at key stage 4 and beyond. • At the end of each half term the students in Key Stage 3 will complete a • Throughout the Vocational courses, schemes of learning and full lesson plans are available to provide support to all staff within the department. They can be easily utilised for cover lessons when required. • All schemes of learning and lesson plans are planned, developed and reviewed by the subject leads to ensure all students are delivered the content in the same coherent sequence across the three years of delivery. • Lesson resources across both Key stages, have been designed and produced by the subject specialists across the department, link to both the NCFE and WJEC Specifications for the Key Stage 4 vocational courses.	• Students will be able to use the design process learnt throughout Key Stage 3 to successfully produce design and make outcomes independently. • Student will be able to apply their skills and knowledge of tools and techniques to produce practical outcomes for their design and make projects. • By the end of Key Stage 3 the students will have gained the necessary skills to move forward into either of the two options areas. • By the end of Key stage 4 students will have gained knowledge of the unit 1 in both subject areas to enable them to successfully complete the external assessment that provides 40% of the overall grade. • Student will work towards the remaining 60% of their overall grade in each of the specific vocational areas. • Students will be able to access post 16 courses or an apprenticeship in either of the two vocational fields of Engineering and Hospitality and Catering. • Students will aspire to continue their education and attend university in either of the vocational areas to support a degree or an apprenticeship.
	KS3 OVERVIEW		KS4 OVERVIEW
	• Prior to KS3 students will have experienced some aspects of Design and Technology and Food Technology. This would usually be delivered through 'Science' and 'Topic'. However, this is not consistent across all schools in the borough, therefore the students arrive with very varied skills, knowledge and understanding. • Design and Technology and Food Technology are taught on a rotation at Key Stage 3. Each class has 20/21 weeks in each area. • During Year 9 Students are able to opt to continue with the subject and choose either Engineering or Hospitality and Catering.		• Key Stage 4 students move away from the traditional Design and Technology and Food technology focus and study Engineering or Hospitality and Catering • Typical curriculum allocation for Key Stage 4 is 3 hours per week. • The Engineering qualification is structured into two units, unit 1 is an external assessment with a 40% weighting and unit 2 is internally assessed with 60% weighting of the overall grade. • The Hospitality and Catering qualification is structured into two units, unit 1 is an external assessment with a 40% weighting and unit 2 is internally assessed with 60% weighting of the overall grade.

	HT1	HT2	HT3	HT4	HT5	HT6
Year 11 2020	Key Content: Revision: Exam 28th November 2019 AM • 1.2 – The Health and Safety Legislation Governing Engineering • 1.1 – Engineering Discipline through Projects and Products • 2.1 – Application of SI Units of Measurements • 2.2 – Equations used to Describe and Calculate Energy, Forces and Motion, Electrical, Geometry • 3.1 – Reading Engineering Drawings • 4.1 – Properties and Characteristics of Materials •	Key Content: Revision: Exam 28th November 2019 AM • 5.1 – Tools, Equipment and Machines • 5.2 – Safe and Correct Use Synopsis preparation and introduction • 1.1 – Engineering Drawings – Hand drawn • 2.1 – Engineering Drawings – CAD	Key Content: Externally Set Synopsis – Deadline for completion 13th March 2020 • 1.1 – Engineering Drawings – Hand drawn • 2.1 – Engineering Drawings – CAD • 3.1 – Production Planning • 4.1 – Skills and Techniques • 4.2 – Safe and Correct Use of Tools, Equipment and Machines Resit Revision (If needed): Exam Date 19th March 2020 • 1.2 – The Health and Safety Legislation Governing Engineering • 1.1 – Engineering Discipline through Projects and Products • 2.1 – Application of SI Units of Measurements • 2.2 – Equations used to Describe and Calculate Energy, Forces and Motion, Electrical, Geometry • 3.1 – Reading Engineering Drawings • 4.1 – Properties and Characteristics of Materials • 5.1 – Tools, Equipment and Machines • 5.2 – Safe and Correct Use	Key Content: Externally Set Synopsis – Deadline for completion 13th March 2020 • 4.1 – Skills and Techniques • 4.2 – Safe and Correct Use of Tools, Equipment and Machines Resit Revision (If needed): Exam Date 19th March 2020 • 1.2 – The Health and Safety Legislation Governing Engineering • 1.1 – Engineering Discipline through Projects and Products • 2.1 – Application of SI Units of Measurements • 2.2 – Equations used to Describe and Calculate Energy, Forces and Motion, Electrical, Geometry • 3.1 – Reading Engineering Drawings • 4.1 – Properties and Characteristics of Materials • 5.1 – Tools, Equipment and Machines • 5.2 – Safe and Correct Use	Key Content: Externally Set Synopsis – Deadline for completion TBC • 1.1 – Engineering Drawings – Hand drawn • 2.1 – Engineering Drawings – CAD • 3.1 – Production Planning • 4.1 – Skills and Techniques • 4.2 – Safe and Correct Use of Tools, Equipment and Machines	
	Key Skills: • Key Terminology • Research and Analysis • Exam skills and terms	Key Skills: • Hand tools and manufacturing processes • Precision and accuracy • Analysis and working to a criteria • Exam skills and terms	Key Skills: • Hand tools and manufacturing processes • Precision and accuracy • Analysis and working to a criteria • Exam skills and terms	Key Skills: • Hand tools and manufacturing processes • Precision and accuracy • Analysis and working to a criteria • Exam skills and terms	Key Skills: • Hand tools and manufacturing processes • Precision and accuracy • Analysis and working to a criteria	
Homework	• Engineering Workbook • Exam Practice	• Engineering Workbook • Exam Practice	• Engineering Workbook • Exam Practice	• Engineering Workbook • Exam Practice	• Engineering Workbook • Exam Practice	
CEIAG & Culture Capital	• Introduction the world of Engineering • Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • STEM Trip • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • University talks/visit • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	
Assessment Opportunities	Mock Paper 1	Mock Paper 2	Mock Paper 1 Synopsis assessment criteria	Mock Paper 2 Synopsis assessment criteria	Synopsis assessment criteria	
Year 10	Key Content:	Key Content:	Key Content:	Key Content:	Key Content:	Key Content:

2021
 	
Switch to NCFE Technical Award Engineering November 2018
	• The Health and Safety Legislation Governing Engineering
	• Application of SI Units of Measurements
	• Engineering Discipline through Projects and Products
	  ○ Aerospace Engineering
	  ○ Communications Engineering
	  ○ Chemical Engineering
	  ○ Civil engineering
	  ○ Automotive Engineering
	  ○ Biomedical Engineering
	  ○ Software Engineering
		• Equations used to Describe and Calculate Energy, Forces and Motion, Electrical, Geometry
		• Reading Engineering Drawings
		• Properties and Characteristics of Materials
		  ○ Properties in all sectors
		  ○ Characteristics – Aesthetics and Environmental impact
		  ○ Materials – Metals, Polymers, Woods (recap) Ceramics Composites
		• Material investigation
		
		Revision and exam preparation:
		• The Health and Safety Legislation Governing Engineering
		• Engineering Discipline through Projects and Products
		• Application of SI Units of Measurements
			Properties and Characteristics of Materials:
			• Properties in all sectors
			• Characteristics – Aesthetics and Environmental impact
			• Materials – Metals, Polymers, Woods (recap) Ceramics Composites
			Safe and Correct Uses:
			• Quality Control
			• Quality Assurance
			Tools, Equipment and Machines:
			• Introduction to the workshop practices for engineering
			
			Revision and exam preparation:
			• Application of SI Units of Measurement
			• Equations – Energy, Force, and Motion & Electrical and Geometric
			• Health and Safety Legislation
				Synopsis preparation
				• 1.1 – Engineering Drawings – Hand drawn
				2.1 – Engineering Drawings – CAD
				Revision and exam preparation:
				• 1.2 – The Health and Safety Legislation Governing Engineering
				• 1.1 – Engineering Discipline through Projects and Products
				• 2.1 – Application of SI Units of Measurements
					• Mock Synopsis Task – Crane Task
					  ○ 1.1 – Engineering Drawings – Hand drawn
					  ○ 2.1 – Engineering Drawings – CAD
					  ○ 3.1 – Production Planning
					  ○ 4.1 – Skills and Techniques
					  ○ 4.2 – Safe and Correct Use of Tools, Equipment and Machines
					
					Revision and exam preparation:
					• 4.1 – Properties and Characteristics of Materials
					• 5.1 – Tools, Equipment and Machines
					• 5.2 – Safe and Correct Use
						• Mock Synopsis Task – Crane Task
						  ○ 1.1 – Engineering Drawings – Hand drawn
						  ○ 2.1 – Engineering Drawings – CAD
						  ○ 3.1 – Production Planning
						  ○ 4.1 – Skills and Techniques
						  ○ 4.2 – Safe and Correct Use of Tools, Equipment and Machines

	Key Skills: • CAD/CAM – further skills • Hand tools and manufacturing processes • Precision and accuracy • Researching • Analysis and • working to a criteria	Key Skills: • Hand tools and manufacturing processes • Precision and accuracy • Researching • Analysis and working to a criteria • Understanding mechanisms • Understanding types of mechanisms	Key Skills: • Hand tools and manufacturing processes – Soldering • Use of CAD/CAM • Precision and accuracy • Researching • Testing and Evaluating • Exams skills	Key Skills: • Exam skills and terms • Product Analysis • Design and development • Hand tools and manufacturing processes • Precision and accuracy • Researching • Analysis and working to a criteria • Use of CAD/CAM	Key Skills: • Exam skills and terms • Understanding of CAD/CAM • Product Analysis • Design and development • Hand tools and manufacturing processes • Precision and accuracy • Researching • Analysis and working to a criteria	Key Skills: • Exam skills and terms • Understanding of CAD/CAM • Product Analysis • Design and development • Hand tools and manufacturing processes • Precision and accuracy • Researching • Analysis and working to a criteria
Homework	• Engineering Workbook • Exam Practice	• Engineering Workbook • Exam Practice	• Engineering Workbook • Exam Practice	• Engineering Workbook • Exam Practice	• Engineering Workbook • Exam Practice	• Engineering Workbook • Exam Practice
CEIAG & Culture Capital	• Introduction the world of Engineering • Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • STEM Speaker • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • STEM TRIP • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • STEM Speaker • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding of keeping safe in the work place and of Health and Safety in the workplace by following government legislation. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.
Assessment Opportunities	End of Half Term Assessment	Mock Paper 1	End of Half Term Assessment	Mock Paper 2 Synopsis assessment criteria	End of Half Term Assessment Synopsis assessment criteria	Mock Paper 3 Synopsis assessment criteria
Year 9 2022	Key Content: • Brand Identity – Coca Cola (modelling)	Key Content: • Brand Identity – Coca Cola (modelling) • Material Properties - Introduction to Biomimicry – Chair Project	Key Content: • Material Properties - Introduction to Biomimicry – Chair Project Introduction to Engineering: • Electronics and Electrical engineering • Aerospace Engineering • Communications Engineering • Chemical Engineering • Sustainability • Renewable Energy				
	Key Skills: • Hand tools and manufacturing processes • Precision and accuracy • Researching • Analysis and working to a • criteria	Key Skills: • Hand tools and manufacturing processes • Precision and accuracy • Researching • Analysis and working to a criteria • Understanding Biomimetic design • Understanding materials properties for prototyping • Understanding the skills and techniques of prototyping	Key Skills: • Precision and accuracy • Researching • Testing and Evaluating • Exams skills • Introduction to CAD – modelling and prototyping using CAD • Introduction to CAD Engineering drawings			
Homework	• Investigating the past and present – The world of Engineering and Pioneering Engineers throughout History. • Materials investigation – Understanding Plastics • Health and Safety Quiz • Keywords Spellings	• Investigating the past and present – The world of Engineering and Pioneering Engineers throughout History. • Tools and Equipment investigation – Understanding and Identifying Tools and Equipment • Keywords Spellings/Definitions	• Investigating the past and present – The world of Engineering and Pioneering Engineers throughout History. • Materials investigation – Understanding Metals • Keywords Spellings/Definitions			

CEIAG & Culture Capital	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Introduction the world of Engineering • Keeping safe and the correct use of tools and equipment in the workshop/food room. • Engineering Day • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.
Assessment Opportunities	End of Project Assessment	End of Project Assessment	End of Rotation Test
Year 8 2023	Key Content: • Mechanisms, Cams and Levers – Pin Ball Toy/Cam Toy	Key Content: • Mechanisms, Cams and Levers – Pin Ball Toy/Cam Toy	Key Content: • Mechanisms, Cams and Levers – Pin Ball Toy
	Key Skills: • Understanding of Mechanisms and Cams • Research and analysis • Design development • Rendering and annotation • Hand Tools – Coping saw, tenon saw, try square, drills • Marking and measuring	Key Skills: • Understanding of Mechanisms and Cams • Research and analysis • Design development • Rendering and annotation • Hand Tools – Coping saw, tenon saw, try square, drills • Marking and measuring	Key Skills: • Understanding of CAD • Understanding of CAM • Design development • Rendering and annotation • Materials processes for plastics– Vacuum Former •
Homework	• Investigating the past and present – The world of Engineering and Pioneering Engineers throughout History. • Materials investigation – Understanding Plastics • Health and Safety Quiz • Keywords Spellings	• Investigating the past and present – The world of Engineering and Pioneering Engineers throughout History. • Tools and Equipment investigation – Understanding and Identifying Tools and Equipment • Keywords Spellings/Definitions	• Investigating the past and present – The world of Engineering and Pioneering Engineers throughout History. • Materials investigation – Understanding Metals • Keywords Spellings/Definitions
CEIAG & Culture Capital	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Introduction the world of Designing • Keeping safe and the correct use of tools and equipment in the workshop/food room. • Design Based Trip • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.
Assessment Opportunities	End of Health and Safety Assessment	End of Project Assessment	End of Rotation Test
Year 7 2024	Key Content: • Introduction to the workshop • Baseline Assessment – Bird Memo Stands	Key Content: • Baseline Assessment – Bird Memo Stands • Textiles - Monsters	Key Content: • Textiles - Monsters
	Key Skills: • Designing with simple annotations and introduction to rendering • Cutting and shaping – coping saw • Product finishes – smoothing and understanding of sand paper grading • Drilling – hand drill	Key Skills: • Extended annotations with justifications • Rendering skills • Cutting and shaping – coping saw, tenon saw, and fret saw • Product finishes – smoothing and quality of finish • Understanding of Lamination	Key Skills: • Development of finishing techniques • Colour theory • Annotation and analysis skills • Cutting and drilling – Pillar drill, Tenon saw, Coping saw, and fret saw
Homework	• Investigating the past and present – The world of Engineering and Pioneering Engineers throughout History. • Materials investigation – Understanding Timbers	• Investigating the past and present – The world of Engineering and Pioneering Engineers throughout History. • Tools and Equipment investigation – Understanding and Identifying Tools and Equipment	• Investigating the past and present – The world of Engineering and Pioneering Engineers throughout History. • Materials investigation – Understanding Plastics
CEIAG & Culture Capital	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Design and Technology Day • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.	• Keeping safe and the correct use of tools and equipment in the workshop/food room. • Understanding the safe and correct uses of tools. • Investigation the origin the materials and environmental impact of the materials that we use to produce products.
Assessment Opportunities	End of Project Assessment	End of Project Assessment	End of Rotation Test