

Oasis Media City Subject Curriculum Plan



Subject: Design Technology

Head of Subject: Mr Brandy

Date updated: Sept. 2021

This document is an overview of the learning that students will experience within their subject area. This is a working document that provides teachers, students and parents with a map of key content that will be delivered during lessons in each year group.

Year Term:	Half	1 (7 weeks)	2 (8 weeks)	3 (6 weeks)	4 (6 weeks)	5 (5 weeks)	6 (7 weeks)
		Carousel 1			Carousel 2		
8	<i>Topic(s):</i>	<p>Amplifier project: The Audio amplifier project is an introduction to The subject of amplification. Emphasis has been placed on providing a means to a quality design outcome.</p> <p>OBJECTIVES: Pupils should understand:</p> <ul style="list-style-type: none"> • The need to investigate the background to a problem. • How to select appropriate components to build simple electronic circuits. • The importance of planned manufacture. • How to improve a product by evaluation. 	<p>Architecture: Design and Development: Design and model development</p> <p>By the end of the series of lessons they will have designed and 3D printed an object and learnt about the basic theory of 3D printing. The materials can be taught in class or used as extended learning for homework or self-guided learning. All materials can be edited/differentiated to reflect the ability of your students.</p>	<p>Architecture: Design and Development: Electronics- Commercial lighting</p> <p>By the end of the series of lessons they will have designed and 3D printed an object and learnt about the basic theory of 3D printing. The materials can be taught in class or used as extended learning for homework or self-guided learning. All materials can be edited/differentiated to reflect the ability of your students.</p>	<p>Amplifier project: The Audio amplifier project is an introduction to The subject of amplification. Emphasis has been placed on providing a means to a quality design outcome.</p> <p>OBJECTIVES: Pupils should understand:</p> <ul style="list-style-type: none"> • The need to investigate the background to a problem. • How to select appropriate components to build simple electronic circuits. • The importance of planned manufacture. • How to improve a product by evaluation. 	<p>Architecture: Design and Development: Design and model development</p> <p>By the end of the series of lessons they will have designed and 3D printed an object and learnt about the basic theory of 3D printing. The materials can be taught in class or used as extended learning for homework or self-guided learning. All materials can be edited/differentiated to reflect the ability of your students.</p>	<p>Architecture: Design and Development: Design and model development</p> <p>By the end of the series of lessons they will have designed and 3D printed an object and learnt about the basic theory of 3D printing. The materials can be taught in class or used as extended learning for homework or self-guided learning. All materials can be edited/differentiated to reflect the ability of your students.</p>
	<i>Key Words(1 p/wk):</i>	Prototype CAD CAM	Prototype CAD CAM	Electronics- Commercial lighting	<ul style="list-style-type: none"> ○ COMPONENT ○ BATTERY 	<ul style="list-style-type: none"> ○ COMPONENT ○ BATTERY 	<ul style="list-style-type: none"> ○ COMPONENT ○ BATTERY

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	<i>Mitigating Lost Learning</i>	Review of Health and Safety using the Health and safety Passports. Additional module based on CAD CAM that can to completed online Recap on Key words and recap using last year knowledge organisers. Will need ICT facilities					
	<i>Everyday Tasks:</i>	CAD Cam - helps with designing increasingly technological world - strong effect. project management - through the design process. health and safety, using tools correctly. Evaluation process from start to end.					
10	<i>Topic(s):</i>	<p>NEA Preparation. Design a educational toy to support a developing country REASEACH IN DESIGN CONTEXT GCSE Exam Prep</p> <p>EXAM Prep: new and emerging technologies</p> <ul style="list-style-type: none"> • energy generation and storage • developments in new materials 	<p>NEA Preparation. Design a sustainable solution to support a developing country Initial Design / Development Designs GCSE Exam Prep</p> <p>selection of materials or components</p> <ul style="list-style-type: none"> • forces and stresses • ecological and social footprint • sources and origins 	<p>NEA Preparation. Design a sustainable solution to support a developing country Final design / Modelling</p> <p>GCSE Exam Prep</p> <p>investigation, primary and secondary data</p>	<p>NEA Preparation. Design a sustainable solution to support a developing country Final Prototype</p> <p>GCSE Exam Prep</p> <ul style="list-style-type: none"> • environmental, social and economic challenge • the work of others • design strategies • communication of design ideas 	<p>2020 – 2021 GCSE NEA Start GCSE Exam Prep GCSE NEA Start: Initial Design / Development Designs</p> <p>Substantial design and make task</p> <ul style="list-style-type: none"> • Assessment criteria: • Identifying and investigating design possibilities • Producing a design brief and specification • Generating design ideas • Developing design ideas • Realising design ideas • Analysing & evaluating 	<p>2020 – 2021 GCSE NEA Start GCSE Exam Prep GCSE NEA Start: Initial Design / Development Designs</p> <p>Substantial design and make task</p> <ul style="list-style-type: none"> • Assessment criteria: • Identifying and investigating design possibilities • Producing a design brief and specification • Generating design ideas • Developing design ideas • Realising design ideas • Analysing & evaluating tolerances • material management

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		<ul style="list-style-type: none"> • systems approach to designing • mechanical devices • materials and their working properties 	<ul style="list-style-type: none"> • using and working with materials • stock forms, types and sizes • scales of production • specialist techniques and processes • surface treatments and finishes. 	<ul style="list-style-type: none"> • environmental, social and economic challenge • the work of others • design strategies • communication of design ideas • prototype development • selection of materials and components • 	<ul style="list-style-type: none"> • prototype development 		<ul style="list-style-type: none"> • specialist tools and equipment • specialist techniques and processes.
	<i>Key Words(1 p/wk):</i>	Exam Key terms. Knowledge Organisers HT1	Exam Key terms. Knowledge Organisers HT2	Exam Key terms. Knowledge Organisers HT3	Exam Key terms. Knowledge Organisers HT4		
	<i>Link to context/Character:</i>						
	<i>Assessment Type:</i>						
	<i>Everyday Tasks:</i>	CAD Cam - helps with designing increasingly technological world - strong effect. project management - through the design process. health and safety, using tools correctly. Evaluation process from start to end.					
	<i>Mitigating Lost Learning</i>	Drop down days for the completion of coursework and practical refreshers . Recap on Key words and recap using last year knowledge organisers.					
11	<i>Topic(s):</i>	GCSE NEA Start: Initial Design / Development Designs	GCSE NEA Start: Final design / Modelling	GCSE NEA Start: Final design / Final Prototype / Evaluations	GCSE Exam Prep Revision Topics	GCSE Exam Prep Revision Topics	N/A

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	<p>Substantial design and make task</p> <ul style="list-style-type: none"> • Assessment criteria: • Identifying and investigating design possibilities • Producing a design brief and specification • Generating design ideas • Developing design ideas • Realising design ideas • Analysing & evaluating 	<p>Substantial design and make task</p> <ul style="list-style-type: none"> • Assessment criteria: • Identifying and investigating design possibilities • Producing a design brief and specification • Generating design ideas • Developing design ideas • Realising design ideas • Analysing & evaluating 	<p>Substantial design and make task</p> <ul style="list-style-type: none"> • Assessment criteria: • Identifying and investigating design possibilities • Producing a design brief and specification • Generating design ideas • Developing design ideas • Realising design ideas • Analysing & evaluating 	<p>Section A – Core technical principles (20 marks) A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding.</p> <p>Section B – Specialist technical principles (30 marks) Several short answer questions (2–5 marks) and one extended response to assess a more in depth knowledge of technical principles.</p> <p>Section C – Designing and making principles (50 marks) A mixture of short answer and extended response questions.</p>	<p>Section A – Core technical principles (20 marks) A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding.</p> <p>Section B – Specialist technical principles (30 marks) Several short answer questions (2–5 marks) and one extended response to assess a more in depth knowledge of technical principles.</p> <p>Section C – Designing and making principles (50 marks) A mixture of short answer and extended response questions.</p>	
Key Words(1 p/wk):	Exam Key terms. Knowledge Organisers HT1	Exam Key terms. Knowledge Organisers HT2	Exam Key terms. Knowledge Organisers HT3	Exam Key terms. Knowledge Organisers HT4	Exam Key terms. Knowledge Organisers HT5	
Link to context/Character:						
Assessment Type:	5 April 2019 Coursework deadline for GCSE Design & Technology	5 April 2019 Coursework deadline for GCSE Design & Technology	5 April 2019 Coursework deadline for GCSE Design & Technology	22 May 2020 Exam for GCSE Design & Technology (8552/W) Series: June 2020 Start time: pm Duration: 2h	22 May 2020 Exam for GCSE Design & Technology (8552/W) Series: June 2020 Start time: pm Duration: 2h	
Mitigating Lost Learning	Drop down days for the completion of coursework and practical refreshers. Recap on theory on pre-recorded lessons on Microsoft stream					

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Key Questions:

1. What is the overarching intent for your curriculum?

To prepare students to participate confidently and successfully in an increasingly technological world. Students will gain awareness and learn from wider influences on Design and Technology including historical, social, cultural, environmental and economic factors. Students will get the opportunity to work creatively when designing and making and apply technical and practical expertise.

Design and Technology specification sets out the knowledge, understanding and skills required to undertake the iterative design process of exploring, creating and evaluating. The majority of the specification should be delivered through the practical application of this knowledge and understanding.

2. How does this curriculum build student's knowledge of the world around them both locally and nationally?

Design and Technology specification sets out the knowledge, understanding and skills required to undertake the iterative design process of exploring, creating and evaluating. The majority of the specification should be delivered through the practical application of this knowledge and understanding. From KS3 there is a strong focus in careers, using building contractors such as Laing O'Rourke and architectural focus, working with practitioners from Middlewood Lock.

3. How is this curriculum designed to engage students and develop a passion for the subject?

Design and Technology (D&T) is the inspiring, rigorous and practical subject which prepares all young people to live and work in the designed and made world. The curriculum builds on the knowledge that they acquire from year 7. With design technology, electronic, graphic design, architecture, CAD CAM are all a part of the projects that progressively build towards their GCSE.

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4. How does this curriculum cater for the needs of our students?

D&T is often one of a child's favourite subjects. Children like making decisions for themselves and doing practical work. They love creating products they can see, touch – and even taste – for themselves. They feel proud to have done so.

D&T brings learning to life. It is a motivating context for discovering literacy, mathematics, science, art, PSHE and ICT. Primary Design and Technology also provides a firm basis for later learning in the subject and a platform for developing skills in literacy and numeracy.

5. How is assessment used to improve learning?

Assessment focused on the NEA (coursework and practical) and the EA (Exam assessment) prep, similar to the KS4 GCSE format

6. What skills will students develop that can be used in other subject areas and beyond their school life?

Design and Technology is a practical and valuable subject. It enables children and young people to actively contribute to the creativity, culture, wealth and well-being of themselves, their community and their nation. It teaches how to take risks and so become more resourceful, innovative, enterprising and capable. Students develop a critical understanding of the impact of design and technology on daily life and the wider world. Additionally, it provides excellent opportunities for students to develop and apply value judgements of an aesthetic, economic, moral, social, and technical nature both in their own designing and when evaluating the work of others.

7. How is learning planned to progressively develop pupil's knowledge and understanding over time?

It leverages increasingly sophisticated resources, including dedicated teaching environments, manufacturing equipment and specialist teaching. As students progress through this phase, they may be given the opportunity to focus on specific aspects of the subject such as product design, engineering, systems and control, electronics, textiles and graphics. However, at its core is creativity and imagination.

8. How learning is sequenced over time to ensure students retain knowledge and are more successful at recalling?

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Regular Knowledge organiser tests and exam practise

9. How is this curriculum adapted to cater for the needs of students with different starting points?

Differentiated activities

10. How will you ensure teachers have the relevant knowledge, expertise and practical skills to deliver your curriculum effectively?

Robust SOW outlined for each individual project along with a week by week objectives outlined in the Scheme of Learning