

## Key Stage 3 Curriculum Plan: **Product Design** 2023

### Intent:

Design & Technology is about creating something, for somebody, for some purpose. As a Catholic community with a responsibility for the world in which we live, our D&T curriculum aims to inspire students to develop skills for life, make informed decisions and become resourceful consumers. Students consider the needs of others' and those of the environment through Art Textiles, Catering and Product Design.

We aim to foster curiosity in the modern world through the awe and wonder of our varied and ever evolving subjects. Students exercise their creativity through designing and making with a wide range of ingredients, fabrics and materials. They will solve problems, evaluate their work and become reflective and healthy citizens.

**Product Design** - designing to improve the lives of others



### Year 7 Carousel

#### Plastic Fantastic

- Health and Safety
- Categories of polymers
- Making with acrylic – tools, equipment, processes
- Line bending and laser cutting
- The work of Yinka Ilori
- Evaluation

#### Smart Materials

#### 2D Computer Aided Design

**Mini NEAs: How can products be used to encourage people to donate to food banks? -**

- Investigate
- Designing for others
- Review of ideas
- Prayer and reflections

#### Energy

- Renewable / non-renewable sources
- Designing wind turbines
- Model making
- Costings

#### Assessment:

End of Rotation Exam (1 hour)  
 Practical Assessment of acrylic product  
 Mini NEA Design assessment (1 hour)

### Year 8 Carousel

**Mini NEAs: How can products be used to create awareness of the climate emergency?**

- Health and Safety
- Categories of metals

	<ul style="list-style-type: none"> <li>- Making with aluminium – tools, equipment, processes</li> </ul> <p><b>The Impact of New and Improving Technologies</b></p> <ul style="list-style-type: none"> <li>- 3D printing</li> <li>- Automation</li> <li>- Impact on people</li> </ul> <p><b>Mini NEA: How can products be used to encourage visitors to recycle during their visit to the zoo?</b></p> <ul style="list-style-type: none"> <li>- Designing for others</li> <li>- Development</li> <li>- SCAMPER</li> <li>- Prayer and reflections</li> </ul> <p><b>Isometric Drawing</b></p> <p><b>Speedy Boats</b></p> <ul style="list-style-type: none"> <li>- Health and Safety</li> <li>- Making with pine and HIPS – tools, equipment, processes</li> <li>- Vacuum forming</li> <li>- Categories of timbers and revisit polymers</li> <li>- Speed / average calculations</li> </ul> <p><b>Assessment:</b>  End of Rotation Exam (1 hour)  Practical Assessment of aluminium product  Mini NEA Design assessment (1 hour)</p>					
Year 9	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
	<p><b>Mini NEA</b> – how can products be used to help cyclists?</p> <p><b>Materials and Y7/8 Revisited</b></p> <p><b>Cross Practical Task</b> – foamed PVC, accuracy</p>	<p><b>Autumn Revision and Exam</b> – covering Year 9 and revisit Y7/8 knowledge</p> <p><b>Wood Christmas Trees</b> Practical Task – marking out, producing a quality product</p> <p><b>Design Ventura</b> – national design competition for a client run by the Design Museum</p>	<p><b>Design Ventura</b> – national design competition for a client run by the Design Museum</p> <p><b>Where’s the Impact</b> – sustainability, materials choices, impact on the environment</p> <p><b>Mini NEA</b> – how can products be used to educate people about the environmental Impact of polymers?</p>	<p><b>Where’s the Impact</b> – impact on the environment, Fairtrade</p> <p><b>Make:able</b> – national design competition to demonstrate empathy for an elderly client with specific needs and design a problem that solves their needs</p> <p><b>Spring Revision and Exam</b> – covering</p>	<p><b>I Am Acrylic</b> – design and make project for company who batch produce acrylic products</p> <p><b>End of Year Exam Revision</b></p>	<p><b>End of Year Exam Revision</b></p> <p><b>I Am Acrylic</b> – design and make project for company who batch produce acrylic products</p> <p><b>Past and Present Designers</b></p> <p><b>Swatch Watch</b> – past designers</p>

				polymers and sustainability		<b>Computer Aided Design</b> – 2D and 3D
	<b>Assessment:</b> Mini NEA assessment – Investigate, Design Brief and Specification, Initial Ideas (over 4 lessons)	<b>Assessment:</b> Autumn Exam (1 hour)	<b>Assessment:</b> Formative Assessment on Mini NEA – Chosen Design	<b>Assessment:</b> Spring Exam (30 minutes)	<b>Assessment:</b> Practical Assessment on I Am Acrylic project (Quality and accuracy – 12 marks, Manufacturing and Skills – 16 marks)	<b>Assessment:</b> End of Year Exam (1 hour)

## Key Stage 4 Curriculum Plan: **Product Design** 2023

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Year 10	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p><b>Polymers Material Specialism:</b></p> <p>Are Polymers Good or Bad? Manufacturing with Polymers – in school and in industry – the skills stick practicals</p> <p>(GCSE Unit numbers: 1.10, 4.1 - 4.8)</p>	<p><b>Core Content:</b></p> <p>Impact of New and Emerging Technology Timbers Composite materials Smart materials Mechanical Components Electronic and Programmable Components DESIGN letters practicals covering different core materials</p> <p>(GCSE Unit numbers: 1.1, 1.2, 1.4, 1.5, 1.6, 1.7, 1.12)</p>	<p><b>Core Content:</b></p> <p>Energy Sources Communication and Drawing Styles Environmental / Moral / Social Issues Metals DESIGN letters practical covering different core materials Textiles and Technical Textiles</p> <p>(GCSE Unit numbers: 1.2, 1.3, 1.8, 1.14, 1.17)</p>	<p><b>Core Content:</b></p> <p>Textiles and Technical Textiles DESIGN letters practical covering different core materials Exam Preparation Mock Exam Mini NEA: how can products be used to support neurodiversity?</p> <p>(GCSE Unit numbers: 1.4, 1.11, 1.13, 4.1-4.8)</p>	<p><b>Core Content:</b></p> <p>Design strategies Dyson Box Designers Paper and Board Living Pictures mini NEA (vacuum formed book)</p> <p>(GCSE Unit numbers: 1.9, 1.15, 1.16, 4.1-4.8)</p>	<p><b>NEA (50% of GCSE)</b></p> <p>Investigate Design Develop</p> <p>Mock Exam</p>
	<p><b>Assessment:</b> Polymers Exam (1 hour)</p>	<p><b>Assessment:</b> Autumn 2 Exam (1 hour)</p>	<p><b>Assessment:</b> Spring 1 Exam (1 hour)</p>	<p><b>Assessment:</b> Full mock paper (1 hour 45 minutes) Practical assessment – DESIGN letters (Quality and accuracy – 12 marks, Manufacturing and Skills – 16 marks)</p>	<p><b>Assessment:</b> Formative assessment on Living Pictures mini NEA</p>	<p><b>Assessment:</b> End of Year Exam (1 hour 45 minutes)  Ongoing NEA assessment</p>

Year 11	<b>NEA (50% of GCSE)</b> Design & Development	<b>NEA (50% of GCSE)</b> Development Making	<b>NEA (50% of GCSE)</b> Making Evaluation	<b>NEA (50% of GCSE)</b> Evaluation  <b>Exam Preparation</b>	<b>Exam Preparation</b>	
	<b>Assessment:</b> Ongoing NEA assessment	<b>Assessment:</b> Ongoing NEA assessment  Mock Exam (1 hour 45 minutes)	<b>Assessment:</b> Ongoing NEA assessment	<b>Assessment:</b> Finished NEA assessment (100 marks)	<b>Assessment:</b> Formative assessments in preparation for exam  External Exam (1 hour 45 minutes)	