

Our curriculum should provide an ambitious level of challenge for all students focussing on developing, securing, and applying knowledge, understanding and skills. At Key Stage 4, the curriculum should enable students to apply knowledge, understanding and skills to the new GCSE syllabi.

<b>Subject:</b> D&T	<b>Year Group:</b> 8	<b>Qualification:</b> Key Stage 3	<b>Ability:</b> Mixed (Rotation)
<b>Department Vision:</b>	<b>To offer every student in Erdington Academy the opportunity to develop their creativity, practical knowledge and skills in preparation for our rapidly changing technological world.</b>		
<p><b>Intent:</b> What should every student know, understand and be able to do by the end of the year.</p> <p><b>What is Metal- nickel silver?</b></p> <p><b>Design and Make a JEWELLERY (RING) product a useful product that can be used at home to aid organisation and safety. Inspired by Biomimicry</b></p>	<p><b>Know:</b> Where metal- nickel silver come from and how they're made, what products are made using metal- nickel silver. What a ring is and its function.</p> <p><b>Understand:</b> How a ring can be decorated and constructed using metal- nickel silver techniques.</p> <p><b>Be able to do:</b> analyse a brief, conduct a product analysis of existing products using aspects of ACCESS FMM, write a design specification/criteria, draw a range of design ideas, use different tools and equipment shape and form the given materials, plant the making sequence, and evaluate product using SWOM (strengths, weaknesses, opportunities and modifications).</p>		
<p>Substantive Knowledge for the year (stuff' you need to know about a topic)</p> <p>Working towards GCSE:  <b>Identifying and investigating design possibilities</b>  <b>Producing a design brief and specification</b>  <b>Generating design ideas</b>  <b>Developing design ideas</b>  <b>Realising design ideas</b>  <b>Analysing &amp; evaluating</b></p>	<p><b>Research and Investigate</b></p> <ul style="list-style-type: none"> <li>• Where metal- nickel silver come from, properties and uses? Include sustainability issues 3 Rs- recycle, reuse, repair</li> <li>• What are human factors- ergonomics and anthropometrics data mean?</li> <li>• What is a questionnaire and how to analyse results?</li> <li>• Explaining -Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture) keyword <b>hwk</b> of existing ring.</li> <li>• What's a design specification/criterion</li> <li>• Standard components for metal- nickel silver <b>hwk</b></li> </ul> <p><b>Generating Design Ideas</b></p> <ul style="list-style-type: none"> <li>• Ring designs – look at 4x4 developing strategy <b>biomimicry or designer Ettore Sottas</b></li> <li>• Know what is and how to draw design ideas in 2D &amp; 3D in colour and annotation</li> </ul> <p><b>Developing Design Ideas</b></p> <ul style="list-style-type: none"> <li>• Know what 4x4/ scamper mean and how to use it to develop an idea.</li> <li>• Know how to create a plan of sequence or making the final design idea. (flow chart)</li> </ul> <p><b>Realising Best Design Idea</b></p> <p><b>Health and safety reminders</b></p> <ul style="list-style-type: none"> <li>• Know how to use a tin snip</li> <li>• Know how to use flux</li> <li>• Know how to use a stamps and router tool, ball pein hammer</li> <li>• Know how to use a brazing hearth and polisher</li> <li>• Know how to use a file, wet and dry paper.</li> </ul> <p><b>Analysing and Evaluating</b></p>		

- How to evaluate the final product using SWOM (Strengths, Weaknesses, Opinions and Modifications).

Disciplinary Knowledge for the year

(‘using’ the substantive knowledge)

Students will work in a booklet to apply what they have learnt to a real life design brief:

- Record information about the origin of metal- nickel silver and how they are made through video/PPT
- Mind map analysing the brief/contextual challenge using ACCESS FMM
- Primary and secondary research
- Human factors- ergonomics + anthropometric data.
- Product Analysis of existing products ring using aspects of ACCESS FMM
- Drawn design ideas in 2d + 3d adding render and/with annotation
- Produce a plan for manufacturing.
- Construct/manufacture the ring. video/PPT- teacher will demo Students will work with a range of appropriate materials/components to produce prototypes that are accurate and within close tolerances. This will involve using specialist tools and equipment, which may include hand tools, machines or CAM/CNC. The prototypes will be constructed through a range of techniques, which may involve shaping, fabrication, construction and assembly. The prototypes will have suitable finish with functional and aesthetic qualities, where appropriate. Students will be awarded marks for the quality of their prototype
- Evaluation of a product ring.

Students will support their classwork with home learning research assignments.

Literacy Development Activities. (Functional Skills of English):

There are opportunities to develop literacy skills through

- Writing frames
- Researching
- Exploring ideas
- Evaluation
- Annotation

HOMEWORK:

1. Research materials 4 metal and gems used to make jewellery.
2. SPELLINGS- Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture, MODIFICATIONS) keyword hwk
3. MATERIALS MULTIPLE CHOICE QUIZ focus metal.
4. RESEARCH these designers- who are they? Raymond Templier , Charles Rennie Mckintosh CRM and Zaha Hadid. (include images)
5. What is draw filing and cross filing, wet and dry paper and sand paper, polisher and drill? (include images)
6. What is a brazing hearth and how does it work? (include images)

Yr. 7	Unit Title and number of lessons	Key Substantive Knowledge	Key Disciplinary Knowledge and Skills	Rigorous Assessable outcome(s)
Autumn Term	<p><b>Research- 4.4.4.1</b>  <b>Design, 4.4.4.2</b>  <b>Make 4.4.4.5</b>  <b>Evaluate 4.4.4.6</b></p> <p><b>Jewellery (ring)</b></p>	<p>Students will work in a booklet to apply what they have learnt to a real life design brief:</p> <ul style="list-style-type: none"> <li>Record information about the origin of metal- nickel silver and how they are made through video/PPT</li> <li>Mind map analysing the brief/contextual challenge using ACCESS FMM</li> <li>Primary and secondary research</li> <li>Human factors- ergonomics + anthropometric data.</li> <li>Product Analysis of existing products ring using aspects of ACCESS FMM</li> <li>Drawn design ideas in 2d + 3d adding render and/with annotation</li> <li>Produce a plan for manufacturing.</li> <li>Construct/manufacture the ring. video/PPT- teacher will demo Students will work with a range of appropriate materials/components to produce prototypes that are accurate and within close tolerances. This will involve using specialist tools and equipment, which may include</li> </ul>	<p><b>Research and Investigate</b></p> <ul style="list-style-type: none"> <li>Where metal- nickel silver come from, properties and uses? Include sustainability issues 3 Rs- recycle, reuse, repair</li> <li>What are human factors- ergonomics and anthropometrics data mean?</li> <li>What is a questionnaire and how to analyse results?</li> <li>Explaining -Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture) keyword <b>hwk</b> of existing ring.</li> <li>What's a design specification/criterion</li> <li>Standard components for metal- nickel silver <b>hwk</b></li> </ul> <p><b>Generating Design Ideas</b></p> <ul style="list-style-type: none"> <li>Ring designs – look at 4x4 developing strategy <b>biomimicry or designer Ettore Sottas</b></li> <li>Know what is and how to draw design ideas in 2D &amp; 3D in colour and annotation</li> </ul> <p><b>Developing Design Ideas</b></p> <ul style="list-style-type: none"> <li>Know what 4x4/ scamper mean and how to use it to develop an idea.</li> </ul>	<p><b>Baseline test</b></p> <p>Live feedback in lessons  RAG rate areas of project:  Research, Design, Make and Evaluate  Summative level awarded at the end of the project a recorded on a shared DT mark sheet</p>

		<p>hand tools, machines or CAM/CNC. The prototypes will be constructed through a range of techniques, which may involve shaping, fabrication, construction and assembly. The prototypes will have suitable finish with functional and aesthetic qualities, where appropriate. Students will be awarded marks for the quality of their prototype</p> <ul style="list-style-type: none"> <li>Evaluation of a product ring.</li> </ul> <p>Students will support their classwork with home learning research assignments.</p>	<ul style="list-style-type: none"> <li>Know how to create a plan of sequence or making the final design idea. (flow chart)</li> </ul> <p><b>Realising Best Design Idea</b></p> <p><b>Health and safety reminders</b></p> <ul style="list-style-type: none"> <li>Know how to use a tin snip</li> <li>Know how to use flux</li> <li>Know how to use a stamps and router tool, ball pein hammer</li> <li>Know how to use a brazing hearth and polisher</li> <li>Know how to use a file, wet and dry paper.</li> </ul> <p><b>Analysing and Evaluating</b></p> <p>How to evaluate the final product using SWOM (Strengths, Weaknesses, Opinions and Modifications).</p>	
	<p>Rotations Each Rotation 13 lessons 1 lesson a week</p>			End of unit test
Spring Term	<p><b>Research- 4.4.4.1</b> <b>Design, 4.4.4.2</b> <b>Make 4.4.4.5</b> <b>Evaluate 4.4.4.6</b></p> <p><b>Jewellery (ring)</b></p>	<p>Students will work in a booklet to apply what they have learnt to a real life design brief:</p> <ul style="list-style-type: none"> <li>Record information about the origin of metal- nickel silver and how they are made through video/PPT</li> <li>Mind map analysing the brief/contextual challenge using ACCESS FMM</li> <li>Primary and secondary research</li> <li>Human factors- ergonomics + anthropometric data.</li> <li>Product Analysis of existing products ring using aspects of ACCESS FMM</li> </ul>	<p><b>Research and Investigate</b></p> <ul style="list-style-type: none"> <li>Where metal- nickel silver come from, properties and uses? Include sustainability issues 3 Rs- recycle, reuse, repair</li> <li>What are human factors- ergonomics and anthropometrics data mean?</li> <li>What is a questionnaire and how to analyse results?</li> <li>Explaining -Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture) keyword <b>hwk</b> of existing ring.</li> <li>What's a design specification/criterion</li> </ul>	

		<ul style="list-style-type: none"> <li>• Drawn design ideas in 2d + 3d adding render and/with annotation</li> <li>• Produce a plan for manufacturing.</li> <li>• Construct/manufacture the ring. video/PPT- teacher will demo Students will work with a range of appropriate materials/components to produce prototypes that are accurate and within close tolerances. This will involve using specialist tools and equipment, which may include hand tools, machines or CAM/CNC. The prototypes will be constructed through a range of techniques, which may involve shaping, fabrication, construction and assembly. The prototypes will have suitable finish with functional and aesthetic qualities, where appropriate. Students will be awarded marks for the quality of their prototype</li> <li>• Evaluation of a product ring.</li> </ul> <p>Students will support their classwork with home learning research assignments.</p>	<ul style="list-style-type: none"> <li>• Standard components for metal- nickel silver <b>hwk</b></li> </ul> <p><b>Generating Design Ideas</b></p> <ul style="list-style-type: none"> <li>• Ring designs – look at 4x4 developing strategy</li> </ul> <p><b>biomimicry or designer Ettore Sottas</b></p> <ul style="list-style-type: none"> <li>• Know what is and how to draw design ideas in 2D &amp; 3D in colour and annotation</li> </ul> <p><b>Developing Design Ideas</b></p> <ul style="list-style-type: none"> <li>• Know what 4x4/ scamper mean and how to use it to develop an idea.</li> <li>• Know how to create a plan of sequence or making the final design idea. (flow chart)</li> </ul> <p><b>Realising Best Design Idea</b></p> <p><b>Health and safety reminders</b></p> <ul style="list-style-type: none"> <li>• Know how to use a tin snip</li> <li>• Know how to use flux</li> <li>• Know how to use a stamps and router tool, ball pein hammer</li> <li>• Know how to use a brazing hearth and polisher</li> <li>• Know how to use a file, wet and dry paper.</li> </ul> <p><b>Analysing and Evaluating</b></p> <p>How to evaluate the final product using SWOM (Strengths, Weaknesses, Opinions and Modifications).</p>	
				End of unit test
Summer Term		<p>Students will work in a booklet to apply what they have learnt to a real-life design brief:</p> <ul style="list-style-type: none"> <li>• Record information about the origin of metal- nickel silver and how they are made through video/PPT</li> </ul>	<p><b>Research and Investigate</b></p> <ul style="list-style-type: none"> <li>• Where metal- nickel silver come from, properties and uses? Include sustainability issues 3 Rs- recycle, reuse, repair</li> </ul>	

- Mind map analysing the brief/contextual challenge using ACCESS FMM
- Primary and secondary research
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- Evaluation of a product ring.

- What are human factors- ergonomics and anthropometrics data mean?
- What is a questionnaire and how to analyse results?
- Explaining -Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture) keyword **hwk** of existing ring.
- What's a design specification/criterion
- Standard components for metal- nickel silver **hwk**

**Generating Design Ideas**

- Ring designs – look at 4x4 developing strategy **biomimicry or designer Ettore Sottas**
- Know what is and how to draw design ideas in 2D & 3D in colour and annotation

**Developing Design Ideas**

- Know what 4x4/ scamper mean and how to use it to develop an idea.
- Know how to create a plan of sequence or making the final design idea. (flow chart)

**Realising Best Design Idea**

**Health and safety reminders**

- Know how to use a tin snip
- Know how to use flux
- Know how to use a stamps and router tool, ball pein hammer
- Know how to use a brazing hearth and polisher
- Know how to use a file, wet and dry paper.

		Students will support their classwork with home learning research assignments.	<b>Analysing and Evaluating</b> How to evaluate the final product using SWOM (Strengths, Weaknesses, Opinions and Modifications).	
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	<p><b>Research- 4.4.4.1</b>  <b>Design, 4.4.4.2</b>  <b>Make 4.4.4.5</b>  <b>Evaluate 4.4.4.6</b></p> <p><b>Jewellery (ring)</b></p>	<p><b>Research and Investigate</b></p> <ul style="list-style-type: none"> <li>• Where metal- nickel silver come from, properties and uses? Include sustainability issues 3 Rs- recycle, reuse, repair</li> <li>• What a product analysis and design brief is? Explaining - Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture) keyword <b>hwk</b> of existing ring.</li> <li>• What's a design specification/criterion</li> <li>• Standard components for metal- nickel silver <b>hwk</b></li> </ul> <p><b>Generating Design Ideas</b></p> <ul style="list-style-type: none"> <li>• Ring backboard designs – look at 4x4 developing strategy <b>biomimicry</b> or <b>designer Ettore Sottas</b></li> <li>• Know what is and how to draw design ideas in 2D &amp; 3D in colour and annotation</li> </ul> <p><b>Developing Design Ideas</b></p> <ul style="list-style-type: none"> <li>• Know what 4x4/ scamper mean and how to use it to develop an idea.</li> <li>• Know how to create a plan of sequence or making the final design idea. (flow chart)</li> </ul> <p><b>Realising Best Design Idea</b></p> <ul style="list-style-type: none"> <li>• Know how to use a coping and scroll saw</li> <li>• Know how to use a drill, disc and band facer sander</li> <li>• Know how to use a hot wire strip heater</li> </ul>		<p>End of unit test</p>
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- Know how to use a file, sandpaper or wet and dry paper.

**Analysing and Evaluating**

How to evaluate the final product using SWOM (Strengths, Weaknesses, Opinions and Modifications).

		<ul style="list-style-type: none"><li>• Know how to use a file, sandpaper or wet and dry paper.</li></ul> <p><b>Analysing and Evaluating</b> How to evaluate the final product using SWOM (Strengths, Weaknesses, Opinions and Modifications).</p>		
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