ERDINGTON ACADEMY

*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.*

| **Subject**: D&T | **Year Group**: 7 | **Qualification: Key Stage 3** | **Ability**: Mixed (Rotation) |
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| **Department Vision:** | **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.** | | |
| **Intent**: What should every student know, understand and be able to do by the end of the year.<br>**What is Wood +polymer (acrylic)?**<br>**Design and Make a COAT HOOK (CH) product a useful product that can be used at home to aid organisation and safety.**<br>**Inspired by Biomimicry** | **Know:** Where wood +polymer (acrylic) come from and how they're made, what products are made using wood +polymer (acrylic). What a coat hook is and its function.<br>**Understand:** How a coat hook can be decorated and constructed using wood +polymer (acrylic) techniques.<br>**Be able to do**: 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). | | |
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| Substantive Knowledge for the year<br><br>(stuff' you need to know about a topic)<br><br>Working towards GCSE:<br>Identifying and investigating design possibilities<br>Producing a design brief and specification<br>Generating design ideas<br>Developing design ideas<br>Realising design ideas<br>Analysing & evaluating | **Research and Investigate**<br>• Where wood +polymer (acrylic) come from, properties and uses? Include sustainability issues 3 Rs- recycle, reuse, repair<br>• What a product analysis and design brief is? Explaining -Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture) keyword **hwk** of existing coat hook.<br>• What's a design specification/criterion<br>• Standard components for wood +polymer (acrylic) **hwk**<br>**Generating Design Ideas**<br>• Coat hook backboard designs – look at 4x4 developing strategy **biomimicry or designer Ettore Sottas**<br>• Know what is and how to draw design ideas in 2D & 3D in colour and annotation<br>**Developing Design Ideas**<br>• Know what 4x4/ scamper mean and how to use it to develop an idea.<br>• Know how to create a plan of sequence or making the final design idea. (flow chart)<br>**Realising Best Design Idea**<br>• Know how to use a coping and scroll saw<br>• Know how to use a drill, disc and band facer sander<br>• Know how to use a hot wire strip heater<br>• Know how to use a file, sandpaper or wet and dry paper.<br>**Analysing and Evaluating**<br>• How to evaluate the final product using SWOM (Strengths, Weaknesses, Opinions and Modifications). | | |
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| Disciplinary Knowledge for the year | Students will work in a booklet to apply what they have learnt to a real life design brief: | | |

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| ('using' the substantive knowledge) | • Record information about the origin of wood +polymer (acrylic) and how they are made through video/PPT<br>• Mind map analysing the brief/contextual challenge<br>• Product Analysis of existing products (CH) using aspects of ACCESS FMM<br>• Drawn design ideas in 2d + 3d adding render and/with annotation<br>• Construct/manufacture the (CH). 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<br>• Evaluation of product (CH).<br><br>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. SAFETY SIGN OR POSTER FOR WORK SHOP.
2. SPELLINGS- Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture, MODIFICATIONS) keyword hwk
3. MATERIALS MULTIPLE CHOICE QUIZ
4. RESEARCH these designers- who are they? ETTORE SOTTAS, Charles Rennie Mckintosh CRM and Zaha Hadid. (include images)
5. What is draw filing and cross filing, wet and dry paper and sand paper, countersunk screw and dome head screw? (include images)
6. What is a hot wire strip heater and how does it work? (include images)

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| Yr. 7 | Unit Title and number of lessons | Key Substantive Knowledge | Key Disciplinary Knowledge and Skills | Rigorous Assessable outcome(s) |
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| Autumn Term | **Research- 4.4.4.1**<br>**Design, 4.4.4.2**<br>**Make 4.4.4.5**<br>**Evaluate 4.4.4.6**<br><br>**Coat Hook (CH)** | • Record information about the origin of wood +polymer (acrylic) and how they are made through video/PPT<br>• Mind map analysing the brief/contextual challenge<br>• Product Analysis of existing products (CH) using aspects of ACCESS FMM<br>• Drawn design ideas in 2d + 3d adding render and/with annotation<br>• Construct/manufacture the (CH). 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<br>• Evaluation of product (CH).<br><br>Students will support their classwork with home learning research assignments. | **Research and Investigate**<br>• Where wood +polymer (acrylic) come from, properties and uses? Include sustainability issues 3 Rs- recycle, reuse, repair<br>• What a product analysis and design brief is? Explaining - Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture) keyword **hwk** of existing coat hook.<br>• What's a design specification/criterion<br>• Standard components for wood +polymer (acrylic) **hwk**<br>**Generating Design Ideas**<br>• Coat hook backboard designs – look at 4x4 developing strategy **biomimicry or designer Ettore Sottas**<br>• Know what is and how to draw design ideas in 2D & 3D in colour and annotation<br>**Developing Design Ideas**<br>• Know what 4x4/ scamper mean and how to use it to develop an idea.<br>• Know how to create a plan of sequence or making the final design idea. (flow chart)<br>**Realising Best Design Idea**<br>• Know how to use a coping and scroll saw<br>• Know how to use a drill, disc and band facer sander | **Baseline test**<br>Live feedback in lessons<br>RAG rate areas of project:<br>Research, Design, Make and Evaluate<br>Summative level awarded at the end of the project a recorded on a shared DT mark sheet |

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| | | | • Know how to use a hot wire strip heater<br>• Know how to use a file, sandpaper or wet and dry paper.<br>**Analysing and Evaluating**<br>How to evaluate the final product using SWOM (Strengths, Weaknesses, Opinions and Modifications). | |
| | Rotations<br>Each Rotation 13 lessons<br>1 lesson a week | | | End of unit test |
| Spring Term | **Research- 4.4.4.1**<br>**Design, 4.4.4.2**<br>**Make 4.4.4.5**<br>**Evaluate 4.4.4.6**<br><br>**Coat Hook (CH)** | • Record information about the origin of wood +polymer (acrylic) and how they are made through video/PPT<br>• Mind map analysing the brief/contextual challenge<br>• Product Analysis of existing products (CH) using aspects of ACCESS FMM<br>• Drawn design ideas in 2d + 3d adding render and/with annotation<br>• Construct/manufacture the (CH). 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 | **Research and Investigate**<br>• Where wood +polymer (acrylic) come from, properties and uses? Include sustainability issues 3 Rs- recycle, reuse, repair<br>• What a product analysis and design brief is? Explaining - Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture) keyword **hwk** of existing coat hook.<br>• What's a design specification/criterion<br>• Standard components for wood +polymer (acrylic) **hwk**<br>**Generating Design Ideas**<br>• Coat hook backboard designs – look at 4x4 developing strategy **biomimicry or designer Ettore Sottas**<br>• Know what is and how to draw design ideas in 2D & 3D in colour and annotation<br>**Developing Design Ideas** | |

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| | | | | End of unit test |
| Summer Term | | • Record information about the origin of wood +polymer (acrylic) and how they are made through video/PPT<br>• Mind map analysing the brief/contextual challenge<br>• Product Analysis of existing products (CH) using aspects of ACCESS FMM<br>• Drawn design ideas in 2d + 3d adding render and/with annotation<br>• Construct/manufacture the (CH). 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 | **Research and Investigate**<br>• Where wood +polymer (acrylic) come from, properties and uses? Include sustainability issues 3 Rs- recycle, reuse, repair<br>• What a product analysis and design brief is? Explaining - Aesthetics, Cost, Consumer/Client, Environment, Safety, Size, Materials, Manufacture) keyword **hwk** of existing coat hook.<br>• What's a design specification/criterion<br>• Standard components for wood +polymer (acrylic) **hwk**<br>**Generating Design Ideas** | |

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