

Curriculum Map

Subject: KS3 DT Carousel

Year: 9



	Resistant Materials	Textiles	Construction
Content	<ol style="list-style-type: none"> 1) Designing and making a pewter pendant 2) 3D Printing Design Project 	Designing and making a decorative cushion cover	Introduction to Electrical AO1: Develop practical skills using safe techniques to produce assessment pieces. AO2: Demonstrate an understanding of how electricity works.
Knowledge	<p>Students will learn about Health & Safety. Including how to use a variety of workshop machines and hand tools safely.</p> <p>They will understand developments in design and technology, their impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists</p> <p>Students will develop their knowledge of metals and alloys and how they are obtained and used in manufacturing</p> <p>Students will develop an understanding of the Design Process and how it is used to create imaginative and high quality designs and products.</p> <p>Students will learn Google Sketchup, developing their basic CAD skills and how these then feed into CAM as a process</p>	<p>Students will learn about Health and Safety including how to use a variety of specialist Textiles equipment and a sewing machine.</p> <p>They will understand how to follow the design development cycle to carry out research on their chosen topic which will be selected from a given list of themes. Students will develop their design ideas.</p> <p>Students will develop their knowledge about various decorative techniques used in the Textiles industry. A basic introduction to pattern cutting, the practice of sewing and finishing off seams and how components can be used to create a fastening.</p> <p>At the start they will have an opportunity to create samples of the various decorative techniques this will allow them to identify which techniques they choose for the manufacture of their final cushion. They will then go on to learn how to sew a cushion cover.</p>	<p>Students will learn about Health & Safety. Including the purpose and use of appropriate tools, materials and equipment for electrical operations.</p> <p>Students will learn about how electricity is created and the various forms it can be channelled into and how its effects and shapes our day to day life.</p> <p>The students will be gaining knowledge of how electrical components work and carrying out practical tasks as detailed in the scaled drawings.</p> <p>They will learn about what jobs are available to them that involve working with electricity and explore the pathways they would have to take to achieve these goals.</p>

<p>Skills</p>	<p>Students will learn questioning, critical thinking, Logical thinking techniques and evaluative and analytical techniques..</p> <p>They will learn creative strategies and skills required to refine design ideas to meet criteria whilst considering the limitations of materials, processes, skill and time.</p> <p>Students will develop their sketching, labels, notes & explanations to communicate their ideas.</p> <p>Students will develop their IT skills and computer aided design skills which have cross curricular benefits</p> <p>Students will develop their skills in planning, organising stages of production, foreseeing and overcoming problems. Quality control checks and estimates of time.</p> <p>Students are taught to use vacuum forming, pewter casting equipment, files, wet and dry paper, laser cutter, belt sander. They develop skills design skills to grown their sketching / realisation skills particularly useful if possibly going forward into the GCSE NEA</p>	<p>Students will learn and develop the following skills:</p> <p>How to answer a project brief through researching a theme, creating a moodboard and design specification then developing design ideas (This will help them in the NEA if they choose DT for GCSE).</p> <ul style="list-style-type: none"> ● Students will learn how to design using CAD or illustration markers. ● How to set up and use a sewing machine and other Textiles based equipment safely. ● Basic pattern cutting / template making skills. ● How to sew seams and a fastening. ● Knowledge on natural and synthetic fabrics and how they are created in the Industry. ● Students will learn how to create a commercial useful product but yet realise their own design ideas and personalise their product. ● The process of decorating fabric with - <p>Lino print or fabric painting / repeat patterns</p> <p>Bonda web applique / reverse applique</p> <p>Hand embroidery</p> <p>Embellishments such as beads, sequins, buttons, ribbons</p>	<p>Students will learn the skills required for Measuring, Marking, cutting and stripping electrical cables safely.</p> <p>They will learn problem-solving skills, how to overcome obstacles and challenges to achieve their end goal.</p> <p>Students will acquire the ability to use their initiative to help develop their skills in planning, organising, foreseeing and overcoming problems. Quality control checks and estimates of time.</p> <p>Students will develop practical skills using safe techniques to undertake electrical operations.</p> <p>Students will develop operational skills for the marking out of electrical runs and sockets. Interpret requirements of the drawn information for the practice circuit. Mark out the lengths of cable required. Cut cable to required length. Mark out the conduit required, cut to length and install.</p>
<p>Key Questions</p>	<p>What is the design process?</p> <p>How do you design and make a product which answers the project brief and meets specification points?</p> <p>How can looking at existing products influence your design ideas?</p> <p>How do you use the different workshop</p>	<ul style="list-style-type: none"> ● What is the design process? ● What is a Design specification? ● How do you design and make a product which answers the project brief and meets specification points? ● How can looking at existing products 	<ul style="list-style-type: none"> ● Can I measure and mark accurately? ● Can I cut and strip cables and use other hand tools accurately? ● Can I use Tools & Equipment

	<p>machines safely and accurately? Where do metals come from? Why are alloys used / created? What are the key material properties of resistant materials? What is CAD? What is CAM? Why is sketching so important to the design process? What is the design development process?</p>	<p>influence your design ideas?</p> <ul style="list-style-type: none"> • How do you use a sewing machine and other specialist Textiles equipment? • What is CAD, how can illustration media help enhance your designs? • Where does fabric come from and how is it made? • What are the most common seams and finishing methods? • What are the components and fastenings used in Textiles? • What is pattern cutting? • What is applique and how can I use it to recreate my design? • What are repeat patterns and how can I achieve one? • How do I paint or print on fabric? • How do I decorate fabric using hand embroidery techniques? • How do I sew different embellishments on my design? 	<p>safely?</p> <ul style="list-style-type: none"> • What is electricity? • Compare & contrast 2 forms of electricity - static & current. • Name careers that involve electricity? • What is Voltage? • What colour is a live wire? • What colour is a neutral wire? • What colour is an earth wire?
Assessment	<p>Students' classwork and homework will be assessed against the success criteria detailed in the following bands: Planning, Communication, Making and Evaluating and awarded the following Aspire Levels: Foundation, Developing, Secure, Excellent. Students will be required to complete a Health & Safety test, and End of Unit test.</p>	<p>Students' classwork and homework will be assessed against the success criteria detailed in the following bands: Planning, Communication, Making and Evaluating and awarded the following Aspire Levels: Foundation, Developing, Secure, Excellence. Students will be required to complete a Health & Safety test, and End of Unit test.</p>	<ul style="list-style-type: none"> • Low stakes questioning, • live task marking; • knowledge based assessment. • Recap starter every lesson; • End of unit knowledge test. • Formative assessments.
Literacy/numeracy/ SMSC/Character	<p>Students' will develop their knowledge, understanding and use of subject specific terminology. Tier 2 and Tier 3 words will be embedded into</p>	<p>Students' will develop their knowledge, understanding and use of subject specific terminology.</p>	<p>Structured writing • Terminology & definitions of key words • SEN support – differentiated writing frames i.e. sentence starters • Starters i.e. Smart board recall</p>

	<p>the SOW and explicitly taught with the use of glossaries and direct application Students' will develop their application of numeracy skills through measuring and marking out materials also through working with computer aided design tools to achieve dimension and scale Students' will have to consider their customers' likes and interests when developing their product to meet the customers needs. They will use peer research and assessment to guide and inform each others work, understanding how to appropriately feedback positively and as an aid to development</p>	<p>Tier 2 and Tier 3 words will be embedded into the SOW and explicitly taught with the use of glossaries and direct application. Students' will develop their application of numeracy skills through the production of scaled drawings and measuring and marking out materials. Students' will have to consider their customers' likes and interests when developing their product to meet the customers needs. They will use peer research and assessment to guide and inform each others work, understanding how to appropriately feedback positively and as an aid to development</p>	<p>game, key concept recall • Terminology booklet (glossary) • Maths: Measuring (metres, centimetres, millimetres), Scale, Dimensions, Multiples, Costings, Areas & Volumes SMSC – Directly and indirectly embedded across lessons – social issues discussed within lessons, students able to empathise with the norms and values of others and challenge stereotypes and misnomers in society • Mutual respect is engendered through the process of peer evaluation of each other's work and standards •.Equal opportunities is taught through collaborative and team learning • Sustainability and the clear understanding of how it is applied to designing new buildings and the use of recycled materials. • Summer reading to develop subject knowledge.</p>
<p>Enrichment opportunities and futures</p>	<p>Enrichment - Sketchup tutorials and extension work, pixilart.com (great opportunity to further learn how work is spirited for CAD) External design competition run as a club, e.g, V&A innovate, Design Ventura (Design Museum), RSA Pupil Design Awards Remote workshops: Design Museum Remote Digital Workshops Visit: Design Museum workshops,e.g, Designer Maker User / Stranger by Design Careers - Engineer, Product or Industrial Designer, Interior Designer, Retail Designer, Exhibition Designer, Film Set Designer, Automobile Designers, Theatre Set Designer, Manufacturer, Machine Operator, Architect,</p>	<p>With the skills gained students can be given the opportunity to produce their own products at home. Enrichment - Watching Great British Sewing Bee, Next in Fashion, Read Fashion magazines, visit museums and galleries, watch fashion and Textiles documentaries. Watching YouTube tutorials on various Textiles techniques. Careers- Fashion designer, pattern cutter, Fashion Buyer, marketing, seamstress, Interior Designer, Soft Furnishings designer, upholsterer, advertising, Fashion journalism. Employability skills- planning, independent work, organisation, dexterity, fine motor skills, design, critical and logical thinking, creativity, Problem</p>	<p>Futures in the subject embedded across lesson plans and presentations. Directly and indirectly. Career options displayed on the display board including further education options. • Core skills are developed to support the transition to the world of work including: Independent research skills; Group work and ability to work independently; Communication and Cooperation; Public speaking. Encourage students to participate in presentations of their work. Specific enrichment - Relevant documentaries and TV shows i.e.: (Grand Designs and Your Home Made Perfect) and wider reading throughout the course. • After school drop in sessions for assignment writing techniques. •</p>

	<p>Exhibition Designer, Toy Designers, Game Designer, Furniture Designer, Electrical Engineer, Carpenter, Plumber, Electrician,</p> <p>Employability Skills - Planning, Fine Motor Skills, Creativity, Organisation, Critical and Logical Thinking, Problem Solving, Risk Awareness</p>	<p>solving, risk awareness</p>	<p>Employability - applying for jobs/apprenticeships - CV writing, interview techniques. • Careers -Researching The careers available in the construction industry. • Colleges, research, interviews/enrolments.</p>
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