

D&T - Textiles

Year 8 Curriculum



ASPIRE – ENDEAVOUR - SUCCEED

Purpose

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others.

Threshold concepts

The Design Process

- Analyse - Research purposefully: Using a range of sources showing selectivity and analytical skill.
- Design - Visual Communication: Demonstrate innovation and creativity in response to a client's need/problem, using a range of 2D and 3D techniques.
- Make - Safe working Practice: Select and use tools and equipment safely and accurately in order to manufacture a high-quality prototype that demonstrates a range of skills.
- Evaluate - Critical Reflection: Demonstrate the ability to reflect critically throughout the design process showing an understanding for modification and improvement.
- Technical Knowledge
- Impact on Society: Understand developments in Design and Technology, their ecological and social footprint with an awareness of the impact on society.
- ACCEESSFMM
- These threshold concepts appear repeatedly throughout the curriculum.

Sequence of learning

In line with the faculty guidance students will begin the project with the design process. This provides consistency and helps student link the wider areas of faculty and hopefully allow them to transfer knowledge between faculty areas more easily. Students will also be tested on Word Power in the first lesson to ascertain their current knowledge and understanding of key terms. Students will then be reminded of ACCEESSFMM and introduced the

foci words of ACCEESSFMM for the project so that students now what to expect a deeper insight into during the project.

Next students will be given a lesson surrounding the project brief, outlining key elements. The brief will be thoroughly explored. Students will analyse existing products on the market using ACCEESSFMM key words as part of the market research task. Other textile artists will also be explored giving students insight to industry links. This lesson will also give a taster into logo design colour theory and how this is important in branding and marketing.

Students will then consider a specification for their product and what must be included for a viable Pencil case linking to both their theme and target market. This will bring in the focus across the department of ACCEESSFMM with a focus on aesthetics, customer, ergonomics, function and materials. Students will gain knowledge into a new Textile technique – Appliqué understanding the meaning, application and origin. Students will revisit a key art skill – continuous line which will be used to complete a design board of initial shape ideas – including appliqué decoration.

The next lesson will be based solely on design. After completing the initial design board, students will move on to complete x2 design developments inspired by their chosen crisp packets, annotation and rendering will be expected to maintain a high-quality standard of work. Self and peer assessment will be used to influence the final design with specification analysis to enable students to design to both a spec and a brief. Students will also understand the importance of H&S when designing/ creating a product and how this can affect the target market.

Students will then spend a lesson being introduced to the main textile equipment that they will be using this term. This will be done along side theory and other tasks to help embed the knowledge and allow for group learning and challenge such as definition tasks which can be independent as well allowing for the teacher to work with those completing a driving test on the sewing machine. Health and safety will also be taught at this time to ensure all students are trained on how to conduct themselves during a practical lesson. Students are then taught what CAD/CAM is and how it is used in textiles, both in industry and the classroom. They will then use this knowledge to help them complete their knowledge organisers and word power tasks throughout the term.

Students will then spend the next 2 lessons creating a sample of each embroidery stitch they will need to successfully manufacture their final product. Students will engage in visual presentations, videos, and demonstrations to support understanding and imbed knowledge. Embroidery will be used to secure the appliqué design. Students will gain skills into how to inset a zip using the sewing machine and will be able to utilise basic embroidery stitches to temporary tack pattern pieces together. This will prepare students for the following lessons based on manufacturing their final product.

There will be 3 lessons set aside for the complete manufacture of the final pencil case. 1 lesson will give students enough time to complete all appliqué decoration allowing the following 2 lessons to get zips inserted and pattern pieces together. Activities will be based upon the differences of abilities in the group, both support and challenge differentiation will be used allowing all students to complete their products to a high standard utilising the skills they have learnt throughout the project. Extension tasks will be used for those who finish early.

TEXTILE TECHNIQUES MINI PROJECT - Catch up if viable in time. (COVID Catch up)

After completing the main project – Pencil Case, students will engage in a short textile technique project lasting 8 lessons. Students will gain knowledge and understanding into each textile technique (Batik, Tie Dye, Marbling and Block Print) the origins of each technique and how to apply successfully, before applying knowledge into their own sample which will then allow all students to create a A3 sample board complete with key information and samples.

Students will also gain knowledge into natural and synthetic fibres allowing them to successfully choose the correct material to use for each sample dependent on the dyes/ technique, a short recap of biomimicry (From Yr 7) will be the first thing the students will engage in, students will create 4 mini pattern designs based on this which will influence their technique sampling.

Subject Knowledge	Procedural Knowledge
<p>Design is a process that is cyclical/iterative</p> <p>Careers/Employment in the industry are explicitly linked to all or some aspects of the design process.</p> <p>Different careers focus on key areas of the design process and require different skill sets.</p> <p>Term 1: Costume Designers - Film Term 2: Food Nutritionist Term 3: Electrician</p>	<p>Identify attributes and characteristics of different job roles.</p> <p>Explain how the design process is linked to the DP.</p>
<p>The order of the design process</p>	<p>Create a quality product following a production process.</p>
<p>What the acronym ACCEESSFMM stands for.</p> <p>A – Aesthetics - The appearance of a product C – Cost - The money paid to cover materials, equipment, labour, buildings and services so a product can be manufactured C – Customer - A single person or a target market group that a product or service is aimed at. E – Environment - The positive or negative impact a product may have on the environment. Including the materials and energy used for manufacturing. E – Ergonomics - the process of designing or arranging workplaces, products and systems so that they fit the people who use them. Body measurement data is used. (Anthropometrics) S – Safety - How safe a product is to manufacture and use S – Size - The physical dimension and measurement of a product and how appropriate it is for the user. F – Function - What a product does and how it works M – Manufacture - Techniques and processes used to manufacture/make a product. M – Materials - A resource used to manufacture a product.</p>	<p>Understand costing, how much it costs to make, (Lay plans) the profit and how product costs change depending on brand/ target market.</p> <p>Understanding target market linking to branding.</p> <p>Apply the terminology in several aspects of the design process i.e. product analysis, specification and initial design annotations.</p> <p>Manufacture final product and understand the different manufacturing processes used in industry.</p> <p>Select materials based on brief and artist research. Understand fibres and material properties and how these effect the printing process.</p>
<p>Which ACCEESSFMM points are specific to this unit of work and know their individual definitions C – Cost - The money paid to cover materials, equipment, labour, buildings and services so a product can be manufactured E – Environment - The positive or negative impact a product may have on the environment. Including the materials and energy used for manufacturing. S – Safety - How safe a product is to manufacture and use M – Manufacture - Techniques and processes used to manufacture/make a product.</p> <p>Products, even though similar in shape and size, can vary in quality based on the materials and processes used to make them.</p>	<p>Describe products in relation to these words/definitions. Use ACCEESSFMM to create specification for own product.</p>

<p>Design Brief & Situation</p> <p>A design brief is a document for a design project developed by a person or team in consultation with the client/customer. They outline the deliverables and scope of the project including any products or works, timing and budget.</p>	<p>Students will read through the design brief document, highlighting key elements that link to the specification.</p> <p>Students will understand the term 'design brief' and how these are used in many creative industries – focusing on the textile industry.</p>
<p>What is fibre? – Recall</p> <p>Fibres are very fine, hair-like structures that are spun or twisted into yarns.</p> <p>There are 3 different types of fibres (synthetic, natural and regenerated)</p> <p>The names of natural fibres and their properties (cotton, linen, silk and wool)</p> <p>M – Materials – A resource used to manufacture a product.</p>	<p>Students will understand the main two fibres of fabric (<i>This topic will be revisited in more detail throughout the project and finally in the mini print project</i>)</p> <p>-Natural -Synthetic</p>
<p>Product Analysis</p> <p>Product analysis involves examining product features, costs, availability, quality, appearance, and other aspects. Product analysis is conducted by potential buyers, by product managers attempting to understand competitors and by third party reviewers.</p> <p>ACEESSFM will be used to successfully analyse existing products on the market (Hanging Decorations) Based on the following ACCESSFM key words.</p> <p>A – Aesthetics - The appearance of a product</p> <p>S – Size - The physical dimension and measurement of a product and how appropriate it is for the user.</p> <p>C – Customer - A single person or a target market group that a product or service is aimed at.</p> <p>F – Function - What a product does and how it works</p> <p>C – Cost - The money paid to cover materials, equipment, labour, buildings and services so a product can be manufactured</p> <p>E – Environment - The positive or negative impact a product may have on the environment. Including the materials and energy used for manufacturing.</p> <p>S – Safety - How safe a product is to manufacture and use</p> <p>M – Materials – A resource used to manufacture a product.</p>	<p>Students will be introduced to product analysis, understanding the definition and the benefits of using this industry.</p> <p>Assess market researched base on existing products (Product analysis)</p> <p>Students will be supplied with a product that they will analyse. Size will be explored enabling students to use mathematic equipment to estimate the sizing of the product using correct dimension diagrams.</p> <p>Students need to understand the differences in target markets and what types of product appeal to each. Understand target markets and how this is used in industry.</p> <p>Understand the function of the product.</p> <p>Cost will be looked at, with students giving opinions of cost and the differences in higher/ lower end markets.</p> <p>Environment – Linking to the 6 R's of sustainability Rethink Refuse Repair Reduce Reuse Recycle</p>

	<p>Most of the decorations have been made from felt but students should identify what fibre this is. (Synthetic – acrylic based)</p> <p>Differentiate the quality of different pencil cases and be able to compare them for advantages and disadvantages.</p>
<p>Specification –A design specification is a detailed document providing a list of points regarding a product or process. For example, the design specification could include required dimensions, environmental factors, ergonomic factors, aesthetic factors, maintenance that will be needed.</p> <p>A design specification needs to be produced to focus a designer’s intentions in designing a product for a certain audience</p> <p>The difference between a consumer and a manufacturing specification.</p> <p>The difference between features within a need and a desire.</p> <p>This will be built around the key ACCEESSFM words.</p> <ul style="list-style-type: none"> - Cost - Environment - Safety - Manufacture 	<p>Students will understand what a specification is and how to write a design specification they can follow to meet an audience needs</p> <p>Students will include words such as</p> <ul style="list-style-type: none"> - Must - Should - Could <p>And in further detail explain these linking to ACCESSFM Keywords.</p>
<p>Textile Artist Research</p> <p>It is very important to both evaluate and assess other designs work when creating a new product. Many projects are based around existing products and students must be aware of other textile designers.</p>	<p>Students will engage in many creations from the artist Holly Levell, analysing her designs and giving personal opinions on this.</p> <p>Students will use Holly’s work to inspire their own design.</p>
<p>Logos & Branding</p> <p>Colour is very important in branding and marketing because it is where first impressions of customers are based. Also, colour is the secret in producing a good identity for a company. Colours are more than just a visual aid because colours convey emotions, feelings, and experiences.</p> <p>Different colours have different psychological effects on consumers – red encourages appetite, blue provides a sense of security, green stimulates harmony, orange promotes enthusiasm, purple is associated with royalty, and so on</p>	<p>Students will be taking influence from current food brands on the market such as walkers, so it is very important that they understand the importance of branding and marketing and how this links to colour theory. (How we recognise a flavour or brand based on colour)</p>
<p>Applique</p> <p>Applique is a French wording meaning ‘to apply’.</p> <p>This decoration technique is used to create surface decoration on fabric.</p> <p>Stitches need to be even and of a specific size.</p>	<p>Students will complete a set of questions on applique and understand the definition and origin.</p> <p>Use of applique to Decorate final product.</p> <p>Thread a needle and tie a knot.</p> <p>Cut fabric accurately</p> <p>Pin onto a larger piece</p> <p>Hand stitch neatly using embroidery stitches (Back stitch, running stitch, French knot, blanket stitch)</p>

<p>Design Designs are developed using an iterative process The iterative design process is a continuous cycle where improvements can be made.</p> <p>Complete the following design stages</p> <ul style="list-style-type: none"> - Mind Map (Initial Ideas) - Drawing board - Design Developments x2 - Final Design <p>S – Safety - How safe a product is to manufacture and use</p>	<p>After completing the research stage, students will then design, Students will use their research to inspire and influence their designs.</p> <p>Continuous line will be revisited to build on skillset – this will be used to complete the drawing board.</p> <p>Biomimicry Pattern designs will be used to decorate surface using embroidery stitches – these need to be designed beforehand.</p> <p>Students will assess work after the design development stage, including peer assessment. This will guide students through the next process of final design, allowing them to refine and modify existing designs to form their final. - - Develop ideas through specification and feedback Challenge their design ideas to improve them. -Develop through the design process from initial ideas to developments to final design.</p> <p>Students will also form a health and safety sheet surrounding their final product based on their final design.</p>
<p>Textile Equipment Many styles of equipment are used in textiles depending on the product you intend to make. Focus will be on equipment such as:</p> <ul style="list-style-type: none"> • Fabric scissors • Sewing machine • Stitch unpicker • Needle • Thread • Pins • Pinking Shears • Iron 	<p>Students will spend time engaging in group and individual tasks to understand names and uses of key textile equipment.</p> <p>Students will be using equipment to complete a sample of stitches and their final product safely and successfully.</p>
<p>Sewing Machine The sewing machine a machine with a mechanically driven needle for sewing or stitching fabric. There are main parts to the sewing machine which they will use</p> <ol style="list-style-type: none"> 1. Thread up 2. Needle 3. Bobbin 4. Balance wheel 5. Stitch menu 6. Reverse stitch button 7. Spool pin 8. Stitch selector <p>The health and safety aspects related to the use of a sewing machine. Setting up a sewing machine in a repetitive process which will be used regularly during textiles. When threading the machine, they will need to look for putting the thread onto the spool, that they have created</p>	<p>Set up the sewing machine effectively and safely. Sew safely and confidently in a straight line, around corners and curves.</p> <p>(Sewing Machine Test)</p> <p>Students will use the sewing machine to manufacture their final product.</p> <p>They will learn technical skills such as how to insert a zip.</p>

<p>an 'N' shape with the thread at the front and that 2 threads are visible at the sewing plate before you are able to sew safely.</p> <p>Sew in a straight-line using lock stitch</p> <ul style="list-style-type: none"> - Inserting a zip - Changing the foot of the machine 	
<p>Guide To Stitches</p> <p>Embroidery Stitches are used to decorate textile products and garments and can also be an effective way to attach materials together. The main stitches are.</p> <ul style="list-style-type: none"> - Running Stitch - Backstitch - Blanket Stitch - French Knot 	<p>Before completing their final product, students will practice set embroidery stitches.</p> <p>They will apply all the textile equipment knowledge and successfully apply in safe practice.</p>
<p>A product must be assembled in a particular order for it to be made to be manufactured correctly.</p> <p>Production Plan</p> <p>Products can be manufactured from a variety of parts and materials.</p> <p>The different parts of the decoration are assembled in a specific order and what they are.</p> <p>What tool will be needed for the assembly of a fabric decoration (pattern cutting, embroidery needle, embroidery thread, embroidery stitch.)</p> <p>The correct order to assemble a felt decoration.</p> <ol style="list-style-type: none"> 1. Create pattern based on final design. 2. Embroider biomimicry pattern 3. Pin Pattern pieces together (Back and front) Stitch together. 4. Stuff & Add ribbon. <p>A seam allowance is the space between the stitch and the edge of fabric which allows for a secure and durable stitch.</p> <p>Accurate stitching is necessary for a quality product (straight stitch).</p> <p>Sewing can also be corrected if mistakes are made using an unpicker</p> <p>Fastening Components</p> <p>Many fastening components can be used to help the function of the product. These will vary depending on the function. Students will focus on five specific fastening components.</p> <ul style="list-style-type: none"> - Zipper - Buttons - Velcro - Hook & Eye - Poppers <p>Processes and Manufacturing</p> <p>Many processes and manufacturing techniques are used in industry. Students will focus on</p> <ul style="list-style-type: none"> - Mass - Batch - One Off 	<p>Put a product together in the correct order and make a quality product.</p> <p>Identify the correct order that a pencil case should be manufactured using a production plan.</p> <p>Students will follow the production plan to the final steps.</p> <p>(double)</p> <p>Make a high-quality product using a range of embroidery stitches.</p> <p>Correct own mistakes using an unpicker.</p> <p>Students will be able to identify the fastening based on images shown, they should know how and why it is used. (Giving examples of products)</p> <p>Students will be able to give examples of each, understand the target market and give examples of companies or stores that use this type of manufacturing process.</p>

<p>Print Skill Mini Project What is fibre? Recall Fibres are very fine, hair-like structures that are spun or twisted into yarns. There are 3 different types of fibres (synthetic, natural and regenerated). The names of natural fibres and their properties (cotton, linen, silk and wool) The names of synthetic fibres and their properties (polyester, nylon and acrylic) Fibres are turned into thread by pulling and spinning them together. They can then be turned into fabric using an industrial loom. The 2 directions a thread will travel in made into a fabric (warp = up and down, weft = left and right) Fabrics are woven, knitted or bonded (non-woven) and how this happens. The differences between a fibre and a fabric.</p>	<p>Choose fabrics according to their properties. Understand the advantages and disadvantages.</p>
<p>Biomimicry -Biomimicry is the emulation of the models, systems, and elements of nature for the purpose of solving complex human problems.</p>	<p>Students will revisit biomimicry and understand the key word in further detail. Videos, examples, and diagrams will be used to imbed knowledge. Students will then complete a worksheet surrounding biomimicry and complete a set of innovative design examples that will be used to inspire their surface pattern design.</p>
<p>Print Skill Mini Project Other methods of surface decoration will be explored in the mini technique project, allowing students to utilise methods in future projects.</p> <ul style="list-style-type: none"> • Tie dye • Block printing • Embroidery • Applique • Batik <p>M – Materials – A resource used to manufacture a product.</p>	<p>Choose fabrics according to their properties. Create samples on both natural and synthetic fabrics to understand the differences between them both. (Textile Mini Project)</p> <p>Students will be able to differentiate between material fibres, successfully selecting the best material to use.</p>
<p>Curriculum links to careers Unit: All – Lesson completed at beginning of each term/rotation. Term 1: Costume Designers - Film Term 2: Food Nutritionist Term 3: Electrician</p> <p>Links: How careers across the industry link with the design process. Looking at the daily roles of specific people/careers and how their job is reliant on the iterative design process, an integral part of each project students’ study in the rotation of D&T, textiles and food. Outcome: Students identify links and explain how the employees work individually or as a team to meet the needs of the consumer/target market. Listing skills required for the role.</p>	