

## Textiles- Curriculum overview

### Key stage 2 (primary school knowledge)

*No prior learning is assumed due to variation of teaching amongst primary schools.*

- Understand how textiles engineering is used in many aspects of society
- Recognise the difference between a drawing and a design
- Demonstrate safe practices when using equipment.
- Demonstrate working in a safe manner
- Recognise what techniques will be appropriate in order to produce a product based on their designs.
- Demonstrate some practical or decorative outcomes

### Key skills/content requirements at GCSE

- The impact of new and emerging technologies
- Generation of energy
- Modern and smart materials
- Functions of mechanical devices and forces
- Electronic systems
- Programmable components

- Types of metals
- Types of papers and boards
- Types of plastics
- Types of fabrics and fibres
- Types of timbers and manufactured boards
- Environmental issues
- Past and present designers

- Develop and communicate design ideas
- Textiles manufacturing
- Specialist textiles equipment
- Surface decoration

### Year 7

#### Core aim

#### 10-14 week rotation

Within year 7 textiles students will be taught the sources and origins of natural and synthetic fibres and how fibres are used to construct different fabrics. Within textiles environmental issues surrounding the manufacture of textile products and current practices used to reduce energy and waste, which contributes to global warming will be taught.

### Year 8

#### Core aim

#### 10-14 week rotation

Within year 8 the students will build upon the skills and knowledge they learnt in year 7. Students will be taught about how emerging technologies are used to enhance textile products including smart and modern materials and how their properties can be used to enhance textiles products.

<p>We will look at the role of the designer and what they must consider when working to a brief and specification. Students will go on to explore the design process, focusing on design development and the importance of on-going evaluation of their design and practical work.</p> <p>Students will safely practise the basic skills needed to construct a product based on their own ideas and demonstrate a range of practical skills which can be applied to life outside of the classroom, starting with threading a needle, hand stitching and safely using a sewing machine. Students will also practise a range of decorative techniques such as applique, tie-dye and paint/wax transfers to enhance their final practical outcomes.</p> <p><b>Practical skills</b></p> <ul style="list-style-type: none"> <li>• Demonstrate how to safely operate a sewing machine</li> <li>• Demonstrate how to select and use hand equipment</li> <li>• Demonstrate basic hand stitching for construction and decoration</li> <li>• Demonstrate a range of decorative techniques</li> <li>• Develop design ideas and avoiding design fixation</li> <li>• Produce paper patterns</li> <li>• Produce prototypes</li> <li>• Demonstrate planning and construction of a textiles product</li> </ul>			<p>Students will explore the textile industry’s impact on the environment and look at how contemporary designers are tackling issues including: ethics, social, climate and environment. Students will also be taught how textile products are produced on multiple scales from one-off to continuous and the positives and negatives of each.</p> <p>Students will build upon their designing and practical skills learnt in year 7 this will include: working to a design brief, developing a specification to develop a range of design ideas which they will develop and adapt based on feedback and self-evaluation.</p> <p>Students will plan their practical, select equipment and materials to safely and accurately produce a decorated textiles product for a specified end user.</p> <p><b>Practical skills</b></p> <ul style="list-style-type: none"> <li>• Analysis existing products to inform designing</li> <li>• Develop design ideas and self-assess outcomes against the brief and specification.</li> <li>• Demonstrate how to produce a production plan to guide their final outcome</li> <li>• Produce paper patterns</li> <li>• Produce and analysis prototypes</li> <li>• Demonstrate a range of decorative techniques</li> <li>• Continue to develop construction and decorative skills and enhance their practical knowledge</li> </ul>		
<b>Core knowledge</b>	<b>Portable knowledge</b>	<b>Key terms</b>	<b>Core knowledge</b>	<b>Portable knowledge</b>	<b>Key terms</b>
<ul style="list-style-type: none"> <li>• To be able to identify a range of natural and synthetic fabrics and their properties</li> <li>• To be able to explain how</li> </ul>	<p>Natural fibres</p> <p>Synthetic fibres- properties, sources and use.</p> <p>Fabric construction</p>	<p>Thread</p> <p>Fibre</p> <p>Yarn</p> <p>fabric</p> <p>Natural</p> <p>Synthetic</p> <p>Mineral</p> <p>Plant</p>	<ul style="list-style-type: none"> <li>• To be able to explain how modern textiles enhance lives</li> <li>• To be able to identify how current designers use technology to enhance their designs</li> </ul>	<p>Natural fibres</p> <p>Synthetic fibres- properties, sources and use.</p> <p>Modern developments in fibres/ fabrics</p> <p>Fabric construction</p>	<p>Fibre</p> <p>Thread</p> <p>Yarn</p> <p>Fabric</p> <p>Natural</p> <p>Synthetic</p> <p>Regenerated</p> <p>Sustainable</p>

<p>natural and synthetic fibres are sourced and made in to fabric</p> <ul style="list-style-type: none"> <li>To be able to identify a range of fabric constructions</li> <li>To be able to explain the 4 Rs of sustainability &amp; upcycling</li> <li>To be able to explain the environmental impact of textiles and what they can do to reduce their carbon footprint.</li> <li>To be able to explain why designers create and evolve designs.</li> <li>To be able to explain the difference between a brief and a specification</li> </ul>	<p>Environmental issues related to the wider textiles industry – 4 R of sustainability</p> <p>Design development</p> <p><b>Practical</b> Use of a sewing machine Decorative techniques Developing design ideas Consideration of and working to a brief and end user Construction techniques</p>	<p><b>Animal</b> <b>Construction</b> <b>Weaving</b> <b>Knitting</b> <b>Non-woven</b> <b>Needle</b> <b>Thread</b> <b>Tacking</b> <b>Pinning</b> <b>Knot</b> <b>Embroidery</b> <b>Decorative technique</b> <b>Paper pattern</b> <b>Seam allowance</b> <b>Design fixation</b> <b>Design development</b> <b>Brief</b> <b>Specification</b> <b>Evaluation</b></p>	<ul style="list-style-type: none"> <li>To be able to identify a range of modern and smart materials and explain how they work</li> <li>To be able to explain how technologies enhance production within the textiles industry</li> <li>To be able to develop and use different ways to communicate design ideas.</li> <li>To be able to identify a range of production methods</li> <li>To be able to explain the impact synthetic fibres on the environment</li> </ul>	<p>Environmental issues – current design practises Textiles and fashion designers- influences, styles</p> <p><b>Practical</b> Use of a sewing machine Range of decorative techniques: applique, mola, trapunto, hand embroidery Communication techniques Developing design ideas</p>	<p><b>Natural</b> <b>Smart</b> <b>Technology</b> <b>Modern</b> <b>Production scale</b> <b>Needle</b> <b>Thread</b> <b>Tacking</b> <b>Pinning</b> <b>Knot</b> <b>Resistant dyeing</b> <b>Mola</b> <b>Trapunto</b> <b>Embroidery</b> <b>Decorative technique</b> <b>Paper pattern</b> <b>Seam allowance</b> <b>Design fixation</b> <b>Design development</b> <b>Brief</b> <b>Specification</b> <b>Evaluation</b></p>
	<p><b>Term 1</b></p>	<p><b>Term 2</b></p>	<p><b>Term 3</b></p>	<p><b>Portable knowledge</b></p>	<p><b>Keywords</b></p>
<p><b>Year 9</b></p>	<p><b>Construction sampling project</b></p>	<p><b>Product holder</b></p>	<p><b>Dress project</b></p>	<p>From KS3 in to year 9</p>	<p>Fibres Yarn Thread</p>

	<p>Produce a range of construction samples and identify what they are used for: hems, seams, fastenings</p> <p>Retrieve and extend knowledge of theory learnt at KS3- including: fibres and their sources and origins, natural and synthetic fibre, fabric construction and properties.</p> <p><b>Picture project</b> Produce a range of decorative techniques to apply to a textiles picture: resistant dyeing methods, printing methods, applique, mola, trapunto, attaching buttons/ sequences.</p> <p>Investigate work from a specific art movement to use as inspiration to develop design ideas for a textiles picture.</p>	<p>Produce a product holder made from fabric constructed by student</p> <p>Recap and extend knowledge of a range of fabric constructions and how that adds to a product's properties and characteristics.</p> <p>Investigate the ethical and cultural impact the textiles industry has on society</p> <p>Recap and extend knowledge on different scales of production</p> <p>To investigate how the properties and characteristics of a product enhance the fabric's performance and how they help designers select appropriate materials for a specification.</p> <p>Develop a range of design ideas for a specific end user.</p>	<p>Produce a dress using the skills developed in year 9 to construct and embellish a dress.</p> <p>Develop a range of dress designs and prints based on the work of a textiles artist</p> <p>Explore a range of printing techniques</p> <p>Demonstrate safe and accurate use of a range of tools used to enhance the manufacturing process</p> <p>Demonstrate a range of techniques to support quantity production</p> <p>Use a range of shaping, adding and reducing techniques used in the construction of a garment.</p> <p>Use and adapt basic dress blocks to create a paper pattern</p> <p>Textiles production in industry including: manufacturing in quantity and stock forms.</p> <p>Social, moral, cultural and environmental issues related to</p>	<p>Fibres yarns and fabrics Introduction to natural, synthetic and regenerated fibres</p> <p>Basic fabric construction</p> <p>Smart and modern materials</p> <p>Properties of natural fibres Environmental issues</p> <p>Practical Applique Pinning/ tacking Operating a sewing machine Hand embroidery</p>	<p>Fabric Construction Garment Press Tack Design Analysis Evaluate Factors Production Abrasion Elasticity Absorbent Insulation Properties characteristics Regenerated Recycle Upcycle Gather Pleat Dart Paper pattern Applique Wadding Knitting Weaving Nonwoven Construction Adapting Environmental Ethical</p>
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	<i>Recap and extend on a range of decorative techniques</i>		manufacturing in the textiles industry.		
<b>Year 10</b>	<p><b>Card mechanism project</b> Students will design and make an interactive pop up card.</p> <p>Types and properties of paper and boards</p> <p>Types of movement</p> <p>Classification of levers, linkages, cams, followers and pulleys, cranks and sliders</p> <p>The impact of new and emerging technologies</p> <p>How industry and emerging technologies impact: Sustainability, people, culture, society and the environment</p>	<p><b>Hadid bag project</b> Students will design a bag inspired by architect Zaha Hadid. They will produce a range of sampling/ prototypes to investigate fabric manipulation</p> <p>Investigation of existing designers as a source of inspiration.</p> <p>Communication techniques and developing design ideas</p> <p>Justifying and recording design ideas</p> <p>Smart and modern materials to enhance outcomes</p> <p>Manipulation of materials and prototyping.</p>	<p><b>Etexitels, timbers, metals and polymers.</b> <b>No practical outcomes based on the following topics</b></p> <p>Types of ferrous metals, non-ferrous metals and their properties</p> <p>Types of natural timbers: hardwoods, softwoods and manufactured boards and their properties</p> <p>Types of thermoforming and thermosetting polymers and their properties</p> <p>Types of system sensors, control devices and components and system outputs including how to process and respond to analogue inputs</p> <p>Use of flowcharts.</p> <p><b>Recycling bucket hat project</b> Students will produce a bucket hat using recycling and upcycled materials.</p>	<p>Knowledge of properties and characteristics of fabrics.</p> <p>Design development</p> <p>Fabric construction techniques</p> <p>Origins and sources of fibres</p> <p>Tools and equipment used during manufacture</p> <p>Quantity techniques used during scaled manufacture</p> <p>Neatening, Shaping, adding and reducing techniques used in fabric construction</p> <p>Production methods used in the textiles industry</p>	<p>Mechanical</p> <p>Electronic</p> <p>Evaluate</p> <p>Analysis</p> <p>Ecological</p> <p>Construction</p> <p>Prototype</p> <p>Sustainability</p> <p>Malleable</p> <p>Ductile</p> <p>Tough</p> <p>Hard</p> <p>Flexible</p> <p>Ratio</p> <p>Velocity</p> <p>Output speed</p> <p>Input speed</p> <p>Sensor</p> <p>Circuit</p> <p>Society</p> <p>Culture</p> <p>Enterprise</p> <p>Properties</p> <p>Reinforcement</p> <p>Stock</p> <p>Industry</p> <p>Etexitels</p> <p>Aesthetic</p> <p>Cost</p>

			<p>Factors to consider within the textiles industry: environmental, aesthetic, cost, social and cultural</p> <p>Methods of reinforcement and stiffening of textiles during manufacture.</p> <p>Types of stock forms used and the sizes needed for the manufacture of textile products</p> <p>Types of processes that can be used to cut and shape textile materials during manufacture. Types of Fabricating/ constructing/ assembling used on textile products during manufacture</p> <p>Types of Surface finishes and treatments used on textile products during manufacture</p>	Operate a sewing machine safely and confidently	<p>Timbers</p> <p>Polymers</p> <p>Metals</p>
Year 11	<p><b>Contextual challenge: Investigate and design</b></p> <p><b>1.1</b> Investigation of needs and research</p>	<p><b>Contextual challenge: Make</b></p> <p><b>3.1</b> Manufacture</p> <p><b>3.2</b> Quality and Accuracy</p>	<p><b>Revision and preparation for examination</b></p> <p>Revision for textiles paper exam</p> <p>Revision for core paper exam</p>	Understanding of properties and characteristics of a range of materials including application: Polymers Metals	<p>Research</p> <p>Analysis</p> <p>Design development</p> <p>Prototype</p> <p>Evaluation</p> <p>Critical thinking</p> <p>Problem solving</p>

	<p><b>1.2</b> Product Specification</p> <p><b>2.1</b> Design ideas</p> <p><b>2.4</b> Communication of design ideas</p> <p><b>2.2</b> Review of initial ideas</p> <p><b>2.3</b> Development of design ideas into a chosen design</p> <p><b>2.5</b> Review of chosen design</p> <p><i>NEA will be completed within double lesson and single lesson used for retrieval and revision of core subject knowledge.</i></p>	<p><b>4.1</b> Testing and evaluation</p> <p><i>NEA will be completed within double lesson and single lesson used for retrieval and revision of core subject knowledge.</i></p>		<p>Timbers</p> <p>Paper and card</p> <p>Gears and levers</p> <p>Energy and the responsibility of the designer</p> <p>Construction techniques</p> <p>A range of factors to consider in industry: ethical, environmental, cultural, social.</p>	<p>Manufacture</p> <p>Production</p> <p>Time plan</p> <p>Specification</p> <p>Brief</p> <p>Critical analysis</p> <p>Ergonomics</p> <p>Anthropometric</p> <p>Data</p> <p>Survey</p> <p>Interview</p> <p>Reflection</p> <p>Market research</p> <p>End user</p> <p>Design fixation</p> <p>Initial design</p> <p>Innovate</p> <p>Product analysis</p> <p>Designer</p> <p>Engineer</p>
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**GCSE external assessment:**

Design & Technology GCSE (9-1) with a specialism in Textiles

- Controlled assessment - 50% of final grade to be started in Summer of Year 10,
- Written examination worth 50% of the final grade to be sat at the end of Year 11.

### **SMSC in D&T Textiles**

In design technology social, moral, spiritual and cultural is developed in a number of ways. We teach our students to think about the impact of their designing and making on the environment, people and the wider world. We teach our students about the importance of the 4 R's and sustainability to encourage them to think about their responsibility as part of the future generation. Students are expected to demonstrate high standards of behaviour and encourage their peers to do the same to develop a sense of social responsibility and respect. Respect and positivity is encouraged through the process of peer evaluation of each other's work. Within lessons we encourage students to take and give criticism positively and to verbally explain their thoughts in a respectful and positive way. We encourage students to take chances within their work taking inspiration from the wider world and enjoying the process of developing and manufacturing functioning products which reflect the personality and style of each individual student.

### **Spiritual development in D&T Textiles**

Spiritual development and self-belief is of high importance in design and technology. The creative designing and making process inspires students to bring out their hidden talents, which helps all students with self-confidence and belief in their own abilities. Our students are taught how to investigate products, aesthetic and functional, past and present and examine how they affect the quality of our daily lives. They are encouraged to develop their thinking skills and explore the wider world and use this inspiration when developing their own design ideas

### **Moral development in D&T Textiles**

In design and technology we try to develop a sense of 'moral conscience in our students. We teach students to consider the wider impacts on the environment when designing and making new products, and encourage them to think about their chosen materials and components and whether they are taking into account sustainability and the environmental impact of their design choices. The 3 R's are frequently discussed throughout the designing and making process. Within the lesson pupils are expected to show respect to others and take responsibility for their own actions and encourage others to do the same.

### **Social development in D&T Textiles**

As part of the student's social development within design technology we encourage students to accept responsibility for their behaviour and the safety of others by enforcing clear expectations which in turn provides our students with a safe, secure and structured learning environment. We encourage team and pair work to help build mutual respect and to be accepting of each other's strengths and weaknesses. We encourage our students to take part in self and peer evaluation, which allows students to give their opinions and to give and accept constructive criticism as a way to improve their outcomes.



### **Cultural development in D&T Textiles**

Within design technology students are taught to consider that all their design work should be sensitive to needs and beliefs of different cultural backgrounds or groups of people, ensuring all imagery, text and products produced will not be deemed as being offensive. Students are given opportunities to use the work of artists, designers and inspiration from the wider world and from a wide range of cultures and historical contexts to influence and help develop their own work