

**Miers Court  
Primary School**

# Design & Technology

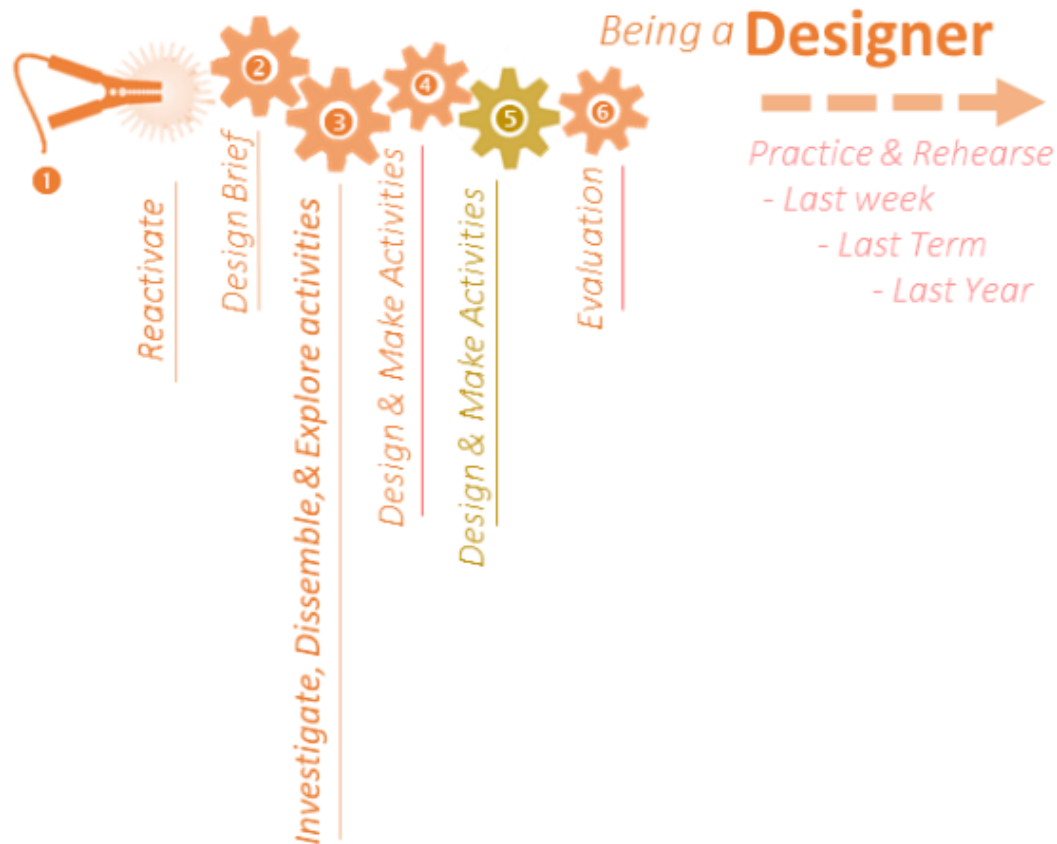
We want our Design & Technology curriculum to be a real purposeful experience for the children - having a real-life purpose and audience for their product design and then create these. Our children will learn the practical elements of design and making so that they are able to create products which are of good quality and meet the design briefs.

## Shining Bright, Aiming High

Our Miers Court curriculum underpins our school values in the following way:

- |                     |  |
|---------------------|--|
| <b>Self-belief</b>  | Pupils are giving and receiving positive feedback and understanding this helps them create even better products.                                 |
| <b>Togetherness</b> | Pupils are able to collaborate and work together in their designing and making.  |
| <b>Aspiration</b>   | To be open-minded and realise that they have solutions to problem and their inventions could one day change the world.                           |
| <b>Resilience</b>   | Pupils learn to be confident to explore their ideas and plans and listen to feedback to adjust. They are eager to try new things and experiment. |
| <b>Success</b>      | To be able to create a working product which fits the design brief given.  |

## What Is The Purpose Of **Design & Technology** Curriculum?



The teaching of DT needs to ensure that we develop the knowledge of techniques alongside encouraging individual's creativity and approach to meeting the design brief. It is taught weekly in every class, and alternates termly with Art.

### 1. Design Brief

The first step is for the children to look at a design brief. This will outline the function, purpose and audience, as well as any other design criteria for their products.

## **Audience + Purpose = Form**

### 2. Investigating, Disassemble and Explore Activities

Each unit will have a linked designer which fits with the unit for the children. The next step is to examine real life products and devices and explore. The children need to be able to explore and disassemble these so that children understand how they work. They record their ideas in their Sketch Books which will show their exploring and designing thought processes.

### **3. Developing Knowledge**

The teacher will explicitly teach the substantive and disciplinary knowledge. From this, the children need to be taught the skills they will need to create their own products, such as joining materials, stitching etc. The children need time to practice and refine their skills before being asked to apply them in making their own product.

The sketch-book will record these elements of knowledge development.

### **4. Design & Make Activities**

Children will then apply their skills in a Design and Make Activity. This allows the children to explore their own solutions to the design brief and use their skills. The product needs to be made in real life and shared with other, including the target audience for the product.

### **5. Evaluation**

As part of the process, the final stage is for the children to evaluate their own and others' product through verbal and written critique. Children will then evaluate their products directly against their design brief. They will evaluate whether the product has met the brief, and suggest future improvements.

## How Is **Design & Technology** Sequenced Throughout the School?

The Art & Design knowledge for the pupil is sequenced to build up not only in year but also in three key themes over each year.



**Structures**



**Mechanisms**



**Textiles**

	Key Theme 1 Structures	Key Theme 2 Mechanisms	Key Theme 3 Textiles
<b>R</b>	Junk modelling, blocks and small world	Using tools effectively	Explore and joining materials
<b>1</b>	Freestanding Structures	Levers (simple)	Joining Fabrics
<b>2</b>	Strengthening and reinforcing	Wheels and axis	Basic sewing
<b>3</b>	Frame structures (Simple)	Pneumatics	Embellishment and Function
<b>4</b>	Shell Structures (Nets and Folding)	Cams	2D to 3D Fabric Construction
<b>5</b>	Bridges and Trusses	Gears and Pulleys	Combining Fabrics and Decorative Techniques
<b>6</b>	Geodesic and Modular Structures	Cranks and Linkages	Designing for a User (Product with Purpose)

## How is **Design & Technology** Sequenced Over The Year?

These are delivered in the following Terms:

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 5
<b>R</b>	In Year R, a range of DT activities are available to access across all terms. Skills are taught, developed and built upon throughout each term. Skills include but are not exhaustive of; experimenting with pushing, pulling, turning and sliding. Developing an understanding of structures by building with a range of materials, investigating stability, balance and shape, joining parts effectively, and adapting their designs as they build. Exploring fabrics, using simple joining methods such as gluing, stitching, or threading, manipulate materials to create soft items, and handle tools like scissors safely and with increasing control.					
<b>1</b>			Weatherproof (Joining Fabric)	Houses (Structure)	Moving Story Book (Levers)	
<b>2</b>		Story quilting (Textiles)		Chariot (Wheels & Axis)	Architecture (Strengthening & Reinforcing)	
<b>3</b>			Fashion (Embellishment and Function)		Seaside Structure (Frame structures)	Farming (Pneumatics)
<b>4</b>	America pop-up model (Cams)	Andes jacket (textiles)				Storage (nets and folding)
<b>5</b>	Where is Oceania & Asia? (Gears and Pulleys)			Bridge Building (Bridges and Trusses)	Rainforest camouflage (Combining Fabrics)	
<b>6</b>	Greenhouse (Geodesic Structures)		Polar Survival Wear (Textiles for a purpose)		Factory mechanisms (Crank and Linkages)	

## What Are The End Points For Each Year In **Design & Technology**?

	Structures	Mechanisms	Textiles
	Across the terms and over the course of the year, children in Year R will be taught a range of skills linked to Design Technology. These are foundational skills which are developed upon as they move into Year 1 and beyond.		
YR	<ul style="list-style-type: none"> <li>Exploring movement through pushing, pulling, turning, and sliding.</li> <li>Constructing simple moving models.</li> <li>Problem-solving when mechanisms don't work as expected.</li> </ul>	<ul style="list-style-type: none"> <li>Building simple structures using blocks, recycled materials, and construction kits.</li> <li>Exploring stability, balance, height, and shape.</li> <li>Joining materials to make models (e.g., tape, glue, tabs, split pins).</li> <li>Adapting designs as they build.</li> </ul>	<ul style="list-style-type: none"> <li>Exploring and selecting fabrics and soft materials.</li> <li>Basic joining techniques: gluing, simple stitching, weaving, threading, tying.</li> <li>Manipulating materials to make simple fabric creations.</li> <li>Using tools (scissors, hole punches, needles with supervision) safely.</li> </ul>
Y1	Year 1 - Freestanding Structures Structure Focus: Basic construction with everyday materials Skills & Concepts: <ul style="list-style-type: none"> <li>Joining paper, card, and simple construction materials</li> <li>Making models stand up without support</li> <li>Introduction to folding, tabs, and slot joins</li> </ul>	Year 1 - Levers (Simple) Mechanism Focus: Basic levers and sliders Skills & Concepts: <ul style="list-style-type: none"> <li>Understanding push/pull forces</li> <li>Using split pins or card strips to make parts move</li> <li>Exploring how levers pivot at a point</li> </ul>	Year 1 - Joining Fabric (Introduction to Textiles) Textile Focus: Simple joining and decorating Skills & Concepts: <ul style="list-style-type: none"> <li>Exploring different fabrics (textures, colours)</li> <li>Using glue and simple stitches (overlapping, sticking)</li> <li>Decorating with felt shapes, sequins, or fabric pens</li> </ul>
Y2	Year 2 - Strengthening and Reinforcing Structure Focus: Making structures stronger and more stable Skills & Concepts: <ul style="list-style-type: none"> <li>Introduction to techniques: folding, layering, corrugating</li> </ul>	Year 2 - Wheels and Axles Mechanism Focus: Fixed and free-moving axles Skills & Concepts: <ul style="list-style-type: none"> <li>Understanding rotation and how wheels move</li> </ul>	Year 2 - Basic Sewing (Running Stitch) Textile Focus: Hand-stitching and simple assembly Skills & Concepts: <ul style="list-style-type: none"> <li>Introduction to running stitch</li> <li>Joining two fabric pieces together</li> </ul>



	<ul style="list-style-type: none"> <li>• Exploring how materials can be strengthened</li> <li>• Testing load and stability</li> </ul>	<ul style="list-style-type: none"> <li>• Distinguishing between fixed vs moving axles</li> <li>• Using dowels, cotton reels, or straws for axles</li> </ul>	<ul style="list-style-type: none"> <li>• Stuffing and simple embellishment</li> </ul>
Y3	<p>Year 3 - Frame Structures (Simple) Structure Focus:</p> <p>Skills &amp; Concepts Constructing using basic frames:</p> <ul style="list-style-type: none"> <li>• Using sticks/straws to create a geometric frame (triangles, rectangles)</li> <li>• Understanding rigidity through shapes</li> <li>• Simple joining methods (tape, glue, pipe cleaners)</li> </ul>	<p>Year 3 - Pneumatics Mechanism Focus:</p> <p>Skills &amp; Concepts:</p> <ul style="list-style-type: none"> <li>• Using syringes and tubing to create movement</li> <li>• Understanding how air can be used to exert force</li> <li>• Introducing basic control of movement (e.g. through pressure)</li> </ul>	<p>Year 3 - Embellishment and Function Textile Focus: Functional and decorative elements</p> <p>Skills &amp; Concepts:</p> <ul style="list-style-type: none"> <li>• Use of templates and accurate cutting</li> <li>• Applying running stitch or backstitch</li> <li>• Adding decorations (buttons, beads, applique)</li> </ul>
Y4	<p>Year 4 - Shell Structures (Nets and Folding) Structure Focus:</p> <p>Creating enclosed structures using nets</p> <p>Skills &amp; Concepts:</p> <ul style="list-style-type: none"> <li>• Constructing 3D shapes from 2D nets</li> <li>• Using tabs and accurate folding to assemble</li> <li>• Measuring and scoring card</li> </ul>	<p>Year 4 - Cams Mechanism Focus:</p> <p>Cam mechanisms (linear to rotary motion)</p> <p>Skills &amp; Concepts:</p> <ul style="list-style-type: none"> <li>• Understanding how cams convert rotary motion to linear motion</li> <li>• Exploring cam shapes (snail, eccentric) and their effect</li> <li>• Introduction to followers and axles</li> </ul>	<p>Year 4 - 2D to 3D Fabric Construction Textile Focus: Shaping and turning fabric into form</p> <p>Skills &amp; Concepts:</p> <ul style="list-style-type: none"> <li>• Using templates and seam allowances</li> <li>• Sewing straight lines with improved accuracy</li> <li>• Introduction to fastening (Velcro, buttons)</li> </ul>
Y5	<p>Year 5 - Bridges and Trusses Structure Focus:</p> <p>Strong and stable frame structures</p> <p>Skills &amp; Concepts:</p> <ul style="list-style-type: none"> <li>• Exploring trusses and triangulation for strength</li> <li>• Use of dowels or wood with accurate measuring and cutting</li> </ul>	<p>Year 5 - Gears and Pulleys Mechanism Focus:</p> <p>Gear trains and pulley systems</p> <p>Skills &amp; Concepts:</p> <p>Understanding gear ratios and direction of movement</p> <ul style="list-style-type: none"> <li>• Exploring simple and compound gear systems</li> </ul>	<p>Year 5 - Combining Fabrics and Decorative Techniques Textile Focus: Advanced sewing and design combinations</p> <p>Skills &amp; Concepts:</p> <ul style="list-style-type: none"> <li>• Combining different fabrics and textures</li> <li>• Using applique, embroidery, and layering techniques</li> </ul>



	<ul style="list-style-type: none"> <li>Testing load-bearing capacity</li> </ul>	<ul style="list-style-type: none"> <li>Using pulleys to change direction or speed of movement</li> </ul>	<ul style="list-style-type: none"> <li>Planning layout and ensuring symmetry/pattern accuracy</li> </ul>
Y6	<p>Year 6 - Geodesic and Modular Structures Structure Focus: Complex, large-scale or modular designs Skills &amp; Concepts:</p> <ul style="list-style-type: none"> <li>Building large, lightweight structures using repeating modules</li> <li>Using advanced joining techniques (e.g. glue guns, string joints)</li> <li>Combining structural principles (triangles, arches, cross-bracing)</li> </ul>	<p>Year 6 - Cranks and Linkages Mechanism Focus: Crank and linkage systems Skills &amp; Concepts:</p> <ul style="list-style-type: none"> <li>Converting rotary to reciprocating motion</li> <li>Creating complex linkages (e.g. parallel motion)</li> <li>Integration of multiple mechanisms for compound movement</li> </ul>	<p>Year 6 - Designing for a User (Product with Purpose) Textile Focus: Product design with specific user needs Skills &amp; Concepts:</p> <ul style="list-style-type: none"> <li>Designing for purpose and function</li> <li>Applying a range of stitches (including backstitch, whip stitch, blanket stitch)</li> <li>Considering user needs, finishing techniques, and sustainability</li> </ul>