



D&T at the Unity Federation



Intent

Our Statement

Within the Unity Federation of Schools we intend to build a Design Technology curriculum which develops learning and results in the acquisition of knowledge and skills. We believe that Design and Technology is an important element of our children's education, taught within a curriculum that equips our children with valuable, practical skills.

Through the Design Technology curriculum, pupils will develop an understanding of both their own local culture and heritage, and a wider knowledge of the world around them.

We aim to, wherever possible, link work to other disciplines such as mathematics, science, history, computing and art. The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness. In turn our pupils at Unity Federation are encouraged to become innovators and risk-takers.



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IMPLEMENTATION

Our Statement

At the Unity Federation we show a clear progression of skills and knowledge within the five strands of the curriculum across each year group: Design, make, evaluate, technical knowledge and cooking and nutrition. Children will learn that designing and making is an iterative process through which they will need to continually evaluate their product by testing their ideas and making improvements. They will also use these important critical thinking skills to critique existing products and the work of others. Throughout their time at Unity, children complete projects where they design and make: structures; mechanisms and mechanical systems; electrical systems including programming; textiles products and food products. These projects are organised in such a way that the skills developed are age and stage appropriate and build on prior learning in DT and other subjects.

Through these lessons, we intend to inspire pupils to develop a love of Design and Technology and see how it has helped shaped the ever-evolving technological world they live in.

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IMPLEMENTATION *continued*

The Threshold Concepts

Our planning and assessment in history any structured around 4 main concepts

Master practical techniques

This involves developing the skills needed to make high-quality products

Take inspiration from design

This involves appreciating the design process that has influenced the products we use in every day life.

Design, make, evaluate and improve

This involves developing the process of design thinking and seeing design as an iterative process.



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IMPLEMENTATION *continued*

The Teaching and Learning

Our curriculum is split into three milestones, one for each of our three mixed age classes. Teachers, use the threshold concepts to plan suitably challenging learning for the children in their class.

Milestone 1

	Autumn	Spring	Summer
Year A	Designing a Nutritious Dish	Framed Structure – Tents	Solid Structures – Piers, Beach Huts and Lighthouses
Year B	Portable Snacks	Sliders – Rocket Ships	Levers and Mechanisms - trebuchet



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IMPLEMENTATION *continued*

The Teaching and Learning

Milestone 2

	Autumn	Spring	Summer
Year A	Structures – Castles	A Healthy Meal	Levers and Mechanisms
Year B	Christmas Keyrings	Non-European Food	Textiles – Book Sleeve
Year C	Paper Circuits	Textiles: Cushions or Finger Puppets	Wheels and Axels



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IMPLEMENTATION *continued*

The Teaching and Learning

Milestone 3

	Autumn	Spring	Summer
Year A	Materials – Textiles	Food and Nutrition – Tudor Banquet	Mechanisms - Cams
Year B	Mechanisms – Pulleys and Gears	Structures – Arch Structures	Structures – Frame structures
Year C	Scale Models	Electrics and Computing – AI	Food and Nutrition

Examples of Cultural Capital in D&T

Trips to look at structures at the seaside, exploring design



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IMPACT

At the Unity Federation we know nothing is learned unless it rests in pupils' long-term memories.

This does not happen, and cannot be assessed, in the short term. So to measure the impact of our history curriculum we try to explore the answers to two main questions:

- How well are pupils coping with the curriculum content?
- How well are they retaining previously taught content?

We explore this through:

Assessing Learning:

Before, during and after lessons.
Using the assessment statements
for each milestone.

Monitoring:

Subject leadership monitoring
and Governor monitoring, fol-
lowing our monitoring schedule.



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IMPACT *continued*

Progression through the milestones

	Milestone 1	Milestone 2	Milestone 3
Practical Techniques	<p>Cut materials safely using tools provided.</p> <p>Measure and mark out to the nearest centimetre.</p> <p>Demonstrate a range of cutting and shaping techniques (eg - tearing, cutting, folding and curling)</p> <p>Demonstrate a range of joining techniques</p> <p>Combining materials to strengthen products</p> <p>Creating products with moving parts - levers, wheels and winding mechanisms.</p> <p>Cut, peel and grate ingredients safely and hygienically.</p> <p>Measure or weigh using measuring cups and scales.</p> <p>Assemble and cook ingredients</p>	<p>Cut materials safely selecting the appropriate tool.</p> <p>Measure and mark out to the nearest millimetre.</p> <p>Apply a range of cutting and shaping techniques that include cuts with perimeter of the material such as slots and cut outs.</p> <p>Select appropriate joining techniques.</p> <p>Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product. (Levers and pneumatics)</p> <p>Chose suitable techniques to construct products and repair items.</p> <p>Strengthen materials using suitable materials.</p> <p>Prepare ingredients hygienically using appropriate utensils.</p> <p>Measure ingredients accurately to the nearest gram.</p> <p>Follow a recipe</p> <p>Assemble and cook ingredients.</p>	<p>Cut materials with precision and refine the finish with appropriate tools.</p> <p>Show an understanding of the qualities of materials in order to choose appropriate tools to cut and shape.</p> <p>Develop a range of practical skills to create products - cutting, joining and strengthening materials.</p> <p>Convert rotary motion to linear using cams.</p> <p>Understand the importance of correct storage and handling ingredients.</p> <p>Measure accurately and calculate ratios to scale recipes up and down.</p> <p>Demonstrate a range of baking and cooking techniques.</p> <p>Cook and refine recipes including ingredients, methods, cooking times and temperatures.</p>



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IMPACT *continued*

Progression through the milestones

Take Inspiration from design	Explore objects and designs to identify likes and dislikes Suggest improvements to existing designs Explore how products have been created.	Identify some great designers to support the generation of ideas. Improve upon existing designs, giving reasons for choice. Disassemble products to understand how they work.	Combine elements of design from a range of inspirational designers, giving reasons for choices. Create innovative designs that improve upon existing products. Evaluate design of products so as to suggest improvements to the user experience.
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IMPACT *continued*

Progression through the milestones

Design, make, evaluate and improve	Design products that have a clear purpose and an intended user. Make products, refining the design as work progresses. Use software to design	Design with purpose by identifying opportunities to design. Make products by carefully selecting materials. Refine work and techniques throughout creation and evaluate at the end.	Design with the user in mind. Make prototypes to test design and refine it. Ensure high quality finish, using art skills where appropriate.
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IMPACT *continued*

Vocabulary Progression

Vocabulary Progression

<u>Milestone 1</u>	<u>Milestone 2</u>	<u>Milestone 3</u>
Frame, solid, Shell, arch, slider, cutting, joining, combining, strength, safe, hygienic, measuring	Frame, solid, Shell, arch, slider, cutting, joining, combining, strength, safe, hygienic scoring Lever, wheel and axle, linked lever, pneumatics, assembling, slots, cutouts, utensils, disassemble	Frame, solid, Shell, arch, slider, cutting, joining, combining, strength, safe, hygienic scoring Lever, wheel and axle, linked lever, pneumatics, assembling, slots, cutouts, utensils, dissemble hydraulics, pulleys, gears, cams, prototype, rotary, linear, motion