

Design and Technology

BRW's D&T Curriculum Overview

Substantive Knowledge		Disciplinary Knowledge
<p>Technical Knowledge</p> <p>Content and Technical Facts Mechanisms, materials, tools, safety, food types, structures, simple circuits. Understanding how these materials, mechanisms and systems work.</p>	<p>Practical</p> <p>Knowledge of facts through hands-on exploration and making.</p>	<p>Disciplinary</p> <p>Evaluating and Analysing Designing, testing, evaluating, refining, problem-solving, reflecting.</p>
<p>Generating ideas Generating ideas, taking inspiration from a range of existing products.</p>		

Four Core Concepts			
Design	Make	Evaluate	Technical Knowledge

Six formal elements of DT					
The formal elements, a key part of the National Curriculum, are also woven throughout units					
Cooking and Nutrition	Textiles	Electrical Systems (KS2 Only)	Mechanisms/Mechanical Systems	Digital World (KS2 Only)	Structures

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National Curriculum Requirements KS1

Key stage 1 Pupils should be taught:

Design:

- **Design** purposeful, functional, appealing products for themselves and other users based on **design** criteria.
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

Make:

- Select from and use a range of **tools** and equipment to perform practical tasks (for examples **cutting, shaping, joining and finishing**).
- Select from and use a wide range of materials and components, including **construction materials, textiles and ingredients**, according to their characteristics.

Evaluate:

- Explore and **evaluate** a range of existing products.
- **Evaluate** their ideas and products against **design** criteria.

Technical knowledge:

- **Build structures**, exploring how they can be made stronger, stiffer and more stable.
- Explore and use **mechanisms** (for examples **levers, sliders, wheels and axles**) in their products.

Cooking and Nutrition:

- Use the basic principles of a healthy and varied diet to prepare dishes.
- Understand where food comes from.

KS1	Advent	Lent	Pentecost
FS1	Structures – Junk Modelling (Cinderella’s Castle)	Cooking and Nutrition: Soup (Jack and the Beanstalk – Growing)	Structures: Boats (Milly and the Mermaid)
FS2	Structures – Junk Modelling (Owl House for Owl babies)	Cooking and Nutrition: Soup (Little Red Hen - Growing)	Structures: Boats (The Owl and the Pusycat)
Year 1	Textiles – Puppets (Three Little Pigs/Robin Hood)	Cooking and Nutrition – Smoothies (Africa/South America)	Structures – Stable Structures (needs tweaking to suit building houses for GFOL)
Year 2	Mechanism – Moving Monster (inspired by the Colour Monster)	Structures – Chair for a troll (The Troll by Julia Donaldson)	Textiles – Pouches (Geography and History)

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National Curriculum Requirements KS2

Key stage 2 Pupils should be taught to:

Design:

- Use research and develop **design** criteria to inform the design of innovation, functional, appealing products that are fit for purpose, aimed as particular individuals or groups.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagram, prototypes, pattern pieces and computer-aided design.

Make:

- Select from and use a wider range of tools and equipment to perform practical tasks (for example **cutting, shaping, joining and finishing**) accurately.
- Select from and use a wider range of materials and components, including **construction materials, textiles, ingredients**, according to their functional properties and aesthetic qualities.

Evaluate:

- Investigate and analyse a range of existing products.
- **Evaluate** their ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in design and technology have helped shape the world.

Technical Knowledge:

- Apply their knowledge of how to **strengthen, stiffen and reinforce** more complex structures.
- Understand and use **mechanical systems** in their products (for example **gears, pulleys, cams, levers and linkages**).
- Understand and use **electrical systems** in their products (for examples **series circuits, incorporating switches, bulbs, buzzers and motors**).
- Apply their understanding of computing to program, monitor and control their products.

Cooking and Nutrition:

- Understand and apply the principles of a healthy and varied diet.
- **Prepare and cook** a variety of predominantly savoury dishes using a range of cooking techniques.
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

KS2	Advent	Lent	Pentecost
Year 3	Cooking and Nutrition – Eating seasonally (Nutrition and Movement – Science)	Mechanical Systems – Pneumatic toys (Force and Magnets – Science)	Digital World – Wearable Technology (Nim’s Island, Time in Maths)
Year 4	Electrical Systems – Torches (Science Electricity)	Textiles – Fastenings (Geography – Italy)	Structures – Helmets (History – Anglo Saxons and Vikings)

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Year 5	Electrical Systems – Doodles (Harry Potter)	Mechanical Systems – eco-bike (links to Science pulleys and forces)	Digital World – Monitoring Devices (links to Science)
Year 6	Textiles – Bags History and Geography	Digital World – Navigating the World History and Geography	Cooking and Nutrition – Come dine with me North America – Geography