



## RFS Curriculum Intent: Design Technology

### **Vision & Aims**

At Redcastle Family School, we nurture creative and imaginative thinking across the curriculum. We aim to inspire inquisitive minds that are keen to explore, design, create and evaluate. The creativity that we encourage enables children to be able to take part and think about the development of tomorrow's rapidly changing world; therefore, preparing them for their life beyond school.

Design and Technology also enables children to investigate and understand the world around them. The subject encourages children to direct their own learning and become problem solvers, both as individuals and as part of a team. Through studying Design and Technology, we combine practical skills with social and environmental issues, as well as functions and industrial practises. Pupils are therefore able to investigate how the world around them works and deepen their understanding of the technology around them, which they can then reflect on and evaluate.

### **Curriculum Design**

At Redcastle Family we have designed our curriculum using the projects on a page scheme established by the Design and Technology Association.

This ensures that the knowledge and content we have selected is based around the six essentials of good practice in D&T. They are consistent with the National Curriculum requirements and applied whenever children are designing and making products:

- User – children should have a clear idea of who they are designing and making products for, considering their needs, wants, interests or preferences. The user could be themselves, an imaginary character, another person, client, consumer or a specific target audience.
- Purpose – children should know what the products they design and make are for. Each product should perform a clearly defined task that can be evaluated in use.
- Functionality – children should design and make products that function in some way to be successful. Products often combine aesthetic qualities with functional characteristics. In D&T, it is insufficient for children to design and make products which are purely aesthetic.
- Design Decisions – when designing and making, children need opportunities to make informed decisions such as selecting materials, components and techniques and deciding what form the products will take, how they will work, what task they will perform and who they are for.
- Innovation – when designing and making, children need some scope to be original with their thinking. Projects that encourage innovation lead to a range of design ideas and products being developed, characterised by engaging, open-ended starting points for children's learning.
- Authenticity – children should design and make products that are believable, real and meaningful to themselves i.e. not replicas or reproductions or models which do not provide opportunities for children to make design decisions with clear users and purposes in mind.

### Structure of the programmes of study

Our curriculum matches the two strands of subject content within the National Curriculum: designing and making, and cooking and nutrition. As well as addressing the subject content for KS1 and 2, Projects on a Page reflects the purpose of study and meets the aims in a way that is appropriate to children's ages. Redcastle Family School has, where appropriate, tailored the themes of these projects to fit within wider learning areas of the curriculum as well as using discrete units which meet the aims of the programme of study in each year group.

Term	Autumn	Spring	Summer
Year 1	<ol style="list-style-type: none"> <li>1. Mechanisms: Sliders and Levers</li> <li>2. *Food: Celebrating Cultures and Seasonality.</li> </ol>	Structures: Freestanding structures.	Food: Preparing Fruit & Vegetables (Including Nutrition requirements for KS1)
Year 2	<ol style="list-style-type: none"> <li>1. Mechanisms :Wheels and Axles</li> <li>2. *Food: Celebrating Cultures and Seasonality.</li> </ol>	Food: Preparing Fruit & Vegetables (Including Nutrition requirements for KS1)	Textiles: Templates and joining techniques.
Year 3	<ol style="list-style-type: none"> <li>1. Food: Healthy and varied diet (including nutrient requirements for KS2)</li> <li>2. Structures: Shell structures (using computer aided design)</li> </ol>	<ol style="list-style-type: none"> <li>1. Textiles: 2D shape to 3D shape.</li> <li>2. *Food: Celebrating Cultures and Seasonality.</li> </ol>	<ol style="list-style-type: none"> <li>1. Structures: Shell structures (including computer aided design)</li> <li>2. Electrical systems: programming &amp; control.</li> </ol>
Year 4	<ol style="list-style-type: none"> <li>1. Mechanical systems: Levers and Linkages</li> <li>2. Food: Celebrating Cultures and Seasonality.</li> </ol>	Electrical Systems: Simple circuits and systems (Including programming & control)	<ol style="list-style-type: none"> <li>1. Food: Healthy and varied diet (including nutrient requirements for KS2)</li> <li>2. Mechanical Systems: Pneumatics</li> </ol>
Year 5	<ol style="list-style-type: none"> <li>1. Structures: Frame Structures</li> <li>2. Mechanical Systems: Cams</li> </ol>	3. Food: Celebrating Cultures and Seasonality. (including nutrient requirements for	1. Electrical Systems: Complex circuits and systems (Including

		KS2)	programming, monitoring control) 2. Link with Computing
Year 6	<ol style="list-style-type: none"> <li>1. Textiles: Combining different Fabric Shapes (Including Computer aided design)</li> <li>2. Textiles: Using Computer Aided design</li> </ol>	Mechanical Systems: Pulleys & Gears	<ol style="list-style-type: none"> <li>1. Food: Celebrating Cultures and Seasonality. (including nutrient requirements for KS2)</li> <li>2. Electrical systems: Monitoring and control.</li> </ol>

At the heart of Projects on a Page is the designing and making process in the programmes of study. The scheme of work ensures children design, make and evaluate products using the broad range of materials and components specified in the statutory requirements. These include construction materials, textiles, food, mechanical components and, in Key Stage 2 only, electrical components. Each Project Planner lists a range of possible resources to use including tools, equipment and materials which class teachers adapt as appropriate in order to meet the needs of the children in your class and ensure you comply with health and safety policy and guidance.

### Long Term Plan & Learning Journey

The sequence of the long term plan is designed to revisit key aspects of the Design Technology Curriculum. As pupils begin a new unit, teachers will reference how this builds on previous learning through teaching explicitly learning links.

This progression will revisit past outcomes and allow children to frame key questions around new learning. These threads:

Designing (Understanding contexts and purposes, generating and communicating ideas)



Making (Planning, practical skills and techniques).

Evaluating (Own ideas and existing products).

Cooking and Nutrition (Where food comes from, food preparation, cooking and nutrition).

The progression of Key skills and knowledge have been mapped out with instruction from the Design and Technology Association. A detailed breakdown of exactly what will be covered in each Key stage is outlined in the document link below:

Within the progression framework there are explicit examples of how this journey will look in relation to appropriate activities, outcomes and also statements which would reflect the children's perspective if the intent of learning had been achieved. This will be used to support the assessment and monitoring of curriculum effectiveness in line with school policy.

### DT in Early Years and Foundation Stage

DT		
Three and Four-Year-Olds/Range	Personal, Social and Emotional Development	<ul style="list-style-type: none"><li>• Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.</li></ul>

<p>Physical Development</p>	<ul style="list-style-type: none"> <li>• Use large-muscle movements to wave flags and streamers, paint and make marks.</li> <li>• Choose the right resources to carry out their own plan.</li> <li>• Use one-handed tools and equipment, for example, making snips in paper with scissors.</li> <li>• Manipulates a range of tools and equipment in one hand, tools include paintbrushes, scissors, hairbrushes, toothbrush, scarves or ribbons</li> </ul>
<p>Understanding the World</p>	<ul style="list-style-type: none"> <li>• Explore how things work.</li> </ul>
<p>Expressive Arts and Design</p>	<ul style="list-style-type: none"> <li>• Make imaginative and complex ‘small worlds’ with blocks and construction kits, such as a city with different buildings and a park.</li> <li>• Explore different materials freely, in order to develop their ideas about how to use them and what to make.</li> <li>• Develop their own ideas and then decide which materials to use to express them.</li> <li>• Create closed shapes with continuous lines, and begin to use these shapes to represent objects.</li> <li>• Uses various construction materials, e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces</li> <li>• Uses tools for a purpose</li> </ul>

Reception/  
Range 6

### Physical Development

- Progress towards a more fluent style of moving, with developing control and grace.
- Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
- Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.
- Uses simple tools to effect changes to materials
- Handles tools, objects, construction and malleable materials safely and with increasing control and intention

### Expressive Arts and Design

- Explore, use and refine a variety of artistic effects to express their ideas and feelings.
- Return to and build on their previous learning, refining ideas and developing their ability to represent them.
- Create collaboratively, sharing ideas, resources and skills.
- Uses their increasing knowledge and understanding of tools and materials to explore their interests and enquiries and develop their thinking
- Develops their own ideas through experimentation with diverse materials, e.g. light, projected image, loose parts, watercolours, powder paint, to express and communicate their discoveries and understanding.

ELG	Physical Development	Fine Motor Skills	<ul style="list-style-type: none"><li>• Use a range of small tools, including scissors, paintbrushes and cutlery.</li></ul>
	Expressive Arts and Design	Creating with Materials	<ul style="list-style-type: none"><li>• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li><li>• Share their creations, explaining the process they have used.</li></ul>