Key Stage 2
YEAR 5 DESIGN AND TECHNOLOGY

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<tr><th>National Curriculum
KS2 Programme of Study</th><th colspan="2">Chris Quigley Essential Skills
Milestone 3</th></tr>
<tr><td rowspan="4">Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts for example, the home, school, leisure, culture, enterprise, industry and the wider environment.

When designing and making, pupils should be taught to:

Design
• use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, 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 and ingredients, according to their functional properties and aesthetic qualities

Evaluate
• investigate and analyse a range of existing products</td><td>1. To master practical skills
<u>Food</u></td><td>• Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).
• Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.
• Demonstrate a range of baking and cooking techniques.
• Create and refine recipes, including ingredients, methods, cooking times and temperatures.</td></tr>
<tr><td>1. To master practical skills
<u>Textiles</u></td><td>• Create objects (such as a cushion) that employ a seam allowance.
• Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).
• Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).</td></tr>
<tr><td>1. To master practical skills
<u>Computing</u></td><td>• Write code to control and monitor models or products.</td></tr>
<tr><td>1. To master practical skills
<u>Construction</u></td><td>• Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).</td></tr>
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evaluate their ideas and products against their own design criteria and consider the views of others to improve work
understand how key events and individuals in D+T have helped shape the world

Technical knowledge

apply their understanding 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 example, series circuits incorporating switches, bulbs, buzzers and motors]
apply their understanding of computing to program, monitor and control their products.

Cooking and nutrition
As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

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.

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<td>1. To master practical skills
<u>Mechanics</u></td>
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Convert rotary motion to linear using cams.
Use innovative combinations of electronics (or computing) and mechanics in product designs.

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<td>2. To design, make, evaluate and improve</td>
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Design with the user in mind, motivated by the service a product will offer (rather than for profit).
Make products through stages of prototypes, making continual refinements.
Ensure products have a high quality finish, using art skills where appropriate.
Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.

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<td>3. To take inspiration from design throughout history</td>
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Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.
Create innovative designs that improve upon existing products.
Evaluate the design of products so as to suggest improvements to the user experience.

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