

East Ayton



Primary  
School

## **Traditional Values, Modern Vision**

### **Design and Technology Policy**

Reviewed: December 2023

Next review due: December 2025



# East Ayton Primary School



## Design and Technology

### **Rationale**

At East Ayton Primary School, we believe that design and technology helps to prepare children for the ongoing innovations and developments in our world. Children are encouraged to become problem solvers, combining practical skills with a design process to solve real problems. Our intent at East Ayton Primary School in design and technology is to equip students with the necessary skills, knowledge and understanding to use creativity and imagination to design, make and evaluate innovative products. It aims to create a practical and relevant curriculum that fosters innovation and problem-solving skills while embedding technological skills and empowering students to become active agents of change in the world around them. We focus on key concepts and skills using textiles, mechanisms, electrical systems, structures and nutrition and food.

### **Aims**

- To enable pupils to develop as confident, independent learners.
- To enable pupils to develop imaginative thinking and learn to talk about what they like and dislike when designing and making.
- To enable pupils select appropriate tools and techniques for making a product, whilst following safe procedures.
- To further children's enjoyment, satisfaction and purpose in design and making.
- To teach children to understand and apply the principles of nutrition and learn how to cook.

### **Key Concepts**

Children will learn how to research, design, make and evaluate products. They will use technical knowledge to further their understanding.

Within DT, they will cover the following areas:

- Textiles
- Structures
- Mechanisms
- Electrical systems
- Food and nutrition

### **Skills Progression**

End of KS1 expectations and skills:

In Key Stage One, children will think of an idea, make a plan and design their product. They will produce detailed, labelled drawings or models of products based on design criteria. They will choose appropriate tools/ materials and suggest ways of manipulating them to achieve a desired effect. They will think of ideas and plan what to do next, based on their experience of working with materials and components. Children will investigate a range of existing products and say if they do what they are supposed to do.

They will explain how closely, finished products, meet their design criteria and say what they could do better in the future.

End of KS2 expectations and skills:

In Key Stage Two children will develop detailed criteria for designs for products aimed at particular individuals or groups, sharing ideas through cross-sectional and exploded diagrams, prototypes and pattern pieces. They will use more complex tools with increasing accuracy. Children will choose the best materials for a task, showing an understanding of their working characteristics. They will check work as it develops and modify their approach in the light of progress. They can explain the form and function of familiar existing products and demonstrate modifications made to a product, as a result of ongoing evaluation, by themselves and others.

### **Core Skills**

<b>KS1 National Curriculum Expectations</b>	<b>KS2 National Curriculum Expectations</b>
<p><b>Design</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• design purposeful, functional, appealing products for themselves and other users based on design criteria;</li> <li>• generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</li> </ul>	<p><b>Design</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• 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;</li> </ul> <p>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p>
<p><b>Make</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing];</li> <li>• select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</li> </ul>	<p><b>Make</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately;</li> <li>• 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.</li> </ul>
<p><b>Evaluate</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• explore and evaluate a range of existing products;</li> <li>• evaluate their ideas and products against design criteria.</li> </ul>	<p><b>Evaluate</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• investigate and analyse a range of existing products;</li> <li>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work;</li> <li>• understand how key events and individuals in design and technology have helped shape the world.</li> </ul>

<p><b>Technical Knowledge</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• build structures, exploring how they can be made stronger, stiffer and more stable;</li> <li>• explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul>	<p><b>Technical Knowledge</b></p> <ul style="list-style-type: none"> <li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures;</li> <li>• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages];</li> <li>• understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors];</li> <li>• apply their understanding of computing to program, monitor and control their products.</li> </ul>
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<p><b>Cooking and Nutrition</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• use the basic principles of a healthy and varied diet to prepare dishes;</li> <li>• understand where food comes from.</li> </ul>	<p><b>Cooking and Nutrition</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• understand and apply the principles of a healthy and varied diet;</li> <li>• prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques;</li> <li>• understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>
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**Implementation**

Our D&T curriculum is progressive, with knowledge and skills building upon each other as pupils progress through the key stages. The lessons are sequenced logically to reinforce prior learning and new concepts, and we ensure there is plenty of opportunity for pupils to develop their knowledge and skills through practical activities. We also give opportunities for pupils to engage in real-life problem-solving and focus on the process of design, reflection and evaluation throughout.

We actively encourage pupils to use a range of materials, tools and equipment to create high-quality products that meet the requirements of the design brief. Our curriculum also includes opportunities for pupils to learn about the cultural, historical or environmental context of their designs.

Our teachers ensure differentiation in their teaching to meet the needs of all pupils, including those with special needs or disabilities, and they provide ample opportunities for pupils to develop their independence and critical thinking through D&T projects.

Our lessons follow the structure of research, design, make and evaluate. This structure is followed throughout the school. Children have opportunities to explore using textiles, mechanisms, structures, electrical systems and food.

**Impact**

Our D&T curriculum has a positive impact on our pupils, enabling them to become creative and experimental individuals with the capacity to generate varied and imaginative ideas. Our pupils develop a deep understanding of the design process and how to evaluate their work effectively, thereby

strengthening their decision-making skills. They develop valuable skills in mathematical thinking and problem-solving, as well as technical proficiency in using a range of tools and equipment. Our curriculum also supports our pupils' self-esteem, confidence and well-being, enabling them to take pride in their achievements and contribute positively to society in a range of contexts.