

# Characteristics: We are Designers!



Design Technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

At Orchard, we are Technologists. We have the ability to...

- design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values
- apply our knowledge of maths, science, engineering, computing, art & design to design and technology
- make prototypes and products for a wide range of users
- critique, evaluate and test our own ideas and products and the work of others
- take risks, become more resourceful, innovative, enterprising and capable young citizens
- evaluate the past and the present design and technology and evaluate its impact on daily life and the wider world
- understand and apply the principles of nutrition and learn how to cook

Learning Opportunities in Key Stage 1	Learning Opportunities in Key Stage 2
<p>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, such as the home and school, gardens and playgrounds, the local community, industry and the wider environment. When designing and making, pupils should be taught to:</p> <p><b>Design</b></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, mockups and, where appropriate, information and communication technology.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• select from and use a range of tools and equipment to perform practical tasks such as 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>Evaluate</b></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. <b>Technical knowledge</b></li> <li>• build structures, exploring how they can be made stronger, stiffer and more stable.</li> <li>• explore and use mechanisms, such as levers, sliders, wheels and axles, in their products.</li> </ul> <p><b>Cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>• use the basic principles of a healthy and varied diet to prepare dishes.</li> </ul>	<p>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, such as the home, school, leisure, culture, enterprise, industry and the wider environment. When designing and making, pupils should be taught to:</p> <p><b>Design</b></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> <li>• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>• select from and use a wider range of tools and equipment to perform practical tasks, such as 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> <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> <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, such as gears,</li> </ul>