



Design and Technology Rationale

Design and 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. National Curriculum 2013.

At Lothersdale Primary School, we provide children with the opportunities to apply their creativity and their imagination to design and create products.

Intent

- At Lothersdale School, Design and Technology is an inspiring, rigorous and practical subject which is taught in carefully planned units of work through deliberate practice. This improves children's fluency which in turn leads to mastery of Design and Technology and an alteration in LTM.
- Children are provided with the knowledge needed to enable them to develop ideas from a plan, to make the product specified in such, and when complete, to evaluate the finished product.
- We ensure that the design and technology curriculum builds on children's knowledge of a range of materials they have worked with, learning how they can be manipulated to create useful products for a stated purpose
- Children are given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovative practitioners.
- We provide children with an understanding of the technologically developing world we live in.

Implementation

- Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in an iterative process of designing and making.
- Our rolling programmes are carefully planned to demonstrate progression in knowledge within classes and from one class to the next.

Impact: to be reviewed at the end of each year

Substantive and disciplinary knowledge in Design and Technology.

Substantive knowledge

This is based on the knowledge of the four key elements of the process of design (design, make, evaluate and technical knowledge). All four elements will be taught in all year groups and are detailed below:

Design	Know how to design a product that is purposeful, functional and appealing to the specified audience.
Make	Know how to cut, join and finish a range of increasingly complex materials, including paper, fabric, wood and electrical components.
Evaluate	Know how to investigate, evaluate and analyse a range of existing products and their own designs in line with a specified design criteria.
Technical knowledge	Know how to apply their developing knowledge of specific materials to meet the criteria specified in the three stages above

Disciplinary knowledge

This is the process by which children are able to use their substantive knowledge of products and materials around them to make links between and across different areas of the curriculum. Using the knowledge they are taught in Design and Technology, children will be able to explain how and why products have changed over time and will comment on how they might be further improved in the future; their knowledge and understanding will be used to suggest how existing products may be improved with the advances in technology. This will show they have the cultural capital to become global citizens in an ever changing and technologically advancing world.

Creativity in Design and Technology

“There is no doubt that creativity is the most important human resource of all. Without creativity, there would be no progress, and we would be forever repeating the same patterns.” **Edward de Bono**

“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.” **National**

Curriculum, 2014

At each stage of a Design and Technology project, be it the design phase, the making phase, where additions or alterations are made to their original plan or the evaluation phase upon completion, there are opportunities for children to demonstrate their creativity as they strive for improvement in their work. There is a wealth of opportunity for cross-curricular learning, links being made with science (automaton), history (Tudor Rose pin cushion) and geography (solar power) as appropriate.

British Values

At Lothersdale School, Design and Technology develops children's understanding of British Values and develops their understanding of how to express themselves in a respectful way. Learning the importance of following the rules for using tools and equipment safely (substantive knowledge), to the opportunities they are given to explore their individual liberty through the design process in a project, children will understand how British values are interwoven through the Design and Technology curriculum.

Assessment in Design and Technology

Children will be assessed prior to a unit of Design and Technology, and this will be the starting point, first addressing any misconceptions that arose. The prior knowledge assessment allows children the opportunity to demonstrate connected knowledge they have in their long term memory. They will be assessed at regular intervals after the end of a unit, to recall this knowledge and to ensure that the knowledge has been firmly embedded in their long term memory. In addition to this, there will be planned opportunities for recaps throughout the unit to ensure knowledge is retained.

Reviewed October 2022 - CF