

Design and Technology at Bishops'

The Vision (or intent...)

In line with part of our school motto which is to *learn deeply* we believe design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, we aim for our pupils 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. We plan for them to acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Through exciting projects, pupils will learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they will develop a critical understanding of its impact on daily life and the wider world. We aim for high-quality design and technology education to make an essential contribution to the creativity, culture, wealth and well-being of the nation.



'A curriculum for the 21st century will reflect an understanding and acknowledgement of the changing nature of young people as learners and the challenges and demands that will continue to shape their learning in the future. Young people will need a wide and adaptive set of skills to meet the changing expectations of society and to contribute to the creation of a more productive, sustainable and just society.' (ACARA, University of Melbourne. 2009)

Through design and technology children develop skills and knowledge that will support and encourage them towards global citizenship. These skills include appreciating the contribution of other cultures by understanding what innovations from around the world have improved our lives; being aware of finite resources and a sense of responsibility for the environment by creating models using repurposed materials and making choices about our designs and recognising the consequences these have on our end 'product'. When cooking, the children also have the chance to understand the interdependence we have with the world via trade between different countries and the importance of fair trade.

How Design and Technology is Taught (or implemented)

Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in a process of designing and making. The children design and create products that consider function, purpose, and which are relevant to a range of sectors (for example, the home, school, leisure, culture, enterprise, industry and the wider environment).

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Love as God Loves You and Let Your Light Shine!'*

Early Years Foundation Stage

During the EYFS pupils explore and use a variety of media and materials through a combination of child initiated and adult directed activities. They have the opportunities to learn to:

- Use different media and materials to express their own ideas
- Use what they have learnt about media and materials in original ways, thinking about form, function and purpose
- Make plans and construct with a purpose in mind using a variety of resources
- Develop skills to use simple tools and techniques appropriately, effectively and safely
- Select appropriate resources for a product and adapt their work where necessary



FS pupils using all kinds of fixings to make their model.

Key Stage 1 and 2

When designing and making, the children are 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 diagrams, prototypes, pattern pieces and computer-aided design.

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Make

- Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing, as well as chopping and slicing) accurately.
- Select from and use a wider range of materials, ingredients and components, including construction materials, textiles and ingredients, according to their functional properties, aesthetic qualities and, where appropriate, taste.

Evaluate

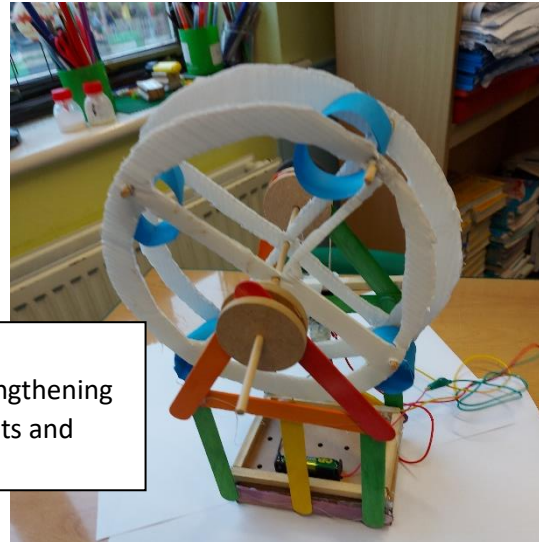
- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in design and technology have helped shape the world.

Develop, Use and Apply Technical Knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

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- Understand and use mechanical systems in their products.
- Understand and use electrical systems in their products.
- Apply their understanding of computing to program, monitor and control their products



A KS2 Funfair DT project incorporating design, strengthening structures, electrical circuits and pulleys

Key skills and key

knowledge for D and T have been mapped

across the school to ensure progression between year groups. The context for the children's work in Design and Technology is also well considered and children learn about real life structures and the purpose of specific examples, as well as developing their skills throughout the programme of study.

What is the *Impact* of all this?

Our cross-curricular approach enables the children to learn design and technology in a range of contexts - from designing earthquake resistant buildings to making fully functioning miniature fairground rides. Children develop the skills to design and create objects that fulfill a purpose or solve a problem from a 'real-world' context.

What else is special about design and technology at The Bishops'?

We are always looking for opportunities for external providers to visit and share their knowledge with the children. This includes a visit from E2V – a team responsible for designing parts for the Mars Rover and other satellites; and the Lego Man who helped children to design an eco-friendly town.

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Students from E2V, an advanced science design company in Chelmsford, test children's designs for holding a camera in space without being affected by the shaking which accompanies entry into or out of the atmospheres of planets. (Yr 5)



Creating homes for an eco-friendly town in Year 4.

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