



"Design creates culture. Culture shapes values. Values determine the future."

-- Robert L. Peters, designer and author

The Importance of Design and Technology

Design and Technology is an inspiring, rigorous and practical subject. Design and Technology encourages children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. At Theale, we encourage children to use their creativity and imagination, 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 aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.

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.

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

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, 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.

Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products
- 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

At Theale Primary the children will:

- Be inspired, challenged and engaged by the subject, appreciating the potential for enrichment within their daily lives, their future and potential career opportunities.
- Strive to achieve their best and learn processes to enable them to improve the standard of their work as they progress through the school. Their work will be valued and their effort recognised in high quality displays in school and elsewhere.
- Develop and improve their knowledge of design and technology. Equipping them with the skills to create and invent their own art work and being able to express their ideas, imagination and feelings.
- Have confidence in their own ability and understanding and feel secure in experimenting, taking risks and pushing their ideas forward.
- Learn about great designers and begin to understand the cultural, historical and economic impact of design and technology on our nation.
- Develop their critical and questioning skills in interpreting and critiquing products. They will learn how to articulate and communicate ideas and opinions about their own work and that of others in positive and constructive ways.
- Develop a cooperative attitude when working in a group, respecting and valuing the opinions of others.
- Use creative thinking to solve problems and develop their own ideas.
- Enjoy and appreciate seeing their own work and that of others on display, both in school and elsewhere.

Teaching and learning style

The school uses a variety of teaching and learning styles in design and technology lessons. The principal aim is to develop children's knowledge, skills and understanding in design and technology. Teachers ensure that the children apply their knowledge and understanding when developing ideas, planning and making products and then evaluating them. We do this through a mixture of whole-class teaching and individual/group activities. Within lessons, we give children the opportunity both to work on their own and to collaborate with others, listening to other children's ideas and treating these with respect. Children critically evaluate existing products, their own work and that of others. They have the opportunity to use a wide range of materials and resources, including ICT.

Differentiation

In all classes there are children of differing ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies:

- setting common tasks that are open-ended and can have a variety of results;
- setting tasks of increasing difficulty where not all children complete all tasks;
- grouping children by ability and setting different tasks for each group;
- providing a range of challenges through the provision of different resources;
- using additional adults to support the work of individual children or small groups.

Planning

Planning for KS1 and KS2 is organised in line with the frame work for Design and Technology as set out by the National Curriculum 2014. Planning in Foundation Stage is based on the Early Outcomes documents for the EYFS.

We plan the activities in design and technology so that they build upon the prior learning of the children. We give children of all abilities the opportunity to develop their skills, knowledge and understanding and we also build planned progression into the scheme of work, so that the children are increasingly challenged as they move through the school.

Time Allocation

In EYFS and Year 1 Design and Technology is taught as a class activity for 2 hours every 3 weeks, on a half termly cycle, alternating with Art and Design.

In Year 2 - 6 Design and Technology is taught as a class activity for 2 hours every other week, on a half termly cycle, alternating with Art and Design.

Further opportunities for design and technological learning will also present themselves within other subject areas including the Science, Computing and Art curriculum adding approximately 3 hours /term to DT teaching.

Children 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.

Gifted and Talented Pupils

Theale Primary School strives to offer an extended programme to children with exceptional ability and enthusiasm in key areas of the curriculum. For gifted Design Technology students there are opportunities to take part in additional Art and Design / or ICT sessions as well as a choice of after school clubs.

Assessment

Each pupil's progress and achievement will be assessed and reported to parents in an annual report. Pupils will use a sketchbook to record ideas, drawings and designs. Feedback will be given and advice on ways to improve their work. Children learn to evaluate their own and each other's work against learning objectives and provide positive criticism. Children's work is assessed by the teacher whilst observing them during lessons, by giving comments in sketchbooks, by evaluating the finished product and through discussion of pupil opinions/choices. Photographic evidence will be kept of samples of work.

Information and Communication Technology

ICT is used to support Design and Technology teaching when appropriate. Children use appropriate apps and related software in their own work, and the internet for research purposes. Visual information can be collected using ipads and each classroom has a Smart board to provide instant access to a wide range of images and source material.

Health and Safety

At both key stages pupils will be taught:

- about hazards, risks and risk control
- to recognise hazards, assess consequent risks and take steps to control the risk to themselves and others
- to use information to assess the immediate and cumulative risks
- to manage their environment to ensure the health and safety of themselves and others
- to explain the steps they take to control risks.

The Role of the Design and Technology Leader

A subject specialist is allocated the role of subject leader to support class teachers and to help improve the overall quality and continuity of DT teaching in the school.

The leader is responsible for:

- teaching the units of work
- monitoring progress
- providing advice about Design and Technology
- keeping up to date through reading and attending relevant courses and passing this information/advice to other staff
- manage the ordering and maintaining all DT materials and equipment used in school in consultation with other members of staff
- inspire an enthusiasm for the subject
- ensure continuity of progression in work across the key stage and coverage of the National Curriculum

Resources

We have a range of resources to support Design and Technology across the school (kept in the SPEC room, Science, Maths and ICT spaces.)

Equal Opportunities and Special Needs

Every pupil will be given equal opportunity to follow the National Curriculum or Foundation Stage Curriculum, irrespective of their ethnic or linguistic background, gender, disability or religious beliefs. Children with Special Education Needs will have full access to the Design and Technology curriculum, which will be modified to best meet their needs.

Monitoring

The monitoring of Design and Technology will take the form of classroom observation, monitoring of planning, work scrutiny, interview with children, learning walks and monitoring of displays. The subject leader, working with the head teacher is responsible for the monitoring of Design and Technology. The headteacher will report to governors through a termly report.

At the end of each Key Stage, pupils are expected to know, apply and understand the matters, skills and processes in the relevant programme of study.