

The art challenges technology and the technology inspires art.

John Lasseter.

Intent

At Leavening, our aim for Design Technology is to follow the national curriculum to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

What Design Technology looks like at Leavening

Implementation

At Leavening C P School, we believe all children are entitled to a broad and enriched curriculum in their education, and Design Technology plays a vital part in this. Design Technology develops children's skills and knowledge in design, structures, mechanisms, electrical control and a range of materials, including food. It encourages children's creativity and encourages them to think about important issues.

Through teaching a range of high quality Design Technology lessons, our children have the opportunity to improve their skills, knowledge and understanding of designing and making functional products. At Leavening, we believe it is essential to nurture creativity and innovation through design, and explore the designed and made world in which we all live and work.

Design Technology at Leavening School is taught as a block of lessons each half term, linking to a particular topic, so that children can achieve depth in their learning and can really explore specific objectives in more detail. Teachers have identified the key knowledge and skills required in this subject and have ensured their long term plans demonstrate progression across topics, throughout each year group from nursery all the way through to year 6.

The Early Years Foundation Stage (EYFS) in nursery and reception follows the 'Development Matters in the EYFS' guidance which aims for all children to have skills in: Physical Development: Movement and Handling', 'Literacy: Writing', 'Understanding the World', 'Expressive Arts and Design: Exploring and Using Media and Materials' and 'Expressive Arts and Design: Being Imaginative' by the end of reception.

While children are in EYFS, they have opportunities to investigate and use a variety of media and materials through a combination of child initiated and adult directed activities. They learn to:

- Explore the textures, movement, feel and look of different media and materials
- Respond to a range of media and materials, develop their understanding of them in order to manipulate and create different effects.
- Use different media and materials to express their own ideas
- Explore colour and use for a particular purpose
- Develop skills to use simple tools and techniques competently and appropriately
- Select appropriate media and techniques and adapt their work where necessary

In Key Stage 1, when designing and making, pupils should be taught to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

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 [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

In Key Stage 2, when designing and making, pupils should be 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 and exploded 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 [for example, gears, pulleys, cams, levers and linkages]
- 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.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Key stage 2

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

In the curriculum that we provide at Leavening, we try to include as many cross curricular links with other subjects as possible. The outcomes that we want our children to achieve in Design Technology are explicitly planned for, with strong links to various subjects including English, Art, History and Mathematics lessons. The creativity of Design Technology helps us to teach subjects with cross curricular links, in a fun and engaging way, which makes the skills easier to digest and more understandable for younger children.

Teachers regularly monitor the outcomes of children's work, to ensure that they reflect a strong understanding of the identified key skills they have been taught, in that particular series of lessons.

Wider Curriculum

- Lessons in Design Technology that we teach, provide cross curricular links with many other subjects we teach in school including: English, Art, History and Mathematics lessons. The key vocabulary and skills linked to various tools and materials are revised with children where appropriate.

Funky Fridays

- Design Technology is taught in all classes throughout the week where appropriate, but children always look forward to experiencing these lessons on a Friday. Staff use the medium term plans to ensure children have opportunities to learn a wide range of skills through high quality lessons each week.

Displays

- Children's work is always displayed in classrooms and around school so that parents, new visitors and children in different year groups can appreciate the abilities our talented designers have.

How we entwine Design Technology with our Leavening school values underpinning our purpose of 'Together We Can'

Care, share and belong

Children are encouraged to work together on various projects because collaborative work in Design Technology develops mutual respect for the differing opinions, beliefs and abilities of others.

Children learn to show determination and tolerance in difficult situations and towards others- two of the key British Values. Experiences like these, teach children how to show respect towards others, even when they have differing views about a certain product for example.

Look and learn beyond the classroom

Staff encourage children to ask questions during visits and when special guests visit our school such as civil engineers who design and build bridges, and chefs who make incredibly tasty dishes, so they gain more knowledge in an inspiring way.

In Forest Schools, children are encouraged to design and create various sculptures, linked to topic work, using natural materials that they can find outside. For example, some children were asked to recreate 'The Three Little Pig's' houses, out of straw, sticks and bricks.

Aim high so everyone can shine

Children are inspired to be the best designers and technologists they can possibly be. They are provided with a range of tools and materials, to experiment with when they are cooking or making electrical circuits for example.

Children are given time to produce high quality pieces of work, that they can keep evaluating and improving, until they are happy and confident with their design work.

Learn with passion

Children are encouraged to cultivate a growth mind set and resilience in their attitude towards all areas of learning in Design Technology. In class, they are praised for asking questions and supporting others in order to become more independent learners. Children are reminded that they can discuss ideas with their peers, as a way of helping each other and improving their work further.

How we know our Design Technology curriculum is successful

Impact

- Children will develop a range of creative, technical and practical skills throughout school, which will prepare them to be life-long designers and technologists in our increasingly technological world.
- Children will retain prior-learning and openly make connections when they are designing and making high-quality products for a range of audiences, and be able to evaluate and test their own and other children's products.
- Children will become progressively more analytical of their own work and be able to share their ideas with others, so they can improve their skills further.
- Children will also produce a product with a great quality finish, according to the age and ability of the child.
- Children will gain the confidence to cook various healthy dishes and understand how to put their knowledge about nutrition into practice.