Design Technology Curriculum Overview

Design and technology at Bradley Green is an inspiring and practical subject. Using creativity and imagination, our 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 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. They learn to work individually and in teams, practising the art of discussion, compromise and leadership. 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.

Our high-quality design and technology curriculum makes an essential contribution to the creativity, culture, wealth and well-being of our children at Bradley Green.

"There's no learning without trying lots of ideas and failing lots of times" Sir Jonathan Ive

Our curriculum intent

Our Design and technology curriculum will enable pupils to:

- ❑ use research and develop design criteria to inform the design of products that are fit for purpose and 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
- ❑ select from and use a wider range of tools and equipment to perform practical tasks accurately
- ❑ 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
- ❑ apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- ❑ understand and use mechanical and electrical systems in their products
- ❑ apply their understanding of computing to program, monitor and control their products.
- ❑ 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.

Our curriculum approach - Knowing and remembering more

We believe that the Design and technology curriculum we offer at Bradley Green is exceptional as it is a really exciting, rich and forward-thinking curriculum. We have a detailed and well-sequenced curriculum with built in retrieval activities to enable the children to know and remember more. Our curriculum challenges misconceptions and makes links to previous and future learning. Our curriculum enables children to understand how DT connects us with our past, helps us embrace the present, and empowers us to shape our future. By exploring why it is relevant to all our lives, we aim to make certain that pupils feel entitled to develop their creativity, and understand their place in the world as creative, confident beings.

Our curriculum is designed so that key concepts are revisited within and across year groups so that children can relate information and ideas to each other and make sense of them.

Our areas of focus are:

- Mechanisms
- Structures
- Food
- Textiles
- Electrical systems

Each half term we alternate Design Technology with our Art curriculum. Our lessons have been designed by our subject leader, Miss Begum alongside Mrs Goodwin who have taken the best from STEM resources and the DT Association to create our own bespoke curriculum which is ever evolving based on monitoring and feedback. Our curriculum involves using the outdoors and it develops children's cultural capital by enabling them to meet a wide variety of designers and crafts-people from around the world. The curriculum is more than just a series of technical skills, our holistic curriculum nurtures creative thinking skills.

Careful thought has been placed upon the sequencing of content so that pupils build upon prior learning and make connections. The curriculum has been specifically designed in this way to allow for a greater number of opportunities for children to work at a greater depth, deepening understanding, promoting critical thinkers and ensuring pupils know and remember more. The curriculum is a progressive model so that by learning the content pupils will make good progress as they move through the school from Early Years to Year 6.

We aim to deliver a thorough knowledge of which tools, equipment and materials to use in order to make products. This includes use of tools in the outdoor environment such as knives for witling, secateurs and loppers for cutting. Children are taught how to manage risks exceptionally well to manufacture products both safely and hygienically. They are given opportunity to design and make products independently and collaboratively, and are taught how to use time efficiently in order to work constructively and productively with others.

We strive to promote a passion for DT through a range of exciting and provide knowledge of up-to date technological innovations in materials, products and systems. Design and technology challenges the children to develop this knowledge and apply it practically to the design and creation of a variety of projects. From culinary preparations to electrical systems, pupils will design and make products using creativity and imagination.

Through the evaluation stage, they will be encouraged to and provided with the skills needed to 'peer critique' their own and others work. It helps pupils to develop resilience, perseverance and supports pupils to improve their work further.

Developing expertise

The subject leader keeps up to date with the latest information and research by being part of work group within in the trust.

We are members of the DT Association, and they offer online CPD to all staff which is relevant to the scheme to develop their confidence in teaching.

Unit plans have been created by the subject leader to support the teachers in delivering high quality lessons.

Lesson structure

Each lesson begins with some retrieval of key knowledge and vocabulary from previous lessons and units from the current and previous year groups. We believe that it is vital that children know and remember more. *"Building our long-term memory and our level of fluency in recall. More fluent recall allows more space in working memory to attend to applying the knowledge to explain deeper questions."*

The learning intentions will be shared with the children. *"If we don't know where we are going, we'll never arrive!"*

Before the new learning takes place, staff will activate some prior knowledge, which links to the new learning of the lesson, through a retrieval type task or a discussion. *"Prior learning needs to be active in our working memory if we're going to add layers of complexity to it. New information is only stored if we link it to the knowledge we already have."*

The main part of the lesson may contain an 'I do', 'we do' or 'you do' element depending on the content and where they are up to in the unit. This is where the teacher will model, children will work together and/or with the teacher so that they are supported and then children will complete a task independently.

Throughout the lesson, staff will use a range of questions to assess the children's understanding and guide the lesson appropriately, tailoring the lesson for individuals if required.

At the end of the lesson, staff will ask carefully targeted questions to assess children's understanding. These questions are open questions that relate to understanding rather than just remembering. This assessment is then used to decide a starting point for the next lesson in the sequence.

Any assessments made during the lesson regarding children's understanding as individuals or as a whole are noted on the bottom of the unit plan.

Assessment

Teachers assess at the end of each lesson and record on unit plans. Teachers identify children who have exceeded the expectation or who need more practice and decide the starting point for the next lesson.

The assessment information is also passed on to the subject leader at the end of a unit so that the subject leader can look for patterns across this school. The teacher's feedback on the teaching of the unit is really important for the subject leader when they come to revise the unit plans for the following year.

SEND

Our classrooms are inclusive classrooms. They are places where learning opportunities are tailored to meet the needs of all children; in lessons where adults have thought about the ways in which learning is purposeful, meaningful and relevant to the current needs of every child. These are classrooms where lessons are pitched so that every child experiences success and makes progress in their learning.

DT in EYFS

Children are given opportunities to design and create in focused groups and in continuous provision. In EYFS, the focus for DT is around structures. Children select their own resources and decide how they will use them. Food technology is a focus in EYFS and children use tools to develop their skills for example mashing and chopping. In Forest School sessions, children are given opportunities to use hammers, palm drills, trowels, and forks under supervision. They children are made aware of staying safe when using tools and know to remain in their tool bubbles. We are keen to develop children's independence and risk taking allowing them to take the lead in their own learning.

Personal development

Our aim is for all pupils to act as responsible designers and makers, working ethically, using finite materials carefully and working safely. The DT curriculum allows for children to pose questions, carry out thorough research and show initiative when taking into consideration the users' needs and requirements. Every opportunity is utilised through the subject to allow children to apply both literacy and mathematical basic skills as well as design and technology skills.

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Our lessons are carefully planned to allow all children to develop the 10 life skills we work on at Bradley Green: Managing distractions, noticing, perseverance, questioning, planning, reasoning, collaboration, listening, empathy, and organisation.