



**Exploring together  
Succeeding together**

# **Design and Technology Policy**

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## Intent

At Hill Avenue Academy our aim is to educate all children to the highest levels of academic and personal achievement developing confident, happy and compassionate members of society through our bespoke, high quality Design and Technology curriculum which is built upon, Exploring together; Succeeding together, in conjunction with our school values: Happiness, Respect, Teamwork, Achieve.

The Design and Technology curriculum is supported and underpinned by our Learning Behaviours: Resilience, Curiosity, Collaboration, Reflection and Metacognition. They are embedded within our Design and Technology curriculum delivery to enable and empower the children to become independent learners who are self-motivated and want to continuously learn and grow, now and in the future.

At Hill Avenue, our Design and Technology curriculum meets the requirements of the National Curriculum as a minimum. It is specifically and rigorously designed to be holistic and relevant to the children, coherent and progressive offering rich, challenging opportunities for the children to truly experience Design and Technology. They gain a deep knowledge and understanding through a practical process-driven approach including research, experimentation, specific focused skill development tasks, designing, making and evaluating.

Design and Technology is an inspiring, rigorous and practical subject and at Hill Avenue we encourage children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. At Hill Avenue, we also 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 a variety of design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.

We empower our children to be inquisitive designers and engineers, who are curious about the world around them. The children are encouraged to explore ideas and gain insight into the complexity and significance of design and technology and its importance in the future.

In Design and Technology at Hill Avenue we aim to:

- 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 and 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. Children will design and make a range of products.
- A good quality finish will be expected in all.

Through exploration children will have the opportunities to:

- 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, diagrams, prototypes, pattern pieces and computer-aided design.
- 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.
- 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.
- 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
- Understand some of the ways that food can be processed and the effect of different cooking practices (including baking).

At Hill Avenue we promote British Values through Design and Technology, teaching children to explore and learn to work collaboratively and share their ideas when designing and making products. For example, when working on a design brief, children are encouraged to listen to and respect the ideas and opinions of others, and to work together to achieve a shared vision. Children are also taught about the importance of following rules and regulations when designing and making products. For example, when working with tools and equipment, children are taught about the importance of safety and the need to follow specific instructions. Hill Avenue encourages children to explore their own interests and ideas, and to express themselves creatively in different ways. For example, when designing and making a product, children are encouraged to use their own unique personality and individuality in the design process. Our Design and Technology Curriculum teaches children about the diverse cultures and traditions that have shaped the world of design and technology. For example, when designing and making a product for a cultural celebration, children will learn about the traditions and beliefs associated with that celebration.

### **Implementation**

At Hill Avenue we teach Design and Technology as a discreet subject with an aim of preserving its unique nature. We believe this allows children to gain a strong and clear understanding and to make purposeful connections to other subject areas.

We place an emphasis on both substantive and disciplinary knowledge within our Design and Technology Curriculum so that the children can 'know more and remember more' alongside understanding what it is that designers actually do in order to preserve the discipline of Design and Technology.

Learning is underpinned through the following disciplinary concepts ....

Design	Make	Evaluate	Mechanisms	Electrical systems
Technical Vocabulary	Nutrition and Cooking	Textiles	Structures	

The children develop and build on their substantive knowledge through the weaving, revisiting and progression of the second order concepts of.....

Purpose	Design-decisions	Innovation	Seasonality	Disassembly
Functionality	User-awareness	Authenticity	Computer Aided Design	

Our Design and Technology curriculum is consciously taught in half-termly blocks of two lessons per week. Design and Technology is delivered this way to maximise learning time and secure consistently high outcomes. This meets the needs of the children by supporting their learning and understanding, development of skills as well as reducing cognitive load. It also enables children to acquire depth in their learning by revisiting and building on existing knowledge.

Key concepts, knowledge and skills are explicit within each Medium-Term Plan or unit of work and have been carefully mapped out and planned to ensure progression across units of learning, across years and as children progress through key stages.

At Hill Avenue, Design and Technology is a perfect example of head and hands working together. Children are required to think about specific purposes and users for their products as the curriculum requires much more than simply following instructions to make something. Children have to think, decide and plan, as well as create and evaluate. At Hill Avenue, we provide opportunities for children to develop their capability. By combining their design and making skills with knowledge and understanding they learn to create quality products.

The skills learned within the Design and Technology curriculum also helps with learning across the entire curriculum. Knowledge about the properties of materials helps in science and the practice of measuring accurately helps in maths. These skills help in IT through the children's use of computer control and, naturally, in art and design.

When you stop and think about it, virtually everything around us has been designed and engineered in some way. Throughout the Design and Technology curriculum we make purposeful links with a variety of industries, highlighting career paths, adding valuable context to learning and ensuring future of the UK economic growth.

### Early Years Foundation Stage

Design and Technology is taught through expressive arts and design, understanding of the world, physical development and personal, social and emotional development.

Within Nursery, children make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings. They explore different materials and ideas freely, to develop their ideas about how to use them, what to make and explore how things work. Children create closed shapes with continuous lines and begin to use these shapes to represent objects. Children will develop gross and fine motor skills. Using large-muscle movements children will experience waving flags and streamers, painting and making marks as well as using one-handed

tools and equipment, for example, making snips in paper with scissors. Children will be encouraged to choose the right resources to carry out their own plan and select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.

As children move into Reception they will explore, use and refine a variety of artistic effects to express their ideas and feelings. Children will return to and build on their previous learning, refining ideas and developing their ability to represent them. They work collaboratively, sharing ideas, resources and skills. Children are taught and aware of keeping themselves safe, using and exploring a variety of materials, tools and techniques, while experimenting with colour, design, texture, form and function. Children will experience sharing their creations, explaining the process they have used.

As children further develop, they will progress towards a more fluent style of moving, with developing control and grace. They will develop their small motor skills so that they can use a range of tools competently, safely and confidently using their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. As children become more competent, they will be taught how to use a wider range of small tools, including scissors, paintbrushes and cutlery.

### Key Stage 1

In Key Stage 1 children begin to develop and learn about free standing structures through chair building, identifying strength, stiffness and stability through different shapes, folds and joining techniques. They will explore food through cutting and preparing fruit kebabs, moving to sandwiches and making informed decisions linked to World Exploration in History. Children will also develop their knowledge of mechanisms through moving books, using sliders and leavers linked to their English unit – The Smartest Giant in Town that is built upon in year 2 where children create Fire Engines, using wheels and axels linked to the History unit on the Great Fire of London. They also explore using templates and joining techniques within textiles to create a seasonal decoration.

### Key Stage 2

The children in Key Stage 2 continue to develop skills in building through creating shell structures and packages for protecting biscuits that further develops into researching and creating load bearing frames in bridge building linked with the History unit on Bridge North. Children's skills in food technology develop as children learn to mix and bake making savoury muffins and developing further in making bread, understanding the importance of kneading and proving. Celebrating culture and seasonality is a focus in Key Stage 2, where children use their knowledge of cooking during WW2 and bake their version of a Woolton pie. Children's knowledge of mechanisms progresses, designing and making greeting cards with leavers and linkages and using cams to create moving toys. Within Key Stage 2, children learn about electrical systems, applying their knowledge of electricity and circuits through creating electrical games and motor driven vehicles. Computer Aided Design is also introduced in key stage 2, through creating packaging and designing a tablet case.

When planning for teaching and learning we take into account the wide range of abilities of our children. Teachers set high expectations for all pupils. They will use appropriate assessment to set ambitious targets and plan challenging work for all groups, including:

- More able pupils
- Pupils with low prior attainment
- Pupils from disadvantaged backgrounds

- Pupils with SEN
- Pupils with English as an additional language (EAL)

Teachers ensure that pupils with SEN and/or disabilities can study Design and Technology and ensure that there are no barriers to every pupil achieving. Teachers plan differentiated learning opportunities to meet individual needs and put in place reasonable adjustments and scaffolds whilst ensuring access to a full and varied Design and Technology curriculum along with their peers.

Our planning ensures there are opportunities for children of all abilities to develop their knowledge and skills in each unit and planned progression has been built so that the children are increasingly challenged as they progress within a unit and across key stages.

### Assessment

Assessment steps are used by class teachers to determine children's understanding, subject knowledge and design and technology skill set in relation to the National Curriculum Expectations.

High quality planning progressively builds on knowledge, skills and understanding across year groups, and key stages. Learning is assessed by teachers in lessons through observations, questioning and in the moment marking and personalised feedback ensuring misconceptions are addressed promptly and effectively.

Where learning happens without a written outcome, ie visitors in school, visits, exploration, discussions, debate, evidence of this can be captured digitally and uploaded to a class file which is a personal secured online space.

Class teachers will make end of unit summary judgments about the learning of each child in relation to the National Curriculum expectations.

### Impact

Our Design and Technology curriculum is designed to excite and develop creative thinkers who are passionate, who want to share their expertise and have a true interest and real love of learning within this subject. We believe our rich Design and Technology curriculum will lead to quality outcomes, great learning and rapid rates of progress.

The Design and Technology subject leader will regularly monitor and review the teaching and learning of Design and Technology as well as reviews and feedback from SLT and Pupil voice. The learning journey of Design and Technology and outcomes will be monitored, identifying strengths and ways to grow to improve through feedback.

Our schemes of work reflect the content and challenge of the curriculum. Our aim is to offer a broad, balanced, rich and vibrant curriculum that provides challenging pathways to achievement for all learners and leads to excellent Design and Technology provision.

Our bespoke curriculum will be exciting and will inspire children to nurture a passion for Design and Technology. The quality of education will be evaluated to ensure that it enables children to achieve the highest standards with high quality learning outcomes and supports children in being confident, resilient, self-motivated independent learners with the skills to be a lifelong learner.

This policy also needs to be in line with other school policies and therefore should be read in conjunction with the following:

Teaching and Learning Policy

Marking and Feedback Policy

Assessment Policy

SEND Policy

Equal Opportunities Policy

Health and Safety Policy

Review

This policy will be reviewed annually by staff and Trust Directors/CEO.