

King's Hill Primary School



Design and Technology Policy

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King's Hill Primary School – Design/Technology

1. Curriculum Statement

Design and technology is an intricate part of our day-to-day lives and it is therefore important that our pupils, are taught how this subject is of great importance in our rapidly changing world. Here at Kings Hill, pupils are encouraged to think creatively in order to solve problems and/or make improvements to existing ideas and products. It is through these methods that they can make positive changes to their own and others' lives. The teaching of design and technology enables pupils to identify needs and opportunities, and to respond by developing ideas and eventually making products and systems.

Intent

Expressive Arts and Design (Creating with Materials – Early Learning Goal)

Children at the expected level will:

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.
- Use simple tools and techniques appropriately and effectively safely.

The **national curriculum** for design and technology aims 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 knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Implementation

Design and technology is taught from Early Years up to Year Six at King's Hill Primary School. In Early Years, the children experience a combination of adult led and child-initiated activities. They use different media and materials to express their own ideas. They plan and construct with a purpose in mind using a variety of resources. Children are encouraged to use what they know about different media and materials in original ways and are encouraged to explore and try new things.

As they progress into KS1 and KS2, the study of design and technology combines practical skills with an understanding of aesthetic, social and environmental issues, as well as of functions and industrial practices. This allows our pupils to reflect on and evaluate present and past design and technology, its uses and impacts. Design and technology gives the pupils the opportunity to work and think both as individuals and as part of a team, which helps them develop and learn while demonstrating our key values of the school.

The teaching of Design and Technology offers opportunities to support the social development of pupils in Kings Hill through the way we expect them to work with each other in lessons. Our

groupings allow pupils to work together and give them the chance to discuss their ideas and feelings about their own work and the work of others. Through their collaborative and co-operative work across a range of activities and experiences in design and technology, the pupils develop respect for the abilities of other pupils and a better understanding of themselves. They also develop a respect for the environment, for their own health and safety and for that of others. They develop their cultural awareness and understanding, and they learn to appreciate the value of differences and similarities. A variety of experiences teaches them to appreciate that all people are equally important, and that the needs of individuals are not the same as the needs of groups.

Impact

Design and technology gives young people the skills and abilities to engage positively with the designed and made world and to harness the benefits of technology. They learn how products and systems are designed and manufactured, how to be innovative and to make creative use of a variety of resources including digital technologies, to improve the world around them.

Here at Kings Hill, our objectives in the teaching of Design and Technology are:

- To give pupils the opportunity to take part in creative and practical activities
- To understand the importance of design and technology in the wider world
- To develop imaginative thinking in pupils and to enable them to talk about what they like and dislike when designing and making things
- To enable pupils to talk about how things work, and to draw and model their ideas
- To explore computing as a means of design
- To encourage pupils to be analytical and critical when they are considering and analysing products
- To encourage pupils to select appropriate materials, tools and techniques for making a product
- To follow safe procedures when using equipment
- To explore attitudes towards the made world and how we live and work within it;
- To develop an understanding of technological processes and products, their manufacture and their contribution to society;
- To foster enjoyment, satisfaction and purpose in designing and making things.

To achieve our aims we ensure that the planned activities our pupils undertake are challenging, motivating, relevant and enjoyable. We give pupils confidence in their work by providing continual support and encouragement. The pupils are extended in their work in a way that develops their expertise. We provide our pupils with the very best resources possible, while constantly reviewing this provision in the light of curriculum changes, development and budget constraints.

2. Teaching and Learning

At Kings Hill, we use a variety of teaching and learning styles in design and technology lessons. The principal aim is to develop pupils' knowledge, skills and understanding in design and technology. Teachers ensure that the pupils apply their knowledge and understanding when developing ideas, planning and making products, and evaluating them. We do this through a mixture of whole class teaching and individual or group activities. Within lessons, we give the pupils the opportunity to work on their own and to collaborate with others, listening to their peers ideas and treating these

with respect. Pupils 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 computing.

At Kings Hill, we enhance pupils' experiences and learning by utilising different opportunities. Whilst teaching the national curriculum, we also embed various experience to develop their skills in this curriculum area to prepare them for the real world. We also take advantage of any opportunities to visit our local community or engage with the wider community to see what is happening around us. Alongside this we provide exciting and engaging days and weeks to develop their thinking and practical skills whilst encouraging children to embed their vocabulary within design and technology.

In all classes, there are pupils of differing ability. Kings Hill recognises this fact and provides suitable learning opportunities for all pupils by matching the challenge of the task to the ability of the pupil. 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 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.
- Providing support where individual children have particular gifts or talents.

3. Assessment

Assessment for Learning:

Teachers assess pupils work in Design and Technology as they observe them during lessons. At the end of a unit of work, teachers make a judgment using the school's assessment materials.

Formative Assessment:

Ongoing assessment is a feature of each lesson. Observations and careful questioning enable teachers to adjust lessons and brief other adults in the class if necessary. The lesson structure of design and technology is designed to support this process and pupils' reflection on each task at the end of each lesson and allows for misconceptions to be addressed. At the end of each blocked unit of work, pupils complete a self-assessment on their finished product to further evidence learning. The outcome can help to ensure that any identified gaps in understanding, can be addressed.

Summative Assessment:

At the end of each unit of work teachers assess the pupil's finished product against the progression statements. Pupils are also encouraged to make judgements on how their work can be improved. Teachers then use this to plan future work and to make an annual assessment of progress for each pupil, as part of the annual report to parents. This information is passed on to the next teachers at the end of the year. Pupils will be reported as working 'at expectation', 'exceeding expectation' or 'below expectation' in relation to the National Curriculum.

Data analysis of the skill / progression statements enables teachers to identify any common areas of weakness so appropriate consolidation work can be done. They are also used alongside outcomes of work / performances, to inform the whole school tracking of attainment and progress of each pupil. The data also informs whole school and subject development priorities for the next school year.

4. Planning & Resources

Design and technology is often taught within other areas of the curriculum, to support and enhance the work done within the topics planned. Kings Hill uses 'Plan Bee' to deliver the requirements of the national curriculum for design and technology. While there are opportunities for pupils of all abilities to develop their skills and knowledge in each teaching unit, the progression planned into the scheme of work means that, the pupils are increasingly challenged as they move through the school.

Kings Hill sets out the teaching elements into six different areas, which are taught across the key stages:

- Food
- Textiles
- Materials
- Construction
- Electricals and Electronics
- Mechanics

Where possible we plan to the local circumstances of our school such as when we use the local environment as the starting point for aspects of our work. We also look into how pupils can work in a range of other relevant contexts, such as the home and school, gardens and playgrounds, the local community, industry and the wider environment. 'Plan Bee' is our preferred scheme of work, as from Year 1 to Year 6 the curriculum is designed to ensure continuity and progression across design and technology. Each unit of work is prepared and ready to teach but easily adjustable to the needs of individual classes. It includes detailed lesson plans, slideshows for the teaching input, differentiated activities to cater for different learners and offers suitable challenges within these lesson plans. There are a range of materials and resources for use.

All lessons planned to cover national curriculum objectives. Plan Bee provides teachers with systematic guidance on how to teach a skill based subject, whilst offering support in using equipment such as, knives, saws, and glue guns to achieve the final product. Differentiation during the lesson offers the opportunity for the children to think critically and make independent decisions.

Design and technology helps to teach maths, English and the wider curriculum in a fun manner. It puts these subjects into context, making them easier to understand for younger primary age pupils. Design and technology gives children the opportunity to develop skills, knowledge and understanding of designing and making functional products. We feel it is vital to nurture creativity and innovation through design, and by exploring the designed and made world in which we all live and work.

At Kings Hill, our school has a wide range of resources to support the teaching of design and technology across the school. Classrooms have a range of basic resources, with the more specialised equipment being kept in a central store.

5. Organisation

The focus is on the development and progression of knowledge and skills throughout their primary education, and as such, there is a whole school progression statement for coverage, building year on year. The main teaching resource we use is 'Plan Bee'.

In Key Stages 1 and 2 the subject is taught discretely or incorporated into the wider curriculum areas, as appropriate. Design and technology is taught as a half-termly unit of work, alternating across the term with art and design. It is timetabled for one afternoon per week across each year group. Each unit of work begins with examples of designs in real life contexts. Pupils are taken through skills in a systematic process throughout a period of weeks, in order to gain the necessary knowledge and understanding of the design and build process. We plan and deliver lessons linked to their topics and team building days throughout the year.

6. EYFS

Kings Hill, encourages the development of knowledge, skills and understanding that help children make sense of their world as an integral part of the school's work. As part of the Early Years Foundation Stage we relate the development of the children's Knowledge and Understanding of the World to the objectives set out in the Early Learning Goals. These underpin the curriculum planning for pupils aged three to five. This learning forms the foundations for later work in design and technology. These early experiences include asking questions about how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction material safely and with increasing control.

We plan according to the children's interests and provide an enabling environment offering a range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the pupil's interest and curiosity.

7. KS1 and KS2

Key Stage 1 and 2 pupils will undertake one unit of work per term, at least. They will also have opportunities during Design and Technology lessons to develop their own ideas and generate designs independently. Progression of design and technology skills will be monitored by staff formally and informally with references to expectations from the National Curriculum.

Key Stage 1

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 and school, gardens and playgrounds, the local community, industry and the wider environment]. 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.

Key Stage 2

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]. 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.

8. Health and Safety

The safety of the pupils is the responsibility of the class teacher. The pupils are made aware of the safe use and correct procedure involved when using tools and equipment in a learning environment and how to follow proper procedures for food safety and hygiene. The pupils are made aware of the need to be careful and to understand that their actions can affect others. The pupils build up a range of skills when using equipment to reduce unnecessary risk. All staff are made aware of food safety procedures when working with food to minimise any risks. The pupils wear protective clothing if necessary.

Risk assessments are put in place for practical lessons and safety procedures and ratios of pupils per adult are followed with particular equipment to ensure complete safety. Where pupils are to participate in activities outside the classroom e.g. on a visit to a museum or restaurant, we carry out a risk assessment prior to the activity to ensure that the activity is safe and appropriate for the pupils.

9. Equal Opportunities and Inclusion

Kings Hill is committed to ensuring the active participation and progress of all pupils in their learning. All pupils will be given equal opportunities to achieve their best possible standard, whatever their current attainment and irrespective of gender, ethnic, social or cultural background, home language or any other aspect that could affect their participation or the progress of which they are capable.

At Kings Hill Primary school, we teach design and technology to all pupils, whatever their ability and individual needs. Through our design and technology teaching, we provide opportunities for all pupils to make good progress. We work to meet the needs of pupils with special educational needs, those with disabilities, those with special gifts and talents and those learning English as an additional language. Assessment against the national curriculum allows us to consider each pupil's attainment and progress against expected levels. This helps to ensure that our teaching is aligned to the pupil's needs, allowing them to make progress across the various areas of the subject over the years.

9. Role of the Subject Lead

As subject leader, the role is to give support to staff through training and the organisation of quality resources, monitor how the subject is taught, ensure the progression statements are being followed

and met, and give all pupils a broad and balanced curriculum through memorable learning experiences that will enhance their knowledge, skills and understanding.

The subject leader will:

- Work to raise the profile of design and technology at King's Hill through best practice. They will provide support as required as part of the staff members continued professional development.
- Ensure classroom environments are conducive to learning, through effective use of displays and accessibility and availability of resources
- Involve the school in 'celebrations' of design and technology, including participation in events such as 'Food for life Days'.
- Monitor progression and continuity of design and technology throughout school through observations and regular monitoring of outcomes of design and technology lessons.
- Ensure that all staff have access to year group plans and the relevant resources, which accompany them.
- Monitor pupils' progress through the analysis of whole school data. This will be used to inform the subject development plan which will detail how standards in the subject are to be maintained and developed further.
- Organise, audit and purchase Design and Technology resources.
- Ensure that all staff have access to professional development including observations of outstanding practice in the subject.

The design and technology subject leader has specially allocated, regular management time in order to review evidence of the children's work and undertake lesson observations of design and technology teaching across the school.

10. Parental Involvement/Home Links

At King's Hill, we recognise that parents and carers have a valuable role to play in supporting their child's Design and Technology learning.

- Parents are informed of their child's progress at Parents' Evenings and this is also communicated in written school reports. Information about their child's standards, achievements and future targets in design and technology is shared during these meetings, as well as ways that parents/carers may be able to assist with their child's learning.
- The year group expectations are shared with parents so they are able to support them at home.
- Where possible we invite our parents and carers in to join to participate in design and technology activities / events, modelling to them behaviours we want to promote in our school and community sharing ideas with them on how this can be supported at home too.

To be reviewed July 2027