GREAT HORWOOD CHURCH OF ENGLAND SCHOOL

DESIGN TECHNOLOGY CURRICULUM STATEMENT October 2024

OUR VISION

We are great designers when we have the opportunities to:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- Apply aspects of science, art, ICT and maths to their designs
- To select the suitable materials and a range tools for a specific design and justify why
- 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.

At Great Horwood Church of England School, the academic, emotional and spiritual well-being of all individuals is at the heart of all that we do; where everyone is valued. We are a safe, welcoming school within the heart of the village community that aims to provide all our children and adults with the learning opportunities to flourish, be healthy, grow in resilience and realise their full potential; being fully equipped and prepared for a successful future.

Our aim is to foster a love of learning where pupils' curiosity is encouraged enabling them to confidently explore and flourish by discovering the design world around them. Design and Technology is an inspiring, rigorous and practical subject. It encourages children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. Our design technology curriculum aims to inspire pupils to be innovative and creative thinkers who have an appreciation for the product design cycle through design, creation and evaluation. We want pupils to develop the confidence to take risks, through crafting design, concepts, modelling, and testing, and to be reflective learners who evaluate their work and the work of others. Through our the KAPOW scheme of work, we aim to build an awareness of the impact of design and technology in our lives and encourage pupils to become resourceful, enterprising citizens who will have the skills to contribute to future design advancements in our ever-changing world. 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.

INTENT

As a school we use the Kapow scheme of work as a basis for the units we teach in design and technology as this ensures progression of skills are built up sequentially and prior learning is built upon year on year over a two-year rolling programme. Where possible, links are made to other curriculum areas to support cohesion and STEM (science, technology, engineering and mathematics) subjects are linked to provide meaningful learning. By the end of each key stage, pupils at Great Horwood School are expected to know, apply and understand the subject matter, skills and processes specified in the relevant programme of study.

Progression in Design and Technology

A progression document detailing the skills and knowledge required within each strand is available on the school website. This supports teachers in ensuring lessons are pitched correctly and that knowledge and skills are developed and built upon year on year.

IMPLEMENTATION

Building on children's earlier experiences

Before embarking on Key Stage 1 work, many children will have started in Reception and have attended Nursery or Pre-School where they will have had opportunities to explore and use a range of media and materials, and to be imaginative and expressive.

These experiences are likely to have included:

- safely using and exploring a variety of materials, tools and techniques
- experimenting with colour, design, texture, form and function in natural and made objects, including resources from different cultures, and in their environment
- sharing their creations and explaining their ideas and chosen process
- making and using props and materials when role playing characters
- being imaginative and creative and making connections between one area of learning and another

These early experiences are then built upon as children progress into KS1.

Key Stage 1

During key stage 1, design technology is about developing children's creativity and innovation through providing practical design activities that allow children to be creative, investigate models and consider and understand how things are constructed. They are encouraged to reflect on the wider world around them and how design and technology has impacted the locality in which they live.

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

Pupils should be taught the knowledge, understanding and skills needed to engage in the 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].

Pupils should be taught:

Design

- 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, 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

IMPACT

Expectations

Progression in design and technology is shown through the different expectations at each Key Stage. The expectations are based on the national curriculum outcomes for 7-year olds being the expectation for the majority of children at the end of Key Stage 1 and age-related expectations for 11 -year olds being the expectation for the majority of children at the end of Key Stage 2.

Wider impact of design and technology education Language and communication

Children develop language skills by:

- exploring ideas about the starting points for their work
- asking and answering questions about source materials and how these help them to develop their ideas for creating, innovating and inventing their products
- finding out about design technology by extracting information from sources such as reference books, e-mails and the internet
- discussing and comparing their own and others' work and explaining their own views
- testing their own products and reviewing their successes and next steps in the making process

Values and attitudes

Children have opportunities in design and technology to:

- consider their own attitudes and values in relation to images and artefacts and learn to challenge assumptions, stereotypes and prejudice in visual and other forms
- develop respect for their own and others' work and learn how to offer and receive constructive feedback and praise;
- work with others, listening to and respecting each other's ideas and learning to value different strengths and interests within the group
- develop a respect for the materials and resources that they use in their work and learn to evaluate critically their own and others' use of these
- value the natural and made environment, including the distinctiveness of their locality, and learn to evaluate critically the role and function of design and technology within it

We measure the impact of our curriculum through the following methods:

- Marking of designs, drawings, evaluations
- Observing and listening to children working individually and in groups on projects
- Images and videos of children presenting their designs to different audiences
- Interviewing the pupils about their learning (pupil voice)
- Annual reporting of standards across the curriculum to parents
- Learning walks
- Subject tracking

The Design and Technology subject leader will continually monitor the impact of design and technology teaching is having on the children's learning, through work scrutiny, to ensure the progress of knowledge and skills is being taught. They will also ensure the knowledge taught is retained by the children and continually revisited and that the learners are able to apply the skills they have been taught to a variety of different settings, showing independence with their learning. Impact will also be measured through key questioning skills built into lessons, child-led assessment such as success criteria grids aimed at targeting next steps in learning.

Safeguarding

Safety is paramount in all lessons and where the children are researching using technology to support the learning of Design and Technology, the safeguarding principles are applied. All forms of technology are checked regularly, and children know how to safely report any unwanted sites or images that may appear despite the filters and precautions taken. We have ensured our child protection policies cover the use of technology by adults and children within the school. The school complies with 'Inspecting

Safeguarding in early years, education and skills settings' and appropriate filters and monitoring systems are in place to protect learners from potentially harmful online material.

Special Educational Needs, Inclusivity and Equality

Great Horwood CE School is committed to promoting inclusivity and equality of opportunity for all pupils. When planning and teaching design technology staff will make reasonable adjustments to promote equality of opportunity for all pupils based on them as individuals.

Lesson plans outline how learning is scaffolded in many ways to ensure equality of access to all children, enabling them to be inclusive to whole class, quality first teaching. For children from disadvantaged backgrounds, with special educational needs or who have English as an additional language, tasks may be broken down into smaller components, providing them with achievable goals. Learning builds upon small components and reinforces pupils understanding of content previously taught. As a result of this, all children will be enabled to achieve their full potential.

Specific support might include:

- allocating adult support
- providing additional support materials (e.g. visual aids such as photographs, Makaton symbols, concept boards)
- providing alternative resources e.g. switch technology which is easy to manipulate, use of alternative materials for pupils with sight or hearing difficulties.
- modifying tasks (e.g. working on the same objectives but with an alternative choice of media, recording work in different ways such as with a digital camera/ verbally/ with a tape-recorder)
- See also 'SEN Policy'.
- Fine & Gross Motor Skills - Adapting resources, e.g. using bigger needles.
- Allowing additional time to practise with equipment
- Being able to visualise the end product by break it down, using visuals and providing examples to look at
- Adult support to help pupils evaluate their work – what went well
- To support confidence and motivation, encouraging a Growth Mindset -by breaking down instructions, sequencing new learning
- Opportunities to practise new learning through modelling skills, sharing work, use of silent gallery
- Developing Cultural Capital by using visuals, photos, videos
- Extending vocabulary using word mats, pre teaching, modelling, and videos
- Physical Dexterity - Fine and gross motor skills practice

SMSC

Spiritual Development:

Pupils show a sense of enjoyment and fascination in learning about themselves, others and the world around them. They use their imagination and creativity and reflect on their experiences.

In Design and technology this involves:

• Exploring creativity as part of what animates and defines us; develop an awareness of the power of design and technology to express and reflect on their own thoughts and feelings; explore ideas,

explore the creative process as part of our expression of identity and recognise their own creativity in finding solutions to problems in design and technology.

Moral Development:

Pupils understand the consequences of behaviour and actions; offer reasoned views about moral and ethical issues in art and design and appreciate the viewpoints of others on these issues.

In design and technology this involves:

• Exploring how design can express choices, consequences and responsibility; represent or consider moral issues in their design work; consider the effect of their designs on the environment and quality of life.

Social development:

Pupils use social skills in different contexts and participate in a variety of social settings, including mutual respect, tolerance of those with different beliefs; participate fully in and contribute positively to life in modern Britain.

In design and technology this helps:

• Develop respect for the ideas and opinions of others and work collaboratively on design projects; recognise the need to consider the views of others when discussing design ideas to develop a sense of social cohesion; consider the social impact of design and technology on quality of life through, for example, architecture, structures.

Cultural development:

Pupils develop an appreciation of and respond positively to a range of artistic and other cultural opportunities; understand and appreciate the range of different cultures & heritages within school and further afield as an essential element of their preparation for life.

In Design and technology this encourages pupils to:

- Develop a wider cultural awareness in design technology through projects that have a connection with our past heritage and how our industrial routes have shaped our nation; expand their knowledge of other cultures influences on design and manufacture including an increasing awareness of the influences digital manufacturing developments from other countries is having on the designing and making of products that we use.