



Winslow School Statement of Intent for Design Technology

Vision:

At Winslow Church of England School, our vision is '**Let your light shine**'. The rainbow symbolises God's unconditional love for each individual. We seek to reflect that light in all we do: in our community, both local and wider, our communication, both word and action, with curiosity and courage, and with care and compassion for everyone, inspiring a love of learning.

Intent:

At Winslow C of E School we want to encourage the development of inquisitive and curious minds that are inspired by the modern world of design and technology. The children will design and make products that are relevant to everyday life. Their research will allow them to understand the historical development of these products and how they have changed over time.

Pupils will have invaluable opportunities to create, innovate, develop and produce outcomes in all areas of the Design and Technology curriculum. For successful outcomes they will need to understand the functional and aesthetic properties of the materials they select and draw on knowledge from other curriculum subjects. Opportunities to use knowledge from other curriculum areas is encouraged, so that pupils can appreciate how the design process is influenced by mathematical concepts, scientific knowledge and the creativity of minds that continue to inspire designers of the modern world. Our aim is to empower each individual with skills and knowledge that will stay with them for the rest of their lives.

Design and Technology is an exciting subject, allowing pupils to explore, analyse and understand the development of the design world and technology they use every day. We want to embed and build a solid foundation for our pupils to embrace the challenges of the design process by:

- Developing practical and technical skills to enable them to create high quality products
- Developing their understanding of aesthetics and functionality
- Empowering them to work creatively, confidently and collaboratively when sharing and developing their ideas
- Evaluating and critiquing outcomes and testing products to ensure they are fulfilling the design criteria
- Discuss, explain and communicate their ideas and choices
- Applying the principles of nutrition and learning how to cook

As they apply their knowledge and skills to each new unit they will understand and appreciate the impact of each generation's contributions and how design and technology impacts on their lives. The knowledge and insight they gain will continue to demonstrate the importance of this subject and how it has enriched our lives and offered solutions to issues society has needed to adapt for.

Aims and purposes of Design and Technology

Winslow pupils will appreciate the world of high-quality design and the technology that has improved the quality of lives across the globe. Through their research and their investigations of existing products, they will have the opportunity to consider how the products have successfully fulfilled the design criteria.

As they progress through each key stage they will continually:

- Apply acquired knowledge from their research when designing their own products
- Develop the skills to make products confidently, building prototypes and final products to a high standard
- Approach their learning with determination and resilience, ready to adapt their designs to ensure their outcomes are fulfilling the design criteria
- Evaluate and record their outcomes when considering next steps and any improvements required
- To discuss and share ideas with their classmates when collaborating on design projects
- To understand importance of nutrition when adapting recipes

Implementation:

Using Kapow Primary's Design and Technology scheme of work, the design technology curriculum will be taught over 3 half terms each year with around 6-8 hours dedicated to each unit. Our focus areas are studied over a 2 year cycle. The scheme offers pupils a clear progression of skills and knowledge within six key areas:

- Mechanisms
- Structures
- Textiles
- Cooking and nutrition (Food)
- Electrical systems (KS2)
- Digital world (KS2)

In line with the national curriculum expectations, the pupils will demonstrate that they are covering all the main stages of the design process:

- Design
- Make
- Evaluate
- Technical knowledge
- Cooking and nutrition

Through their research, we aim to introduce pupils to every aspect of the design process and time to appreciate the work of engineers, designers, chefs and architects. The understanding they gain by evaluating existing products will allow them to apply their knowledge to the design of their own products. Working towards the design criteria will present them with challenges that will test their ingenuity and imagination.

Pupils will learn how to record their ideas, considering the process and skills required, whilst being encouraged to evaluate any adaptations that will improve their final product. As a result, pupils

will have the opportunity to reflect, take risks and learn to adapt work during each stage of the design process.

Skills will vary with each unit, but lessons will incorporate time to develop any new skills required while still enabling pupils to produce original outcomes. While working with the Kapow scheme, pupils will continue to revisit and build on their previous years' experience when covering each key area. This will empower students and allow them to take ownership of their learning.

Preschool and Reception

Throughout Pre-School and Reception years, pupils are introduced to a variety of creative and practical activities, giving them the opportunity to gain knowledge, understanding and skills. Introducing the iterative design process, pupils will begin learning to create, test and revise their ideas through play until they are happy with their final product.

Pre-School will:

- Explore materials, and their uses
- Use shapes to represent objects
- Draw with increasing detail
- Explore colour
- Join different materials

Reception are given opportunities to:

- Safely work with a range of different materials, tools and develop their creative skills while developing their fine motor skills
- Explore different joins (paperclips, split pins, folding, tape, tying a knot, stapler, glue)
- Explore materials and consider their properties for a range of uses
- Threading and weaving with different materials

Key Stage 1:

Pupils will continue to build on their experiences from Pre-School and Reception.

When designing and making, pupils should be taught to:

Design

- Apply the design criteria to create a product for a specific purpose
- Test and evaluate their product to ensure functionality
- Create appealing products for themselves and other users based on design criteria
- Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups

Make

- Select and use a range of tools and equipment to perform practical tasks
- Select from and use a wide range of materials and components

Evaluate

- Explore and investigate 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

Key Stage 2

Pupils will continue consolidating and developing their skills and knowledge from KS1. They will need to consider a wider range of design requirements.

When designing and making, pupils should be taught to:

Design

- Research and develop designs to fulfil a more complex design criteria
- Design products that are fit for purpose, aimed at a particular demographic
- To design innovative, functional and appealing products
- To 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 identify the steps towards completing a successful product or prototype
- To perform practical tasks accurately
- Select from and use a wider range of materials and components for functionality and aesthetic qualities

Evaluate

- Investigate and analyse a range of existing products
- Evaluate their ideas and products against their own design criteria
- To discuss 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

- Continue to 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

Marking and Assessment

The Kapow scheme provides assessment tools to support teachers and pupils to identify successful learning and measure progress. Summative assessment grids are used at the end of each learning block. Pupils' progress will be recorded against each learning objective, which will help identify who is demonstrating secure or greater depth understanding in each lesson. Teachers will also assess how pupils approach their learning while they develop and create their products. During lessons, formative assessments will ensure that pupils are supported while completing work. As well as marking work, focused classroom discussions will allow teachers to identify pupils who are evaluating and refining their designs as they work. Pupils will be encouraged to document their

progress at the end of each lesson. As part of the evaluation process, pupils will be given opportunities to present their designs and final products (or prototypes), and discuss their work with each other. Regular monitoring, through pupils' voice, workbook assessment and learning walks, will continue to track progress and continuity across the school.

Cooking and Nutrition Units:

Pupils will have the opportunity to learn more about food and nutrition. This will develop a better understanding of healthy food choices. During these lessons they will begin to understand where food comes from and the health benefits of a varied and balanced diet. While learning about the importance of fruit and vegetables in their diets, they will discover how food is grown and understand seasonality. Food hygiene is taught while they are preparing their ingredients and when using a range of cooking techniques.

Purpose of Study

“Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, 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 broad 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. 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. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation”

National Curriculum Sept 2013

Design Technology offers opportunities to:

- Apply knowledge learned from other curriculum areas such as computing, science, art and utilise mathematical skills
- To understand the design process
- Develop a range of practical skills while producing outcomes
- Develop an understanding of drawing as a method of communication
- Develop an understanding of aesthetics and its role in the design
- Develop resilience when adapting to challenges
- Learn about functionality in design
- To test products continuously against expectations and design criteria
- Understanding that every mistake is an opportunity to problem solve
- To be adventurous and innovate independently
- To evaluate and problem solve as they develop their ideas
- To understand the ever-changing modern world and provide opportunities to work with technology
- To consider the wider implication of environmental and cultural factors that affect design

Progression and Continuity

A curriculum overview document for parents and carers is available on the website. This should be used alongside the school overview which will explain the school's coverage. This provides a summary of the key Design and Technology learning, outlining the skills and knowledge that the pupils will acquire when completing work successfully. A more in depth document is provided by the scheme to support the staff, ensuring that they plan lessons which cover all aspects of the

design process. All staff will continue to build on from the previous year's learning, while preparing knowledge and skills required for the following year.

Special Educational Needs and Equality

All planning will be adapted to ensure successful outcome for the abilities of all pupils. Tasks will be broken down and support will be available to give pupils achievable goals towards successful outcomes. Staff will make reasonable adjustments to help pupils' complete work and to enable positive outcomes for pupils with learning difficulties.

This may include:

- Allocating adult support adapted to student's specific needs
- Providing relevant and suitable support materials e.g. breakdown of task, visual aids
- Support when recording ideas e.g. adult scribing, laptops, cameras

Safeguarding

Pupils will be trained on the safe use of equipment including the use of technology, ensuring online safety advice is reinforced. Students are protected when using computers and tablets as precautions and filtering are in place to protect against unwanted sites or images. Regular online safety is taught in other curriculum subjects (computing and PHSE learning) reminding pupils how to safely report any harmful online material.

Pupils will continue to follow the established safeguarding policies, including expectations when using equipment and moving safely around the room while they are working. During cooking and nutrition lessons, pupils will be taught food hygiene when preparing meals, alongside safe, correct use of cutting equipment when preparing food. Pupils will be monitored at all times when using equipment to ensure their safety, and all electrical equipment will continue to be checked and maintained.

SMSC

Spiritual Development

Pupils will recognise and understand that humans are connected by their creativity and are inspired by their surroundings. They will marvel at the ingenuity of innovators that have helped shape the world. We want to present opportunities for pupils to celebrate their culture and recognise that we are also inspired by the culture of others. By appreciating the diversity of design, we want to inspire the pupils to invent, imagine and take ownership of their learning. Pupils will discover the impact of design within their world and how human inventions have improved the quality of life and how each culture adapts designs to overcome different challenges they face. Throughout their learning, pupils will realise that humans have been inspired by structures in nature and through our observations of the natural world.

By engaging with class discussions and reflection time, children will have opportunities to discuss their own thoughts and preferences, realising the value of their own individuality will give them all a unique point of view.

Moral Development

Developing pupils' knowledge will encourage them to ask questions and consider the impact of design on society and how it affects the issues that the world is currently facing i.e. global warming, plastic pollution. Pupils will understand how design and technology has improved life for humans and that each generation plays a role its development, from adapting ideas to refining them to ensure their effectiveness.

By exploring the impact of design, both positive and negative, they will:

- Question and understand the consequences of their behaviour and actions in their own lives and how it impacts the lives of others
- Consider ethical issues that arise within the development of new materials and its impact on the quality of life for others.
- Adapt work to ensure that their product produces no negative outcomes for others
- Consider and respond to the viewpoints of others during the design process

Social development

Design is a collaborative process and through discussion, sharing ideas and thoughts, pupils will appreciate that their contributions and the views of others are a valuable part of the overall outcome. By sharing their ideas confidently and considering alternative points of view they will learn how to develop successful working relationships, respecting other children's point of view. Pupils will understand that design and technology plays a crucial part in our culture and cultural identity, that design has contributed to mankind both positively and negatively and therefore that it has a lasting impact. They will understand the role of travel and how it has influenced and contributed to changing styles, allowing us to build mutual respect between cultures and tolerance of those with different beliefs.

Cultural Development

As pupils discover the historical development of design and technology they will realise that while cultures have traded their goods they have also shared their creativity. Many cultures have evolved to include and embrace other ways of thinking. Pupils will use this knowledge to draw on their experiences as consumers when assessing other products and considering the culture of their generation when compared to other generations. They will be asked to consider changes in trends and recognise that their own culture is influenced and inspired by design and technology from other countries too. Many countries now have a diverse range of cultures and export their goods across the world, so it has become important for designers to consider a range of cultural beliefs when designing for the global marketplace. Appreciating the diversity within each culture will demonstrate that our society is richer when we embrace exciting new ideas.

Impact

Design Technology is exciting because it develops transferable skills which can be used within other creative endeavours. Children will be encouraged to approach challenges with a growth mind-set.

During the design process, pupils will communicate their ideas with sketches and annotated diagrams that demonstrate their thought processes and how they intend to work towards their

intended outcome. Developing a resourceful, enterprising and self-motivating culture will encourage pupils to share skills and discuss their outcomes. Offering collaborative opportunities to assess the ideas of others and suggest alternative solutions will allow pupils to 'brainstorm' as a group while enabling them to identify and celebrate their progress.

Lesson planning will ensure regular opportunities for pupils to self-evaluate, record and reflect on their design journey. Using an iterative process will allow them to demonstrate resilience and an ability to adapt as required. Discussions and key questions will support pupils while they explore their own values and attitudes towards the man-made world and how they live and work within it. They will also consider and respond to the feedback of other pupils and their reflections of the design world.

As a result of regular monitoring, we will continue to ensure that this impact is evident throughout the pupils' books and encourage pupils to discuss their outcomes, drawing on all aspects of the design process. During learning walks we want to see pupils take ownership of their learning, engaging positively with their challenges and developing their creativity.