Design and Technology Curriculum Map

National Curriculum Content

KS1

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.

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.

In KS1 pupils should be taught to:

- ✓ use the basic principles of a healthy and varied diet to prepare dishes
- ✓ understand where food comes from

KS2

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

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In KS2 Pupils should:

- ✓ 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.

What does the National Curriculum say about Design and Tecnology?

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.

Here at Stramongate…

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. At Stramongate School children are taught to select and use appropriate tools safely and effectively to make a product. In all areas of Design and Technology the children are encouraged to consider the effectiveness of their designs and requirements of the product. Every child will have the opportunity to learn and extend their understanding, experience and application in the use of technology, including I.C.T, in as wide a variety of situations as possible.

We aim to:

- ✓ to deliver programmes of study for Key Stages 1 and 2 of the National Curriculum in Design and Technology;
- ✓ to develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making
- ✓ to enable children to talk about how things work, and to draw and model their ideas
- ✓ to encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures
- ✓ to explore attitudes towards the made world and how we live and work within it
- ✓ to develop an understanding of technological processes, products, and their manufacture, and their contribution to our society
- ✓ to foster enjoyment, satisfaction and purpose in designing and making.

The subject map below shows how our school has interpreted this content. We have chosen to teach DT, where appropriate, through a cross curricular approach throughout the whole academic year.

EYFS

These are the Early Learning Goals that cover D&T…

Early Learning Goal 4 (Moving and handling):

They handle equipment and tools effectively, including pencils for writing

Early Learning Goal 16 (Exploring and using media and materials):

They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function

Early Learning Goal 17 (Being imaginative):

Children use what they have learnt about media and materials in original ways, thinking about uses and purposes

They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role-play and stories

This is what we do…

- Workshop used during continuous provision with a range of basic enhancements (introduced gradually to the children) and then various different enhancements used to link in with our different topics
- Construction used during continuous provision (design sheets are available for the children so that they can draw their design)
- Table-top activities during continuous provision to help with scissor skills as well as other small tools such as hole punchers
- Introduce the workbench with real tools to a group at a time and gradually leave that out during continuous provision
- Make models of Kendal buildings during our 'Kendal' topic
- Make vehicles during our 'People Who Help Us' topic
- Make Threadbears in our 'Bears' topic, introducing how to use a hole punch
- Make sandwiches, pizzas, biscuits, cakes etc during various topics

Key Stage One

Year	Autumn	Spring	Summer
1	✓ Draw on own experience to help generate ideas. ✓ Suggest ideas and explain what they are going to do. ✓ Model their ideas in card and paper	✓ Develop their design ideas applying their findings from their earlier research. ✓ Identify a target group for what they intend to design and make. ✓ Make their design using appropriate techniques ✓ Evaluate their product by discussing how well it works in relation to the purpose ✓ Evaluate their products as they are developed, identifying strengths and possible changes they might make ✓ Evaluate their product by asking questions about what they have made and how they have gone about it ✓ Use tools e.g. scissors and a hole punch safely ✓ Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. ✓ Select and use appropriate fruit and vegetable, processes and tools ✓ Use basic food handling, hygienic practices and personal hygiene ✓ Use simple finishing techniques to improve the appearance of their product	✓ With help measure, mark out, cut and shape a range of materials. ✓ Develop their design ideas applying their findings from their earlier research. ✓ Identify a target group for what they intend to design and make. ✓ Make their design using appropriate techniques ✓ Evaluate their product by discussing how well it works in relation to the purpose ✓ Evaluate their products as they are developed, identifying strengths and possible changes they might make ✓ Evaluate their product by asking questions about what they have made and how they have gone about it ✓ Use tools e.g. scissors and a hole punch safely ✓ Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. ✓ Select and use appropriate fruit and vegetable, processes and tools ✓ Use basic food handling, hygienic practices and personal hygiene ✓ Use simple finishing techniques to improve the appearance of their product ✓ **Curriculum links:** ✓ Victorians ✓ Africa ✓ Science (ourselves, sound and hearing, plants, light and dark, materials and minibeasts.)

2	• Generate ideas by drawing on their own and other people experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make • Identify simple design criteria • Make simple drawings and label parts • Measure, cut and score with some accuracy • • Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them • To follow safe procedures for food safety and hygiene	• Measure, cut and score with some accuracy • Begin to select tools and materials; vocab to name and describe them • Use hand tools safely and appropriately • Assemble, join and combine materials in order to make a product • Cut, shape and join fabric to make a simple garment. Use basic sewing techniques • Choose and use appropriate finishing techniques • Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them	• Generate ideas by drawing on their own and other people experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make • Identify simple design criteria • Make simple drawings and label parts • Begin to select tools and materials; vocab to name and describe them • Use hand tools safely and appropriately • Assemble, join and combine materials in order to make a product • Choose and use appropriate finishing techniques • Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them

Lower Key Stage Two

Year	Autumn	Spring	Summer
3	✓ Generate ideas for an item, considering its purpose and the user/s ✓ Identify a purpose and establish criteria for a successful product ✓ Plan the order of their work before starting ✓ Explore, develop and communicate design proposals by modelling ideas ✓ Make drawings with labels when designing ✓ Select tools and techniques for making their product ✓ Measure, mark out, cut, score and assemble components with more accuracy ✓ Work safely and accurately with a range or simple tools ✓ Think about their ideas as they make progress and be willing to change things if thing helps them improve their work ✓ Measure, tape or pin, cut and join fabric with some accuracy ✓ Demonstrate hygiene food preparation and storage ✓ Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT ✓ Evaluate their product against original design criteria eg how well it meets its intended purpose	✓ Generate ideas for an item, considering its purpose and the user/s ✓ Identify a purpose and establish criteria for a successful product ✓ Plan the order of their work before starting ✓ Explore, develop and communicate design proposals by modelling ideas ✓ Make drawings with labels when designing	✓ Generate ideas for an item, considering its purpose and the user/s ✓ Identify a purpose and establish criteria for a successful product ✓ Plan the order of their work before starting ✓ Explore, develop and communicate design proposals by modelling ideas ✓ Make drawings with labels when designing ✓ Select tools and techniques for making their product ✓ Measure, mark out, cut, score and assemble components with more accuracy ✓ Work safely and accurately with a range or simple tools ✓ Think about their ideas as they make progress and be willing to change things if thing helps them improve their work ✓ Measure, tape or pin, cut and join fabric with some accuracy ✓ Demonstrate hygiene food preparation and storage ✓ Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT ✓ Evaluate their product against original design criteria e.g. how well it meets its intended purpose ✓ Disassemble and evaluate familiar products

	✓ Use simple graphical communication techniques ✓ Evaluate their products carrying out appropriate tests	✓ Generate ideas, considering the purposes for which they are designing ✓ Develop a clear idea of what has to be done, planning how to use materials, equipment and processes and suggesting alternative methods of making, if the first attempt fails. ✓ Evaluate products and identify criteria that can be used for their own designs ✓ Select appropriate tools and techniques for making their product ✓	✓ Generate ideas, considering the purposes for which they are designing ✓ Develop a clear idea of what has to be done, planning how to use materials, equipment and processes and suggesting alternative methods of making, if the first attempt fails. ✓ Evaluate products and identify criteria that can be used for their own designs ✓ Select appropriate tools and techniques for making their product ✓ Mark labelled drawings from different views showing specific features ✓ Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques ✓ Join and combine materials and components accurately in temporary and permanent ways ✓ Evaluate their work both during and at the end of assignment ✓ ✓ Sew using a range of different stitches, weave and knit ✓ Measure, tape or pin, cut and join fabric with some accuracy

Upper Key Stage Two

Year	Autumn	Spring	Summer
5		✓ Use skills in using different tools and equipment safely and accurately ✓ Weigh and measure accurately (time, dry ingredients, liquids) ✓ Apply the rules for basic food hygiene and other safe practices eg hazards relating to the use of ovens ✓ Evaluate a product against the original design specification ✓ Evaluate it personally and seek evaluation from others	✓ Generate ideas through brainstorming and identifying a purpose for their product ✓ Draw up a specification for their design ✓ Develop a clear idea of what has to be dne, planning how to use materials, equipment and processes and suggesting alternative methods of making it, if first attempt fails ✓ Use results of investigations, information sources, including ICT when developing design ideas ✓ Select appropriate materials, tools and techniques ✓ Measure and mark out accurately ✓ Cut and join with accuracy to ensure a good quality finish the product ✓ Use skills in using different tools and equipment safely and accurately ✓ Weigh and measure accurately (time, dry ingredients, liquids) ✓ Apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens ✓ Evaluate a product against the original design specification ✓ Evaluate it personally and seek evaluation from others
6	✓ Na DT covered due to SATS	✓ No DT covered due to SATS.	✓ Communicate their ideas through detailed labelled drawings ✓ Develop a design specification ✓ Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways ✓ Plan the order of their work, choosing appropriate materials, tools and techniques ✓ Select appropriate tools, materials, components and techniques ✓ Assemble components make working models ✓ Use tools safely and accurately ✓ Construct products using permanent joining techniques ✓ Make modifications as they go along ✓ Pin, sew and stitch materials together to create a product ✓ Achieve a quality product ✓ Evaluate their products, identifying strengths and areas for development and carrying out appropriate tests ✓ Record their evaluations using drawings with labels ✓ Evaluate against their original criteria and suggest ways that their product could be improved

DT clubs are provided, usually in the autumn and summer terms, but this can vary, depending on resources and need.

Other DT opportunities:

- Corridor displays outside the Year 6 classroom and the work station, which are developed as a whole school initiative and linked to a theme.
- We have opportunities to make DT products for props for nativity plays and class assemblies
- DT work is produced for the Torchlight procession in the summer term, linked to a theme.
- DT work is provided for the Westmorland County show each year in September.
- We also try and incorporate DT skills such as pop up cards for celebrations such as Christmas, Mothers and Father's day cards, Easter cards.