



Shinewater Primary School

Design and Technology

Swale Academies Trust

Intent

- Design and Technology is an inspiring, rewarding and practical subject.
- At Shinewater we encourage children to learn, think and work creatively to solve problems both as individuals and as members of a team.
- We support children to develop 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, wherever possible, to link work to other subjects such as mathematics, science, engineering, computing and art.
- The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.



How Design and Technology is taught at Shinewater



Within a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in the process of designing and making. The children work in a range of relevant contexts, for example home, school, leisure, culture, enterprise, industry and the wider environment, in order to make their creations meaningful. At Shinewater key skills and knowledge for Design and Technology have been mapped across the school to ensure

progression and coverage across year groups. This also ensures that there is a purpose for the children's work, that they learn about real life structures and products as a basis for their own work. Design and Technology lessons are taught in all year groups at least three times per year. When designing and making, the children learn skills through four strands which is the process of: Designing, making, technical knowledge and evaluating. Food technology is

implemented across the school with children developing an understanding of where food comes from, the importance of a varied and healthy diet and how to prepare this. The Early Years Foundation Stage (EYFS) follows the 'Development Matters in the EYFS' guidance which aims for all children in Reception to have a Good Level of Development in the Expressive Arts and Design area of learning by the end of the academic year.

Impact



- At Shinewater understanding and progression within the Design and Technology curriculum will be measured against the key skills, relevant to each year group.
- Children will be deemed to have succeeded if they have developed the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- Additionally they will have gained the expertise to make high-quality prototypes and products for a wide range of users. At the end of the process children should be able to critique, evaluate and test their ideas and products and the work of others.
- This will be evidenced through Learning Adventure books, completed work, displays and talking to children.



Design and Technology Progression in Skills

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 a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- ♣ 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

Year 1

Designing

- ❖ Think of own ideas for a design
- ❖ Use pictures and words to plan – what is it for, how will it work, who is it for, suitability for the user
- ❖ Design a product following design criteria
- ❖ Work in a range of contexts (imaginary, home, school, wider community, story based)
- ❖ Use ideas from their own experience

Making

- ❖ Select appropriate tools and equipment for the purpose - cut, shape, join and finish
- ❖ Describe the tools that are being used
- ❖ Explain what is being made and why
- ❖ Choose the right materials

Evaluating

- ❖ Describe how existing products work
- ❖ Talk about own work and link it to what was asked – the design brief
- ❖ Think of ways to improve the product
- ❖ Evaluate others' work

Technical knowledge

- ❖ Show how freestanding structures can be made stronger, stiffer and more stable
- ❖ How to use simple mechanisms to add movement such as levers, sliders, wheels and axles

Cooking

- ❖ Cut food safely
- ❖ Describe the texture of foods
- ❖ Wash hands and ensure surfaces are clear independently
- ❖ Think of interesting ways to decorate food
- ❖ Say which foods are healthy
- ❖ Explain why a diet should be healthy
- ❖ Can say where food comes from

Year 2

Designing

- ❖ Think of own ideas for a design
- ❖ Plan what I want to do
- ❖ Use pictures, words, diagrams and model mock-ups to plan – what is it for, how will it work, who is it for, suitability for the user
- ❖ Design a product following design criteria
- ❖ Work confidently in a range of contexts (imaginary, home, school, wider community, story based)
- ❖ Use ideas from their own experience

Making

- ❖ Select appropriate tools and equipment for the purpose - cut, shape, join and finish
- ❖ Describe the tools that are being used and why
- ❖ Explain what is being made and why the audience will like it
- ❖ Select from a wide range of materials and explain why they are being used

Evaluating

- ❖ Evaluate a range of existing products
- ❖ Talk about own work and link it to what was asked – the design brief
- ❖ Think of ways to improve the product
- ❖ Evaluate others work

Technical knowledge

- ❖ Show how freestanding structures can be made stronger, stiffer and more stable
- ❖ How to use simple mechanisms to add movement such as levers, sliders, wheels and axles
- ❖ Use correct technical vocabulary

Cooking

- ❖ Cut food safely – peel, grate, mix and mould
- ❖ Describe the texture of foods
- ❖ Wash hands and ensure surfaces are clear independently
- ❖ Think of interesting ways to decorate food
- ❖ Say which foods are healthy
- ❖ Explain why a diet should be healthy
- ❖ Can say where food comes from – animals, plants (over or underground)

Year 3

Designing

- ❖ Put together a plan that shows the equipment and tools needed and the order they will be used in
- ❖ Makes a design that meets a range of requirements
- ❖ Develop their own design criteria
- ❖ Describe the design using an accurately labelled sketch and words
- ❖ Work confidently in a range of contexts (imaginary, home, school, wider community, story based, leisure, culture, enterprise and industry)
- ❖ Gather information about needs and wants of particular individuals
- ❖ Share and clarify ideas through discussion

Making

- ❖ Select appropriate tools and equipment for the purpose - cut, shape, join and finish
- ❖ Describe the choice of tools and equipment in relation to the skills and techniques used
- ❖ Choose and describe materials according to aesthetic qualities and their functional properties
- ❖ Explain what is being made and why the audience will like it
- ❖ Order the main stages of making

Evaluating

- ❖ Evaluate a range of existing products
- ❖ Talk about own work and link it to what was asked – the design brief
- ❖ Think of ways to improve the product
- ❖ Evaluate others work

Technical knowledge

- ❖ Show how freestanding structures can be made stronger, stiffer and more stable
- ❖ How to use simple mechanisms to add movement such as levers, sliders, wheels, axles and pneumatic systems
- ❖ Use correct technical vocabulary
- ❖ Make cuts and holes
- ❖ Find different ways of joining materials
- ❖ That simple electrical circuits and components can be used to make functional products

Cooking

- ❖ Use a range of techniques safely – peel, grate, chop, slice, mix, knead, spread and bake
- ❖ Choose the right ingredients for a product
- ❖ Understand that food is grown (tomatoes, wheat) caught (fish) and reared (sheep and pigs)
- ❖ Understand the term 'hygienic'
- ❖ That a healthy diet is made up of a varied and balanced range of different foods and drink
- ❖ That to be active and healthy food and drink are needed to provide energy

Year 4

Designing

- ❖ Put together a step by step plan which show the order and the tools and equipment that will be used
- ❖ Explain the plan to others
- ❖ Make designs that meets a range of requirements, looking at the positives and negatives of each
- ❖ Develop their own design criteria
- ❖ Describe the design using an accurately labelled sketch and words
- ❖ Work confidently in a range of contexts (imaginary, home, school, wider community, story based, leisure, culture, enterprise and industry)
- ❖ Investigate similar products as a starting point for a design
- ❖ Take into account the ideas of others

Making

- ❖ Select appropriate tools and equipment for the purpose from a wide range - cut, shape, join and finish accurately
- ❖ Demonstrate a good level of expertise when using a range of tools and techniques
- ❖ Explain why my product will be liked by others
- ❖ Make a conscious decision to make something that will be liked by others
- ❖ Order the main stages of making

Evaluating

- ❖ Evaluate a range of existing products
- ❖ Explain how the choice of components and materials have contributed to the aesthetic qualities of the finished product
- ❖ Think of ways to improve the product – how it looks and how well it works
- ❖ Evaluate others work
- ❖ Evaluate other products against set criteria

Technical knowledge

- ❖ Show how freestanding structures can be made stronger, stiffer and more stable
- ❖ How to use simple mechanisms to add movement such as levers, gears, pulleys, cams, linkages and pneumatic systems
- ❖ Use correct technical vocabulary
- ❖ Make cuts and holes
- ❖ Find different ways of joining materials
- ❖ That simple electrical circuits and components can be used to make functional products

Cooking

- ❖ Use a range of techniques safely – peel, grate, chop, slice, mix, knead, spread and bake
- ❖ Choose the right ingredients for a product
- ❖ Understand that food is grown (tomatoes, wheat) caught (fish) and reared (sheep and pigs)
- ❖ Explain how to be hygienic and safe
- ❖ That a healthy diet is made up of a varied and balanced range of different foods and drink
- ❖ That to be active and healthy food and drink are needed to provide energy
- ❖ Understand seasonality, cooking mainly savoury dishes

Year 5

Designing

- ❖ Produce a detailed step by step plan
- ❖ Come up with a range of ideas after collecting information
- ❖ Suggest alternative plans and designs and say what the good points and drawbacks are
- ❖ Use cross sections planning to show a design
- ❖ Work confidently in a range of contexts (imaginary, home, school, wider community, story based, leisure, culture, enterprise and industry)
- ❖ Investigate similar products as a starting point for a design
- ❖ Take a user's view into account when designing
- ❖ Produce a prototype to show the design

Making

- ❖ Select appropriate tools and equipment for the purpose from a wide range - cut, shape, join and finish accurately
- ❖ Use tools and techniques expertly
- ❖ Explain why the finished product will be of good quality
- ❖ Explain how the product will appeal to the audience
- ❖ Order the main stages of making

Evaluating

- ❖ Evaluate a range of existing products
- ❖ Explain how the choice of components and materials have contributed to the aesthetic qualities of the finished product
- ❖ Think of ways to improve the product – how it looks and how well it works
- ❖ Evaluate function, appearance and whether it is fit for purpose
- ❖ Evaluate other products against my own criteria

Technical knowledge

- ❖ Show how freestanding structures can be made stronger, stiffer and more stable
- ❖ How to use simple mechanisms to add movement such as levers, gears, pulleys cams, linkages and pneumatic systems
- ❖ Use correct technical vocabulary
- ❖ Make cuts and holes
- ❖ Find different ways of joining materials
- ❖ Use scientific and maths to design and make products that work
- ❖ Mechanical and electrical systems have an input, process and an output and can be used to create functional products

Cooking

- ❖ Use a range of techniques safely – peel, grate, chop, slice, mix, knead, spread and bake
- ❖ Recipes can be adapted to change the taste, texture, appearance and smell
- ❖ Understand that food is grown (tomatoes, wheat) caught (fish) and reared (sheep and pigs)
- ❖ Explain how to be hygienic and safe
- ❖ Present the product well
- ❖ That food and drink contain different substances – nutrients, water and fibre
- ❖ Understand seasonality, cooking mainly savoury dishes

Year 6

Designing

- ❖ Produce a detailed step by step plan considering culture and society
- ❖ Use a range of information to inform my design
- ❖ Use market research to inform plans
- ❖ Follow and refine the plan
- ❖ Use cross sections planning, computer aided designs and exploded diagrams to show the product
- ❖ Work within constraints
- ❖ Investigate similar products as a starting point for a design
- ❖ Justify the plan to someone else
- ❖ Produce a prototype to show the design

Making

- ❖ Select appropriate tools and equipment for the purpose from a wide range - cut, shape, join and finish accurately
- ❖ Use tools and techniques precisely
- ❖ Change the way of working if necessary
- ❖ Explain how the product will appeal to the audience
- ❖ Order the main stages of making

Evaluating

- ❖ Test and evaluate the final product
- ❖ Say if the product is fit for purpose
- ❖ Evaluate what would improve the product, if I needed different or more information and if different resources what have been better
- ❖ Evaluate other products against criteria set by the child

Technical knowledge

- ❖ Show how freestanding structures can be made stronger, stiffer and more stable
- ❖ How to use simple mechanisms to add movement such as levers, gears, pulleys , cams, linkages and pneumatic systems
- ❖ Use correct technical vocabulary
- ❖ Think how the product could be sold
- ❖ Find different ways of joining materials
- ❖ Use scientific and maths to design and make products that work
- ❖ Mechanical and electrical systems have an input, process and an output and can be used to create functional products

Cooking

- ❖ Use a range of techniques safely – peel, grate, chop, slice, mix, knead, spread and bake
- ❖ Choose the right ingredients for a product
- ❖ Understand that food is grown (tomatoes, wheat) caught (fish) and reared (sheep and pigs)
- ❖ Explain how to be hygienic and safe
- ❖ Present the product well
- ❖ That food and drink contain different substances – nutrients, water and fibre
- ❖ Understand seasonality, cooking mainly savoury dishes

Design and Technology Long Term Plan 2019-20

Year 1	<p>Term 2</p> <p>Card making Mechanisms sliders and levers</p>	<p>Term 3</p> <p>Islands Structures Freestanding structures</p>	<p>Term 5</p> <p>Cooking Food - preparing fruit and vegetables (including cooking and nutrition requirements for KS1)</p>
2	<p>Term 2</p> <p>Fire engines Mechanisms wheels and axles</p>	<p>Term 3</p> <p>Cooking Food - preparing fruit and vegetables (including cooking and nutrition requirements for KS1)</p>	<p>Term 5</p> <p>Textiles - templates of joining techniques</p>
3	<p>Term 2</p> <p>Cooking Food - healthy and varied diet (including cooking and nutrition requirements for KS2)</p>	<p>Term 3</p> <p>Bridges Structures Shell structures (including computer aided design)</p>	<p>Term 6</p> <p>Sewing Textiles - 2D shape to 3D product</p>
4	<p>Term 2</p> <p>Cooking Food - healthy and varied diet (including cooking and nutrition requirements for KS2)</p>	<p>Term 4</p> <p>Electrical Systems Simple circuits and switches (including programming and control)</p>	<p>Term 6</p> <p>Rainforests Mechanical systems - levers and linkages</p>
5	<p>Term 2</p> <p>Cooking Food - celebrating culture and seasonality (including cooking and nutrition requirements for KS2)</p>	<p>Term 4</p> <p>Working models Electrical systems - more complex switches and circuits (including programming, monitoring and control)</p>	<p>Term 6</p> <p>Instruments Structures - Frame structures</p>
6	<p>Term 2</p> <p>Sewing Textiles - combining different fabric shapes (including computer aided design)</p>	<p>Term 4</p> <p>Mechanical systems - pulleys or gears</p>	<p>Term 6</p> <p>Cooking Food - celebrating culture and seasonality (including cooking and nutrition requirements for KS2)</p>