Design Technology Curriculum
Sproatley Endowed CE Academy

Intent:

'He has filled them with skill to do all kinds of work as engravers, designers, embroiderers in blue, purple and scarlet yarn and fine linen, and weavers—any sort of workman or skilled designer.'

Exodus 35:35

At Sproatley Endowed CofE Academy the Design and Technology curriculum combines skills, knowledge and understanding which enables children to tackle real problems. Design and Technology improves critical analysis, problem solving, and practical capability, as well as developing high quality evaluation skills. At Sproatley Endowed Academy we aim to, wherever possible, link work to other subject areas such as history, geography, mathematics, science, English, computing and art; thereby enabling pupils to notice connections and patterns in their learning. We also aim to, wherever possible, build relationships with local businesses and members of the school community.

Through Design Technology children are encouraged to become innovators and critical thinkers. High quality Design Technology education makes an essential contribution to the creativity, culture, wealth and wellbeing of the community, and thus the whole nation.

Design Technology Statutory Requirements		
EYFS	**KS1**	**KS2**
DT within EYFS is provided through adult-led taught sessions, as well as within continuous provision. Opportunities for children to learn by designing, making and evaluating across different mediums means that children are experiencing DT at their own pace, while learning new skills and consolidating knowledge. **Staff base activities and learning opportunities around children's interests - building in DT tasks linked to these interests and cross-curricular themes.** **By the end of EYFS, children should:** • Understand that media can be combined to create new effects. • Construct with a purpose in mind, using a variety of resources.	**DESIGN** • Design purposeful, functional, appealing products based on a design criteria. • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT. **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 or ingredients according to their characteristics. **EVALUATE** • Explore and evaluate a range of existing products. • Evaluate ideas and products against design criteria.	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **MAKE** • Accurately select from and use a wider range of tools and equipment to perform practical tasks, for example: Cutting; shaping; joining; and finishing • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients,

• Use simple tools and techniques competently and appropriately. • Select appropriate resources and adapts work where necessary. • Select tools and techniques needed to shape, assemble and join materials they are using. • Children safely use and explore a variety of materials, tools and techniques, experimenting with design, form and function. • Create simple representations of objects. • Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. **DESIGN AND DEVELOP** • Talk about what they want to make. **MAKING** • Use a variety of tools and materials to make models. **EVALUATION** • Be excited about what they have made.	**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** • Use the basic principles of a healthy and varied diet to prepare dishes. • Understand where food comes from.	according to their functional properties and aesthetic qualities. **EVALUATE** • Investigate and analyse a range of existing products. • Evaluate ideas and products against their own design criteria and consider the views of others to improve their work. • Understand how key events and individuals 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 products. **COOKING AND NUTRITION** • 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.

Design Technology Progression of Vocabulary

	Design and Develop	Making	Product	Evaluation
EYFS	• Plan • Draw • Ideas • Design	• Make • Combine • Shape • Build • Join • Tools	• Complete • Product • Final	• Change • Dislike • Better • Different • Like • Next time • Worse • Instead
	Design	**Technical Knowledge and Making**	**Cooking and Nutrition**	**Evaluation**
KS1	• Plan • Prepare • Design • Materials • Ideas • Use • Model • Development • Market Research • Survey • Template	• Fast • Faster • Up • Turn • Design • Sketch • Fix • Attach • Brick • Stone • Metal • Felt • Tissue • Cardboard • Wool • Scissors • Tape • Stick • Slow • Slower • Down • Wind up • Draw • Tools • Glue • Features • Wood • Cloth • Foam • Paper • Newspaper • String • Clay • Glue • Cut • Decorate	• Healthy • Source • Vegetables • Safe • Unsafe • Ingredients • Weight • Vegetarian • Dietary requirements • Unhealthy • Fruit • Clean • Dirty • Amount • Recipe • Nutrients	• Change • Prefer • Unsuccessful • Progress • Alter • Original • Evaluate • Improve • Useful • Future • modify • Adapt • Finished product • Graphics
KS2	• Plan • Prototype • Criteria • Labels • Brief • Consumer • Target audience • Application • Client • Organise • Initial ideas • Diagrams • Annotate • Product • Customer • Purpose • Constraints	• Materials • Liquid • Form • Adhesive • Mass-produce • Packaging • Machine made • Durable • Mould • Solid • Shape • Lattice • Hand-made • Presentation • Dimensions	• Healthy • Balanced • Disease • Healthy eating • Diet • Grams • Presentation • Texture • Disinfect • Unhealthy • Vitamins • Nutrition • Hygiene • Cross contamination • Storage • Taste • Flavour • Bacteria	• Assess • Improve • Outcome • Test • Effective • Design criteria • Models • Function • Edit • Alter • Develop • Analyse • Fit for purpose • Alternatives • Quality • Functionality

Year 1/2 Curriculum Skills Map

Mechanisms	Textiles and Construction	Food Technology
DESIGN • Design purposeful, functional, appealing products based on a design criteria. • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT. • Describe what they want to do using pictures and words. • Make lists of materials they will need. • Can they think of some ideas of their own? • Can they explain what they are making? • Can they plan an outcome through pictures with labels? **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. • Can they explain their ideas orally? • Can they make a product which moves? • Can they identify the key features of an existing product? • Can they say why they have chosen moving parts? • Do they know how some moving objects work? • Can they use tools safely? • Can they explain which tools are they using and why?	**DESIGN** • Design purposeful, functional, appealing products based on a design criteria. • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT. • Describe what they want to do using pictures and words. • Make lists of materials they will need. • Can they think of some ideas of their own? • Can they explain what they are making? • Can they plan an outcome through pictures with labels? **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 or ingredients according to their characteristics. • Can they arrange pieces of the construction before building? • Can they make a structure/model using different materials? • Can they cut materials using scissors or a knife (often with help)? • Can they join two materials together, often with glue. • Make simple models, not necessarily with a purpose • Can they explain which tools are they using and why? • Can they use tools safely? • Can they select suitable pre-cut fabrics? • Can they join textiles together? • Can they express preferences when choosing fabrics?	**DESIGN** • Design purposeful, functional, appealing products based on a design criteria. • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT. • Describe what they want to do using pictures and words. • Make lists of materials they will need. • Can they explain what they are making? **COOKING AND NUTRITION** • Use the basic principles of a healthy and varied diet to prepare dishes. • Understand where food comes from. • Can they identify healthy and unhealthy meals? • Can they make a meal with a variety of healthy foods in? • Can they understand where food comes from? • Do they now the benefits of fruit and vegetables. • Do they know about basic hygiene and safety.

EVALUATE – Across all modules

- Explore and evaluate a range of existing products
- Evaluate ideas and products against design criteria
- Can they describe the materials using different words?
- Use simple terms to talk about their own and others' work.
- Can they describe how their product works?
- Can they identify successes and next steps to improve?

Year 3/4 Curriculum Skills Map

Mechanisms	Textiles and Construction	Food Technology
DESIGN • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Can they create a final design for their product based on initial ideas and revisions, based on existing ideas? • Can they create a detailed plan considering their target audience, design criteria and intended purpose? • Can they collect and use information to generate ideas? • Can they consider the way the product will be used when planning? • Do they understand designs must meet a range of criteria? • Can they make ongoing sketches and annotations and constraints? • Can they think ahead about the order of their work? **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 products.	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Can they create a final design for their product based on initial ideas and revisions, based on existing ideas? • Can they create a detailed plan considering their target audience, design criteria and intended purpose? • Can they collect and use information to generate ideas? • Can they consider the way the product will be used when planning? • Do they understand designs must meet a range of criteria? • Can they make ongoing sketches, annotations and constraints? • Can they think ahead about the order of their work? **MAKE** • Accurately select from and use a wider range of tools and equipment to perform practical tasks, for example: Cutting; shaping; joining; and finishing • 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. • Can they measure accurately to build effective structures? • Can they experiment with a range of techniques to	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Can they create a final design for their product based on initial ideas and revisions, based on existing ideas? • Can they collect and use information to generate ideas? • Can they think ahead about the order of their work? **COOKING AND NUTRITION** • Use the basic principles of a healthy and varied diet to prepare dishes. • Understand where food comes from. • Can they select their own suitable ingredients when cooking or baking? • Do they present food in an appealing way? • Can they understand and explain safe food storage? • Can they evaluate food by taste, texture, flavour etc? • Can they weigh in grams?

• Can they use a simple circuit and add components to it? • Can they add electricity to create motion or make light? • Can they make a product which uses both electrical and mechanical components? • Do they understand how some properties can be used – e.g. made waterproof? • Can they select and use appropriate equipment and tools accurately and safely?	increase stability in a structure? • Can they use finishing techniques, showing an awareness of audience? (e.g. sanding, varnishing, glazing) • Can they consider which materials are fit for purpose and join them appropriately? Can they join textiles of different types in a range of ways? • Can they choose textiles both for their appearance and also qualities? • Can they begin to use a range of simple stitches?	

EVALUATE – Across all modules

- Investigate and analyse a range of existing products.
- Evaluate ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals have helped shape the world.
- Can they talk about what they like and dislike, giving reasons?
- Can they develop their designs through their own reflection and the evaluation of others?
- Can they carry out tests before making improvements?
- Can they think about their ideas as they progress and make changes to improve their work?
- Can they assess how well their product works in relation to the design criteria and the intended purpose?
- Can they explain how they could improve their design and how their improvement would affect the original outcome?

Year 5/6 Curriculum Skills Map

Mechanisms	Textiles and Construction	Food Technology
DESIGN • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Can they use a range of information to inform their design? • Can they use market research to inform plans? • Can they work within constraints? • Can they justify their plan to someone else? • Can they keep cost constraints in mind when selecting materials in design? • Do they use their knowledge of science and art when designing? • Can they draw scaled diagrams with increasing use of ratio? • Can they calculate the amount of materials needed use this to estimate cost? • Have they considered the use of the product when selecting materials? • Can they make up a prototype first? **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)	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Can they use a range of information to inform their design? • Can they use market research to inform plans? • Can they work within constraints? • Can they justify their plan to someone else? • Can they keep cost constraints in mind when selecting materials in design? • Do they use their knowledge of science and art when designing? • Can they draw scaled diagrams with increasing use of ratio? • Can they calculate the amount of materials needed use this to estimate cost? • Have they considered the use of the product when selecting materials? **MAKE** • Accurately select from and use a wider range of tools and equipment to perform practical tasks, for example: Cutting; shaping; joining; and finishing • 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. • Can they measure and cut out in precise detail, and make sure that finished products are carefully	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Can they consider culture and society in their food choices? • Can they keep cost constraints in mind when selecting ingredients? • Can they calculate the amount of ingredients needed use this to estimate cost? **COOKING AND NUTRITION** • 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. • Can they use proportions when cooking extending beyond doubling and halving recipes? • Can they begin to write their own recipes based on recipes they have previously tried? • Can they make choices/changes to recipes and justify their decision? • Can they modify a recipe and explain why they have changed it? • Can they meet an identified need – e.g. a meal for an older person – by selecting suitable ingredients? • Can they work in a safe and hygienic way?

• Apply their understanding of computing to program, monitor and control products. • Can they create designs including hydraulics and pneumatics when where appropriate? • Can they use different kinds of circuits in their product to improve it? • Can they incorporate a switch into their product? • Can they incorporate hydraulics and pneumatics?	finished? • Can they make separate elements of a model, with improvements where necessary, before combining into the finished article? • Can they produce a simple instruction manual or handbook for their product? • Can they use a range of joining techniques? • Can they choose appropriate tools and materials to ensure that the final product will appeal to the audience? • Can they use a range of tools and equipment with good and effectiveness, within established safety parameters? • Can they consider the audience when choosing textiles? • Can they devise a template or pattern for their product? • Are their measurements accurate enough to ensure precision?	

EVALUATE – Across all modules

- Investigate and analyse a range of existing products.
- Evaluate ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals have helped shape the world.
- How well do they test and evaluate their final product?
- Can they assess and explain whether it is fit for purpose?
- Can they describe and explain what would improve it and why?
- Can they discuss whether different resources have improved their product?
- Can they explain if they need more or different information to make it even better?
- Can they test and evaluate commercial products, understanding how this information supports their own designs?
- Can they evaluate a range of different sources of information such as advertising and handbooks?
- Can they demonstrate that their product is strong and fit for purpose?
- Are they motivated to refine and further improve their product