Rosecroft Primary School – Design and Technology Curriculum: EYFS – Year 6 (2024 / 2025)

Rosecroft Curriculum Intent for Design and Technology

At Rosecroft Primary School we understand the importance of Design and Technology as a subject that allows pupils to design, make and evaluate products to solve real and relevant problems. We have created our Design and Technology curriculum with the intent that pupils will be able use their creativity and imagination to design, make and evaluate in within a variety of contexts, considering their own needs, wants and values.

As pupils progress through our Design and Technology curriculum they acquire a range of practical and theoretical skills and have the opportunity to draw on other areas of the primary curriculum such as Maths, Science, Computing and Art. Our curriculum also gives pupils the opportunity evaluate past and present inventions, gaining a critical understanding of the impact of these designs on the daily life, culture and wellbeing of our nation and the wider world.

EYFS Statutory Framework Design and Technology Related Objectives		
Creating with materials • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function • Share their creations, explaining the process they have used **Develop fine Motor Skills** • Use a range of small tools, including scissors, paint brushes and cutlery • Begin to show accuracy and care when drawing		
Nursery Key content knowledge. *What knowledge children will have at the end of each unit- these will also be used for assessment*		
Autumn	Spring	Summer
Construction Designing and creating stickmen – A project based on 'Stickman' by Julia Donaldson. Creating rockets using junk modelling – linking to space topic.	*Cooking and designing* Making chocolate easter nests- celebrating Easter Projects linked to Billy Goats Gruff: - Building a bridge for the goats to cross the water. - Designing and making rafts for the goats and testing if they are designed for purpose (to float).	*Structure* Designing and creating an underwater sea scene using cardboard and other materials. Creating a bug hotel and constructing a wigwam in the Nursery 'Wild Garden'- linking to mini beast topic.
Key Vocabulary All children to know the meaning of these words by the end of the unit		
Junk modelling, cutting, sticking	Mix, stir, weight, design, attach, strong	Cut, stick, shape, construct
Enrichment Opportunities Trips / visitors/ WOW moments		
RECEPTION Key content knowledge. *What knowledge children will have at the end of each unit- these will also be used for assessment*		
Autumn	Spring	Summer
Construction:	*Structures:*	*Textiles:*

Exploring different methods of joining through junk modelling	Creating models of houses, boats, bridges- linked to storytelling. Exploring materials to construct with and justifying choices.	Shadow puppets, exploring light and dark as well as cutting skills.
Key Vocabulary All children to know the meaning of these words by the end of the unit		
Joining, joints, flange, slot, tab	Construct, build, strengthen	Shape, cut
Enrichment Opportunities Trips / visitors/ WOW moments		

National Curriculum aims:

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

Key Stage 1 National Curriculum Objectives

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

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

Year 1 Key content knowledge. *What knowledge children will have at the end of each unit- these will also be used for assessment*		
Autumn Term	**Spring Term**	**Summer Term**
Mechanisms: **Sliders and leavers** 1. Understand that different mechanisms produce different types of movement. 2. Develop, model and communicate ideas through drawings and mock-ups with card and paper. 3. Select and use appropriate tools to cut, shape and join card and paper. 4. Use simple finishing techniques suitable for the produce they are creating. 5. Explore a range of existing books and products with sliders and levers. 6. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Structures:* **Freestanding structures** 1. Explore a range of existing freestanding structures in their environment. 2. Know how to make freestanding structures stronger, stiffer and more stable. 3. Select new and reclaimed materials to build structures. 4. Select and use appropriate tools and techniques. 5. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Food:* **Preparing fruit and vegetables** 1. Understand where fruit and vegetables come from. 2. Generate initial ideas by investigating a variety of fruit and vegetables. 3. Use simple utensils and equipment to peel, cut, slice, squeeze, grate and chop safely. 4. Select from a range of fruit and vegetables according to characteristics (taste, colour, texture) 5. Understand the basic principles of a healthy and varied diet.
Key Vocabulary All children to know the meaning of these words by the end of the unit		
Mechanism, lever, slider, slot, guide	Freestanding structure, frame structure, stability, buttress, brick bonding	Fruit, vegetable, nutrients, knife, peeler, juicer
Enrichment Opportunities Trips / visitors/ WOW moments		

YEAR 2

Key Stage 1 National Curriculum Objectives

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

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

Year 2 Key content knowledge. *What knowledge children will have at the end of each unit- these will also be used for assessment*		
Autumn Term	**Spring Term**	**Summer Term**
Mechanisms: **Wheels and axles** 1. Explore and use wheels, axles and axle holders. 2. Distinguish between fixed and freely moving axles. 3. Explore and evaluate a range of products with wheels and axles. 4. Select appropriate tools and materials according to their characteristics and performance. 5. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Food:* **Preparing fruit and vegetables** 1. Understand where fruit and vegetables come from. 2. Generate initial ideas by investigating a variety of fruit and vegetables. 3. Use simple utensils and equipment to peel, cut, slice, squeeze, grate and chop safely. 4. Select from a range of fruit and vegetables according to characteristics (taste, colour, texture) 5. Understand the basic principles of a healthy and varied diet. 6. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Textiles:* **Templates joining techniques** 1. Explore different ways to use templates to create simple patterns. 2. Explore and evaluate a range of joining techniques. 3. Explore and evaluate finishing techniques. 4. Evaluate a range of existing textile products relevant to the project. 5. Select from and use textiles according to their characteristics. 6. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.
Key Vocabulary All children to know the meaning of these words by the end of the unit		
Axles, axle holder, chassis, friction, dowel	Ingredients, tasting, healthy diet, texture, appearance	Template, seam, applique, sew, mock- up
Enrichment Opportunities Trips / visitors/ WOW moments		

YEAR 3 Key Stage 2 National Curriculum Objectives
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 • 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.

Year 3 Key content knowledge. *What knowledge children will have at the end of each unit- these will also be used for assessment*		
Autumn Term	**Spring Term**	**Summer Term**
Structures: **Shell structures** 1. Assemble and evaluate 3-D shapes using nets. 2. Create a net for a 3-D shape. 3. Explore methods of stiffening and strengthening. 4. Evaluate a range of existing shell structures including stiffening and strengthening methods used. 5. Select appropriate materials for measuring, marking, cutting, scoring, shaping and assembling with some accuracy. 6. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Food:* Healthy and varied diet 1. Grate, spread and cut using bridge and claw technique. 2. Investigate and evaluate existing products using sensory evaluations. 3. Understand that taste is not the same as eating. 4. Plan the main stages of a recipe, listing appropriate ingredients, utensils and equipment. 5. Explore a range of fresh and processed ingredients, knowing whether they are grown, reared, caught or produced. 6. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Textiles:* **2D shape to 3D product** 1. Understand how to securely join two pieces of fabric together by exploring joining techniques. 2. Understand the need for patterns and seam allowance. 3. Select appropriate tools, fabrics and fastenings according to characteristics and aesthetic qualities. 4. Explore and evaluate a variety of textile products. 5. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.
Key Vocabulary All children to know the meaning of these words by the end of the unit		
Net, shell structure, front, edge, score	Appearance, sensory evaluation, preference, processed food, texture	Fastening, seam allowance, aesthetics, fabrics
Enrichment Opportunities Trips / visitors/ WOW moments		

YEAR 4 Key Stage 2 National Curriculum Objectives
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 • 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

Year 4 Key content knowledge. *What knowledge children will have at the end of each unit- these will also be used for assessment*		
Autumn Term	**Spring Term**	**Summer Term**
Mechanical systems: **Levers and linkages** 1. Understand how to use lever and linkage mechanisms. 2. Distinguish between fixed and loose pivots. 3. Explore and evaluate books and other products with levers and linkages. 4. Select appropriate tools to cut, shape and join card. 5. Explore reciprocating and oscillating movements. 6. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Electrical Systems:* **Simple circuits and switches** 1. Explore and evaluate a range of existing battery powered products. 2. Explore how and why connections need to be made secure. 3. Explore handmade and commercial switches, bulbs and buzzers. 4. Apply understanding of computing to program and control their products. 5. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Food:* **Healthy and varied diet** 1. Grate, spread and cut using bridge and claw technique. 2. Investigate and evaluate existing products using sensory evaluations. 3. Understand that taste is not the same as eating. 4. Plan the main stages of a recipe, listing appropriate ingredients, utensils and equipment. 5. Explore a range of fresh and processed ingredients, knowing whether they are grown, reared, caught or produced. 6. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.
Key Vocabulary All children to know the meaning of these words by the end of the unit		
Lever, linkage, loose pivot, fixed pivot, mechanism	Circuit, switch, conductor, insulator, system	Hygienic, grown, reared, caught, processed
Enrichment Opportunities Trips / visitors/ WOW moments		

YEAR 5 Key Stage 2 National Curriculum Objectives
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

- 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

Year 5

Key content knowledge.

What knowledge children will have at the end of each unit- these will also be used for assessment

Autumn Term	Spring Term	Summer Term
Structures: **Frame structures** 1. Understand how to strengthen, stiffen and reinforce 3-D frameworks. 2. Understand how to join sections of frame materials together. 3. Develop a simple design specification to guide the development of their ideas, taking into account constraints. 4. Explore concept of triangulation to create rigidity. 5. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Food:* **Healthy and varied diet** 1. Know how to use utensils and equipment including heat sources to prepare cooked food. 2. Understand about seasonality in relation to food products and the source of different food products. 3. Explore techniques related to their product such as mixing to combine, rubbing in to mix fat or kneading dough. 4. Write a step-by-step recipe including list of ingredients, equipment and utensils needed to accurately measure and combine ingredients. 5. Carry out sensory evaluations. 6. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Electrical Systems:* **More complex switches and circuits** 1. Explore different types of switches including micro, push to break, push to make, reed switch, tilt, toggle and light dependent sensors. 2. Write a sequence of instructions where a decision is made. 3. Use a 'control language' or create a flowchart to produce instructions. 4. Apply understanding of electrical systems and computing to build, program, monitor and control products. 5. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.

Key Vocabulary

All children to know the meaning of these words by the end of the unit

Strengthen, stiffen, joints	Knead, dough, rubbing in, yeast, baking	Open switch, closed switch, computer control input, switch, sensor
Enrichment Opportunities Trips / visitors/ WOW moments		

YEAR 6 Key Stage 2 National Curriculum Objectives
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

- 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

Year 6

Key content knowledge.

What knowledge children will have at the end of each unit- these will also be used for assessment

Autumn Term	Spring Term	Summer Term
Textiles: Combining different fabric shapes 1. Know that a 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. 2. Explore appropriate strengthening, stiffening and reinforcing of fabrics. 3. Explore fasteners such as zips, Velcro, clasps, toggles, ties, buttons and press studs. 4. Explore different types of stitching such as stem, satin, chain and lazy daisy 5. Finish products with embroidery, applique or tie dye.	*Mechanical Systems:* Pulleys or gears 1. Understand that mechanical and electrical systems have an input, process and an output. 2. Understand that gears and pulleys can be used to speed up, slow down, or change the direction of movement. 3. Carry out surveys and questionnaires to generate ideas. 4. Formulate a step-by-step plan and select from a range of tools and equipment. 5. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.	*Food:* Celebrating culture and seasonality 1. Know how to use utensils and equipment including heat sources to prepare cooked food. 2. Understand about seasonality in relation to food products and the source of different food products. 3. Explore techniques related to their product such as mixing to combine, rubbing in to mix fat or kneading dough. 4. Write a step-by-step recipe including list of ingredients, equipment and utensils needed to accurately measure and combine ingredients.

6. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.		5. Carry out sensory evaluations using simple rankings, rating tables and diagrams. 6. Evaluate their design by exploring how well it works in relation to the purpose, user and criteria.
Key Vocabulary All children to know the meaning of these words by the end of the unit		
Tacking, stitching, tie dye, finishing names of fastenings	Pulley, gear, drive belt, driver, follower, spindle	Bran, endosperm, germ, unleavened bread, wholemeal
Enrichment Opportunities Trips / visitors/ WOW moments		