Design and Technology

at Grove Church of England Primary

Revised 2026

LONG TERM PLAN OF KNOWLEDGE AND SKILLS

Statement of Intent

"Design and Technology should be the subject where Mathematical brainboxes and Science whizz kids turn their bright ideas into useful projects."

– James Dyson

The intent of our DT offer is to provide a curriculum which is accessible to all and that is rich with opportunities for construction, cooking and textiles. As a result, every pupil will;

❖ Develop their creative, technical and practical expertise needed to perform every-day tasks confidently and to participate successfully in an increasingly technological world

❖ Build and apply skills to design and make high-quality proto-types and products for a wide range of uses.

❖ 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 We aim to provide a rigorous, inspiring, practical DT curriculum supported by cross-curricular links. Projects will build on previous learning and help to form a repertoire of skills, knowledge and understanding.

❖ Explore and understand the school values of Love, Respect and Resilience through their DT work and through the work of others.

Implementation

We teach the National Curriculum and the EYFS framework, supported by a clear skills and knowledge progression. This ensures that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children. It is important that the children develop progressive skills of a designer and critique throughout their time at Grove CE primary School and do not just learn about the work of others. Through the following, we aim to provide a rich and broad experience in the study of Design and Technology.

Planning and Lesson

From the long-term overview, teachers will plan a sequence of lessons using knowledge, skills and progression. Teachers aim to provide a cross-curricular approach to develop a deeper understanding and a 'real life' scenario to the project. Lessons are planned using a range of technical skills and enquiry which builds on the previous year's learning. Pupils are encouraged to learn from famous designers and take inspiration from them and the world around them. In developing their design and technology skills, we present projects in the form of a question to spark intrigue.

Enhancements

We ensure that every pupil, regardless of SEN(D) or ability, is able to participate in projects and access the curriculum. The hands-on experiences help pupils to build up their design and technology skills independently rather than simply learning from observation. For example, from a young age we expect our pupils to be safely cutting up wood and food using age-appropriate tools with just teacher supervision and modelling.

Assessment: FS Pupils are assessed against the EYFS Framework. Pupils in years 1-6 are assessed against the criteria in our progression and skills document. Pupils are assessed using the following criteria: B=Working well below the age-related expectations; WTS= Working towards the age-related expectations; ARE= Working at age-related expectations and GD= working at greater depth (above the age-related expectations)

Impact

By the time our pupils leave us in Year 6, we aim for them to have;

- ❖ Gained knowledge of famous designers and critiqued their work
- ❖ Developed a repertoire of design and technology skills, knowledge and understanding
- ❖ Gained a solid understanding of nutrition and learnt how to cook for a healthy lifestyle
- ❖ Learnt to plan, construct and evaluate their own project

	Term 2	Term 4	Term 6
EYFS	To explore joining mixed materials	To taste new food	To build with a purpose
Year 1	Free standing structures	**Preparing fruit and vegetables**	Sliders and levers (mechanisms)
Year 2	Mechanisms – wheels and axels	Creating pizzas	**Templates and joining - textiles**
Year 3	Textiles 2D shapes to 3D product	Food – healthy and varied diet	Shell structures (CAD)
Year 4	Mechanical systems – levers and linkages	Pneumatics	**Simple circuits and switches**
Year 5	**Combining different fabric shapes**	Food – celebrating seasonality and culture	Frame structures
Year 6	Mechanical systems - cams	Pulleys or gears	Electrical systems – monitoring and control

EYFS

		Knowledge	Skills	Key Vocabulary
National Curriculum: Prior Learning: Future Learning: British values: SMSC:	**Autumn** **Unit: To explore joining mixed materials**	• Show curiosity about objects, events and people • Questions why things happen • Engage in open-ended activity • Thinking of ideas • Find ways to solve problems / find new ways to do things / test their ideas • Use senses to explore the world around them • Create simple representations of events, people and objects • Planning, making decisions about how to approach a task, solve a problem and reach a goal • Checking how well their activities are going • Changing strategy as needed • Reviewing how well the approach worked	• Choose the resources they need for their chosen activities • Handle equipment and tools effectively • Children know the importance for good health of a healthy diet • They safely use and explore a variety of materials, tools and techniques, experimenting with • colour, design, texture, form and function. • 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	planning, investigating, design, evaluate, make, cut, fold, join, fix, structure, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, circle, triangle, square, rectangle, cuboid, cube, cylinder, tools, fabrics and components, template, pattern pieces, join, decorate, finish
	Christmas card	• To know that making a simple single cut can make a card pop up	• To choose resources they need for their chosen card • Handle equipment and tools effectively • Children to make a single cut v-fold	Lever, fulcrum, load, push, pull, pop-up, fold, stencil, stamping,
National Curriculum: Prior Learning: Future Learning: British values: SMSC:		**Knowledge**	**Skills**	**Vocabulary**
	Spring **Food – To taste new food**	• Show curiosity about objects, events and people • Use senses to explore the world around them • Know that food comes from different places	• Choose the resources they need for their chosen activities • Handle equipment and tools effectively • Children know the importance for good health of a healthy diet • They safely use and explore a variety of materials, tools and techniques, experimenting with • colour, design, texture, form and function. • Children use what they have learnt about media and materials in original ways, thinking • about uses and purposes. • They represent their own ideas, thoughts	fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients,

			and feelings through design and technology	
National Curriculum: Prior Learning: Future Learning: British values: SMSC:		**Knowledge**	**Skills**	**Vocabulary**
	Summer **Unit: To build with a purpose (link to topic)**	• Show curiosity about objects, events and people • Questions why things happen • Engage in open-ended activity • Thinking of ideas • Find ways to solve problems / find new ways to do things / test their ideas • Use senses to explore the world around them • Create simple representations of events, people and objects • Planning, making decisions about how to approach a task, solve a problem and reach a goal • Checking how well their activities are going • Changing strategy as needed • Reviewing how well the approach worked	• Choose the resources they need for their chosen activities • Handle equipment and tools effectively • Children know the importance for good health of a healthy diet • They safely use and explore a variety of materials, tools and techniques, experimenting with • colour, design, texture, form and function. • 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	planning, investigating, design, evaluate, make, cut, fold, join, fix, structure, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, circle, triangle, square, rectangle, cuboid, cube, cylinder, tools, fabrics and components, template, pattern pieces, join, decorate, finish

Year 1

Term 1	Knowledge	Small steps
Autumn **Unit: Structures – Free standing structures** National Curriculum: **Prior Learning:** Exploring joining materials (EYFS) **Future Learning:** Shell structures (Y3) British values: SMSC:	**Structures** • Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project. **Generating ideas** • Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through own experiences. • Develop and communicate these ideas through talk and drawings and mock ups where relevant. **Making** • Select and use simple utensils, tools and equipment to perform a job e.g. peel, cut, slice, squeeze, grate and chop safely; marking out, cutting, joining and finishing; cut, shape and join paper and card. • Select from a range of ingredients and materials according to their characteristics to create a chosen product. **Evaluating** • Taste, explore and evaluate a range of products to determine the intended user's preferences for the product Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose. Vocabulary planning, investigating, design, evaluate, make, user, purpose, ideas, product, cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish	
	Christmas card To know that making a simple single cut can make a card pop up • To use simple tools and equipment to perform a job To select from a range of materials and resources according to their characteristics to create a chosen product Lever, fulcrum, load, push, pull, pop-up, fold, stencil, stamping,	

Term 2	Knowledge	Skills
Spring **Unit: To prepare fruit and vegetables** National Curriculum: **Prior Learning:** To taste new foods (EYFS) **Future Learning:** Creating pizza (Y2) British values: SMSC:	• Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, • including how fruit and vegetables are part of The Eatwell plate. • Know and use technical and sensory vocabulary relevant to the project. **Generating ideas** • Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through own experiences. • Develop and communicate these ideas through talk and drawings and mock ups where relevant. **Making** • Select and use simple utensils, tools and equipment to perform a job e.g. peel, cut, slice, squeeze, grate and chop safely; marking out, cutting, joining and finishing; cut, shape and join paper and card. • Select from a range of ingredients and materials according to their characteristics to create a chosen product. **Evaluating** • Taste, explore and evaluate a range of products to determine the intended user's preferences for the product Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose. Vocabulary Fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients,	

Term 3	**Knowledge**	**Small steps**
Summer **Unit: Mechanisms – sliders and levers** **Sliding pictures/Split pin clocks** National Curriculum: **Prior Learning:** To build with a purpose (EYFS) **Future Learning:** Mechanisms (Y2) British values: SMSC:	• Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project. • Explore and use sliders and levers. • Understand that different mechanisms produce different types of movement. Know and use technical vocabulary relevant to the project. **Generating ideas** • Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through own experiences. • Develop and communicate these ideas through talk and drawings and mock ups where relevant. **Making** • Select and use simple utensils, tools and equipment to perform a job e.g. peel, cut, slice, squeeze, grate and chop safely; marking out, cutting, joining and finishing; cut, shape and join paper and card. • Select from a range of ingredients and materials according to their characteristics to create a chosen product. **Evaluating** • Taste, explore and evaluate a range of products to determine the intended user's preferences for the product Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose. Vocabulary cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards	

Year 2

Term 1	Knowledge	Small steps
Autumn **Unit: Mechanisms – wheels and axles** **To create models with wheels and axels** **National Curriculum:** **Prior Learning:** Mechanisms (Y1) **Future Learning:** Mechanical systems (Y4) **British values:** **SMSC**:	• Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project. • Explore and use wheels, axles and axle holders. • Distinguish between fixed and freely moving axles. • Know and use technical vocabulary relevant to the project. **Generating ideas – designing** • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through talking, mock-ups and drawings. **Making** • Plan by suggesting what to do next. • Select and use tools, equipment, skills and techniques to perform practical tasks, explaining their choices. • Select new and materials, components, reclaimed materials and construction kits to build and create their products. • Use simple finishing techniques suitable for the products they are creating. **Evaluating** • Explore a range of existing products related to their design criteria. Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. Vocabulary investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function, cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic Christmas card: To know that making a triple cut can make a card pop up • To choose resources they need for their chosen card • Handle equipment and tools effectively Use simple finishing techniques suitable for the products they are creating. Vocab: Lever, fulcrum, load, push, pull, pop-up, fold, stencil, stamping,	

Term 2	**Knowledge**	**Small steps**
Spring **Unit: Creating pizzas** National Curriculum: **Prior Learning:** Preparing fruit and vegetables (Y1) **Future Learning:** Healthy and varied diet (Y3) British values: SMSC:	• Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell plate. Know and use technical and sensory vocabulary relevant to the project. **Generating ideas – designing** • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through talking, mock-ups and drawings. **Making** • Plan by suggesting what to do next. • Select and use tools, equipment, skills and techniques to perform practical tasks, explaining their choices. • Select new and materials, components, reclaimed materials and construction kits to build and create their products. • Use simple finishing techniques suitable for the products they are creating. **Evaluating** • Explore a range of existing products related to their design criteria. Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. **Vocab** investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function, fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients	

Term 3	**Knowledge**	**Small steps**
Summer **Unit: Textiles – Templates and joining** National Curriculum: **Prior Learning:** Template and joining (Y2) **Future Learning:** Textiles (Y3) British values: SMSC:	• Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. • Explore different finishing techniques • Know and use technical vocabulary relevant to the project. **Generating ideas – designing** • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through talking, mock-ups and drawings. **Making** • Plan by suggesting what to do next. • Select and use tools, equipment, skills and techniques to perform practical tasks, explaining their choices. • Select new and materials, components, reclaimed materials and construction kits to build and create their products. • Use simple finishing techniques suitable for the products they are creating. **Evaluating** • Explore a range of existing products related to their design criteria. Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. Vocab: investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish	

Year 3

Term 1	Knowledge	Small steps
Autumn **Unit: Textiles 2D shape to 3D product** National Curriculum: **Prior Learning:** Templates and joining (Y2) **Future Learning:** Combining different fabric shapes (Y5) British values: SMSC:	• Know how to strengthen, stiffen and reinforce existing fabrics. • Understand how to securely join two pieces of fabric together. • Understand the need for patterns and seam allowances. Know and use technical vocabulary relevant to the project. **Generating ideas, developing** • Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, such as web-based recipes, to develop **Making** • Plan the main stages of making. • Select from and use a range of appropriate utensils, tools and equipment with some accuracy related to their product. • Select from and use finishing techniques suitable for the product they are creating. **Evaluating** • Investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project. • Test their product against the original design criteria and with the intended user. Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. Vocab: user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing, fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance	
	Christmas card To know that making multiple cuts can make a card pop up • To choose resources they need for their chosen card • Handle equipment and tools effectively Use simple finishing techniques suitable for the products they are creating. Vocab Lever, fulcrum, load, push, pull, pop-up, fold, stencil, stamping,	

Term 2	**Knowledge**	**Small steps**
Spring **Unit: Food** National Curriculum: **Prior Learning:** Creating pizzas (Y2) **Future Learning:** Seasonality and culture (Y5) British values: SMSC:	• Know how to use appropriate equipment and utensils to prepare and combine food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately. **Generating ideas, developing** • Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, such as web-based recipes, to develop **Making** • Plan the main stages of making. • Select from and use a range of appropriate utensils, tools and equipment with some accuracy related to their product. • Select from and use finishing techniques suitable for the product they are creating. **Evaluating** • Investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project. • Test their product against the original design criteria and with the intended user. Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. **Vocab:** user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing, name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	

Term 3	**Knowledge**	**Small steps**	
Summer **Unit: Shell structures using computer aided design** National Curriculum: **Prior Learning:** Free standing structures (Y1) **Future Learning:** Frame structures (Y5) British values: SMSC:	• Develop and use knowledge of how to construct strong, stiff shell structures. • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Know and use technical vocabulary relevant to the project. **Generating ideas, developing** • Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, such as web-based recipes, to develop **Making** • Plan the main stages of making. • Select from and use a range of appropriate utensils, tools and equipment with some accuracy related to their product. • Select from and use finishing techniques suitable for the product they are creating. **Evaluating** • Investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project. • Test their product against the original design criteria and with the intended user. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. Vocab: user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing, mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating		

Year 4

Term 1	Knowledge	Small steps
Autumn **Unit: Mechanical systems – levers and linkages** National Curriculum: **Prior Learning:** Mechanisms (Y1) **Future Learning:** Pulleys or gears (Y6) British values: SMSC:	• Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. • Know and use technical vocabulary relevant to the project. • Know how to strengthen, stiffen, and reinforce. • Know and use technical vocabulary relevant to the project. **Generating ideas/designing** • Generate and clarify ideas through discussion with peers to develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. **Making** • Order the main stages of making. • Select and use appropriate tools to measure, mark out, cut, score, shape and combine with some accuracy related to their products. • Explain their choice of materials according to functional properties and aesthetic qualities. • Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties. **Evaluating** • Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used. • Test and evaluate their own products against design criteria and the intended user and purpose. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.	

	Vocab: evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations, shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision,	
	Christmas card To know that making multiple cuts can make a card pop up • To choose resources they need for their chosen card • Handle equipment and tools effectively Use simple finishing techniques suitable for the products they are creating. Vocab Lever, fulcrum, load, push, pull, pop-up, fold, stencil, stamping,	

Term 2	Knowledge	Small steps
Spring **Unit: Mechanical systems – pneumatics** National Curriculum: **Prior Learning:** Mechanisms (Y2) **Future Learning:** Mechanical systems (Y6 British values: SMSC:	• Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. • Develop and use knowledge of how to construct strong, stiff shell structures. • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Know and use technical vocabulary relevant to the project. **Generating ideas/designing** • Generate and clarify ideas through discussion with peers to develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. **Making** • Order the main stages of making. • Select and use appropriate tools to measure, mark out, cut, score, shape and combine with some accuracy related to their products. • Explain their choice of materials according to functional properties and aesthetic qualities. • Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties. **Evaluating** • Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used. • Test and evaluate their own products against design criteria and the intended user and purpose. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. Vocab evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations, name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	

Term 3	Knowledge	Small steps
Summer **Unit: Simple circuits and switches** National Curriculum: **Prior Learning:** Shell structures (Y3) **Future Learning:** Electrical systems (Y6) British values: SMSC:	• Understand and use electrical systems in their products linked to science coverage. • Apply their understanding of computing to program and control their products. Know and use technical vocabulary relevant to the project. **Generating ideas/designing** • Generate and clarify ideas through discussion with peers to develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. **Making** • Order the main stages of making. • Select and use appropriate tools to measure, mark out, cut, score, shape and combine with some accuracy related to their products. • Explain their choice of materials according to functional properties and aesthetic qualities. • Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties. **Evaluating** • Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used. • Test and evaluate their own products against design criteria and the intended user and purpose. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. **Vocab** evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations, series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch,	

	battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device	

Year 5

Term 1	Knowledge	Small steps
Autumn **Unit: Combining different fabric shapes** National Curriculum: **Prior Learning:** Textiles (Y3) **Future Learning:** KS3 British values: SMSC:	• Produce a 3-D textile product from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Understand how fabrics can be strengthened, stiffened and reinforced where appropriate. Know and use technical vocabulary relevant to the project. **Generating ideas, designing** • Generate innovative ideas through research including surveys, interviews and questionnaires and discussion with peers to develop a design brief and criteria for a design specification. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. and, where appropriate, computer-aided design **Making** • Produce detailed lists of equipment and fabrics relevant to their tasks • Write a step-by-step plan, including a list of resources required. • Select from and use, a range of appropriate utensils, tools and equipment accurately to measure and combine appropriate ingredients, materials and resources. **Evaluating** • Investigate and analyse products linked to their final product. • Compare the final product to the original design specification and record the evaluations • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work Vocab design decisions, functionality, authentic, user, purpose, design specification, design	

	brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings,	
	Christmas card To know that making multiple cuts can make a card pop up • To choose resources they need for their chosen card • Handle equipment and tools effectively Use simple finishing techniques suitable for the products they are creating. Vocab Lever, fulcrum, load, push, pull, pop-up, fold, stencil, stamping,	

Term 2	**Knowledge**	**Small steps**
Spring **Unit: Celebrating culture and seasonality** National Curriculum: **Prior Learning:** Healthy and varied diet (Y3) **Future Learning:** KS3 British values: SMSC:	• Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products. Know and use relevant technical and **Generating ideas, designing** • Generate innovative ideas through research including surveys, interviews and questionnaires and discussion with peers to develop a design brief and criteria for a design specification. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. and, where appropriate, computer-aided design **Making** • Produce detailed lists of equipment and fabrics relevant to their tasks • Write a step-by-step plan, including a list of resources required. • Select from and use, a range of appropriate utensils, tools and equipment accurately to measure and combine appropriate ingredients, materials and resources. **Evaluating** • Investigate and analyse products linked to their final product. • Compare the final product to the original design specification and record the evaluations • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work Vocab design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble	

Term 3	**Knowledge**	**Small steps**
Summer **Unit: Structures – frame structures** National Curriculum: **Prior Learning:** Shell structures (Y3) **Future Learning:** KS3 British values: SMSC:	• Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project. • Understand how to strengthen, stiffen and reinforce 3-D frameworks. Know and use technical vocabulary relevant to the project. **Generating ideas, designing** • Generate innovative ideas through research including surveys, interviews and questionnaires and discussion with peers to develop a design brief and criteria for a design specification. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. and, where appropriate, computer-aided design **Making** • Produce detailed lists of equipment and fabrics relevant to their tasks • Write a step-by-step plan, including a list of resources required. • Select from and use, a range of appropriate utensils, tools and equipment accurately to measure and combine appropriate ingredients, materials and resources. **Evaluating** • Investigate and analyse products linked to their final product. • Compare the final product to the original design specification and record the evaluations • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work Vocab design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype, pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output	

Year 6

		Knowledge	Skills	Key Vocabulary
National Curriculum: **Prior Learning:** Mechanical systems (Y4) **Future Learning:** KS3 British values: SMSC:	**Autumn** **Unit: Mechanical systems Cams**	• Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Know and use technical vocabulary relevant to the project. • Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. Know and use technical vocabulary relevant to the project.	**Generating ideas, designing** • Use research using surveys, interviews, questionnaires and web-based resources. to develop a design specification for a range of functional products. • Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. • Generate and develop innovative ideas and share and clarify these through discussion. • Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. **Making** • Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components • Competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials, and securely connect electrical components to produce reliable, functional products. • Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating**	frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype

			• Continually evaluate and modify the working features of the product to match the initial design specification. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • Test the system to demonstrate its effectiveness for the intended user and purpose.	
	Christmas card	• To know that making multiple cuts can make a card pop up	• To choose resources they need for their chosen card • Handle equipment and tools effectively • Use simple finishing techniques suitable for the products they are creating.	Lever, fulcrum, load, push, pull, pop-up, fold, stencil, stamping,
National Curriculum: **Prior Learning:** Pneumatics (Y4) **Future Learning:** KS3 British values: SMSC:		**Knowledge**	**Skills**	**Vocabulary**
	Spring **Unit: Pulleys or gears**	• Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project. • Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Know and use technical vocabulary relevant to the project.	**Generating ideas, designing** • Use research using surveys, interviews, questionnaires, and web-based resources. to develop a design specification for a range of functional products. • Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. • Generate and develop innovative ideas and share and clarify these through discussion. • Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.	design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype, pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output

			Making • Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components • Competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials, and securely connect electrical components to produce reliable, functional products. • Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating** • Continually evaluate and modify the working features of the product to match the initial design specification. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • Test the system to demonstrate its effectiveness for the intended user and purpose.	
National Curriculum: **Prior Learning:** Simple circuits and switches (Y4) **Future Learning:** KS3		**Knowledge**	**Skills**	**Vocabulary**
	Summer **Unit: Electrical systems – monitoring and control**	• Understand and use electrical systems in their products linked to science coverage. • Apply their understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project.	**Generating ideas, designing** • Use research using surveys, interviews, questionnaires and web-based resources. to develop a design specification for a range of functional products. • Develop a simple design specification to guide the development of	reed switch, toggle switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire,

British values: SMSC:			their ideas and products, taking account of constraints including time, resources and cost. • Generate and develop innovative ideas and share and clarify these through discussion. • Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. **Making** • Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components • Competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials, and securely connect electrical components to produce reliable, functional products. • Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating** • Continually evaluate and modify the working features of the product to match the initial design specification. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • Test the system to demonstrate its effectiveness for the intended user and purpose.	insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit