Greenside Primary School
Design Technology (DT) Progression Framework

Curriculum Intent

Community	Resilience	Creativity	Aspiration	Diversity

The DT curriculum at Greenside aims for children to develop:

- Significant levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes.
- An excellent attitude to learning and independent working.
- The ability to use time efficiently and work constructively and productively with others.
- The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- A thorough knowledge of which tools, equipment and materials to use to make their products.
- The ability to apply mathematical knowledge.
- The ability to manage risks exceptionally well to manufacture products safely and hygienically.
- A passion for the subject and knowledge of, up-to-date technological innovations in materials, products and systems.

Implementation

The DT curriculum at Greenside Primary school has been carefully considered to ensure coverage of all the national curriculum objectives whilst linking back to our locality and school context. As a one a half form entry school, we have carefully devised a 2-year cycle to ensure coverage of key substantive knowledge. The aim is that over the 2 years, pupils will gain a deeper understanding of the substantive knowledge and disciplinary skills they need as Designers and Engineers.

All DT units have a corresponding medium-term plan, which maps substantive knowledge, disciplinary skills and vocabulary on a lesson-by-lesson basis to ensure progression throughout each unit. Each unit has clear end points mapped and which knowledge we want children to be able to recall and retain.

Each lesson within the sequence will focus on a particular learning 'lense' or key concept. These concepts run through school and enable children and staff to relate back to the conceptual knowledge from previous learning. These 'lenses' are then mapped and revisited at regular intervals.

In order for children to know more and remember more in each area of DT studied, the lesson sequence is structured so that prior learning is considered and opportunities for revision and retrieval of key skills and techniques are built into lessons through the 'Fab 5' activities. The Fab 5 is a 5-minute retrieval task that takes place at the start of lessons that often revisit the key substantive knowledge from previous learning in the sequence, year or from another phase completely.

Through these lessons, we intend to inspire pupils and practitioners to develop a love of Design Technology and see how it has shaped the world they live in. It is important for children to understand that the world around them has been planned, designed and made. We want to encourage children to problem solve, invent and create.

Each unit has a designated 'end point' and summaries of the children's learning will be evident from the work they have produced throughout the unit, which is revisited regularly. These form the basis of our assessment.

The essential knowledge, highlighted in yellow, has been identified for each unit learning and forms the focus of teacher assessment.

The Design Technology Curriculum and Provision for Pupils with SEND

At Greenside Primary School, we believe all pupils should have the opportunity to learn to the best of their capabilities through a broad and balanced, inclusive curriculum. For our pupils with a Special Educational Need, we scaffold their learning to provide them with the strongest opportunities for success in our school. We believe firmly in the SEND Code of Practice's statement that 'every teacher is a teacher of SEN' and that our pupils with SEN should be provided with the same opportunities as their peers in our school. This means that, with their learning being personalised to meet their areas of need, they feel included in the classroom and make progress year on year. Reasonable adjustments are made in all lessons to enable this.

The DT curriculum can be adapted to meet the needs of children with SEND in the following ways:

Universal Support across school for all subjects
Word Banks for pre-learning and to support during topics and themes
Cutting and Sticking Key Words on to work as prompts
Print out portions of work and learning objectives to minimise writing
Coloured Paper or recycled paper to minimise visual stress & background colours of the whiteboard is considered for pupils with dyslexia.
Breaking down lessons into short, manageable chunks
Mixed ability groups – using peers as support and role models
Adult assistance nearby/ Using another student as a reader/support
Now/Next or Visual Timetables – class and individual/ My Turn/Your Turn
Knowledge map/Mind Maps
Printing work larger and in smaller chunks
Cloze passages/activities to check learning
Draw answers or explanations / Actions – telling the story of a lesson
Fidget toys available/ Cushions for seats – wobble and wedge cushions - Access to standing desks
Pupils with hearing impairments/visual impairments are positioned close to the whiteboard to be able to access.
Word lists of key vocabulary for pre-learning and as prompts
A safe/quiet space in or Cloud Room
Keeping instructions short and one at a time

Universal Support specific to subject
Use systems such as racks so that items such as pencils and scissors can be found and put away in the right place easily.
Targets made clear for lessons and learning – linked to IPM
Make tasks accessible through pupils using, where appropriate: ‘Specialist equipment, e.g. specialist scissors and cutting tools’ generic aids, frames or adhesives to hold down pupils’ work to surfaces.
A range of specialist aids to be offered where applicable including: jigs to aid cutting, templates, ready-made parts.
Using digital cameras to record each stage of designing and making, then sequencing the photos, can be a useful tool to aid pupils’ memory of the stages of completing the work.
Pencil grippers – variety of pens and pencils
Health and safety Consider the safety of demonstrations. Make sure pupils do not come into contact with materials they are allergic to.
Some pupils will need to use nonvisual means to evaluate different products, to use this information to generate ideas and to become familiar with tools and other equipment.

When planning for Design Technology, class teachers should adapt their lessons where necessary using ideas taken from this list, however, it is important to remember this list is not exhaustive and other adaptations may be needed for children with specific needs.

We also have ‘Continuum of Provision Maps’ for each area of SEND need (e.g. Autism, Cognitive, SEMH, Visual impairment etc).

Breadth of Study

Key Concepts	EYFS	KS1	KS2
Design, Make, Evaluate	❖ Plan and think ahead about how they will explore or play with objects. ❖ 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.	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, such as 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 such as 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.	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, such as 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, such as 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	❖ Build structures. ❖ explore and use mechanisms, such as levers, sliders, wheels and axles.	❖ Build structures, exploring how they can be made stronger, stiffer and more stable. ❖ explore and use mechanisms, such as levers, sliders, wheels and axles, in their products.	❖ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. ❖ understand and use mechanical systems in their products, such as gears, pulleys, cams, levers and linkages. ❖ understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors. ❖ apply their understanding of computing to programme, monitor and control their products.
Cooking and Nutrition	❖ Understand where food comes from. ❖ Show some understanding of how food can change (e.g. melting, freezing, baking).	❖ Use the basic principles of a healthy and varied diet to prepare dishes. ❖ understand where food comes from.	❖ 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.

Long Term Plans

<table>
<tr><th>EYFS</th><th></th><th>KS1</th><th>LKS2</th><th>UKS2</th></tr>
<tr><td rowspan="2">During Reception pupils access the DT curriculum through the continuous provision, as outlined in the EYFS Curriculum Map.

This is enhanced through the planning of specific projects which link to the learning vehicles:
• Halloween Biscuits (Cooking and Nutrition)
• Diva Lamps/Christmas baubles (clay)
• Latka Pancakes (Cooking and nutrition)
• Rainbow Fish and Junk Model Boats
• Growing Vegetables</td><td>Cycle A</td><td>Spring 1: Mechanics - Fire Engines
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Mechanics
Summer 1: Construction - Pudsey Park
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Construction
Summer 2: Cooking - Picnic Foods
➢ Process (Design/Make/Evaluate)
➢ Techniques
➢ Cooking & Nutrition</td><td>Autumn 2: Materials - Roundhouses
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Construction
Spring 2: Sculpture - Canopic Jars
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Styles and Periods
➢ Visual Language
➢ Sculpture
Summer 1: Materials/Construction - Bird Boxes
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Construction</td><td>Autumn 2: Materials and Construction – Christmas Wreaths
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Construction
Summer 2: Cooking and Nutrition – Biscuit Project (Y5 - Enterprise)
➢ Process (Design/Make/Evaluate)
➢ Techniques
➢ Cooking & Nutrition
Summer 2: Electrical and Electronics – Circuits – Making Games
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Computing/Electronics</td></tr>
<tr><td>Cycle B</td><td>Autumn 1: Textiles - Kites
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Visual Language
➢ Effects
➢ Textiles
Spring 1: Construction: Pudsey Parish Church
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Construction
Spring 2: Cooking - Cutting & Chopping – Fruit Kebabs
➢ Process (Design/Make/Evaluate)
➢ Techniques
➢ Cooking & Nutrition</td><td>Autumn 1: Mechanics (Mechanical Systems) - Roman Catapults
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Mechanics
Spring 2: Cooking & Nutrition - Balanced Diet – Pasta Salad
➢ Process (Design/Make/Evaluate)
➢ Techniques
➢ Cooking & Nutrition
Summer 2: Textiles - Anglo Saxon Purses
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Visual Language
➢ Effects
➢ Textiles</td><td>Autumn 2: Cooking and Nutrition- Caribbean Roti Wraps
➢ Process (Design/Make/Evaluate)
➢ Techniques
➢ Cooking & Nutrition
Spring 1: Textiles – Viking Money Pouches
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Visual Language
➢ Effects
➢ Textiles
Spring 2: Woodwork – Viking Long boats
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Construction
Spring 2: Cooking and Nutrition – Biscuit Project (Y5 - Enterprise)
➢ Process (Design/Make/Evaluate)
➢ Techniques
➢ Cooking & Nutrition
Summer 2: Computing – Micro-bit Coding
➢ Process (Design/Make/Evaluate)
➢ Media and Materials
➢ Techniques
➢ Computing/Electronics</td></tr>
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Progression of DT Knowledge & Vocabulary

Key: Essential Knowledge identified for each unit of learning.

EYFS Knowledge and Vocab Summary				
ELG	**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. • Make use of props and materials when role playing characters in narratives and stories.			
Lense	Cooking and Nutrition	Cooking and Nutrition Construction	Construction	Cooking and Nutrition
Final Piece	**Halloween Biscuits (Cooking and Nutrition)**	**Diva Lamps/Christmas baubles (clay)** **Latka Pancakes (Cooking and nutrition)**	**Rainbow Fish and Junk Model Boats**	**Growing Vegetables**
Substantive Knowledge	• Know that ingredients have to be measured. • Know that a recipe is a set of instructions that we follow when cooking. • Know that ingredients can be combined to create a final product. • Know that ingredients can be combined by mixing, creaming and kneading. • Know that dough can be shaped and cut. • Know that dough can be rolled thinner with a rolling pin. • Know that some food must be cooked before they are eaten. • Know that my hands must be washed before I start cooking.	• Know that clay can be used to create a final product. • Know that clay is an appropriate material for shaping and moulding. • Know that clay can be decorated by in-printing and decorating. • Know that clay can be moulded when wet but turns solid when left out in the air to dry. • Know how to safely use a grater. • Know that a recipe is a set of instructions that we follow when cooking. • Know that food can be cooked using a pan on hob. • Know that oil is used to stop the food from sticking in the pan.	• Know that materials can be attached using a range of joining techniques (sellotape, glues sticks, treasury tags, staplers, PVA glue). • Know that some materials are harder to cut than others. • Know that it is important to choose the correct material when building a boat: know that some materials are waterproof. • Know the main features of a boat: sail, hull.	• Know where our food comes from • Know that some food can be grown in the UK and others can't. • Know that some food starts as a seed. • Know that fruit and vegetables must be washed before they are eaten. • Know that some vegetables need to be cooked before they are eaten.
Disciplinary Knowledge (Skills)	• I can mix ingredients using a spoon. • I can roll dough using a rolling pin and cut shapes using cutters. • I can use an oven with adult support. • I can measure ingredients using cups and scales with support. • I can discuss textures, smells and taste.	• I can manipulate clay using my hands or appropriate tools (rolling pins, cutters). • I can pinch clay to create a 3D feature. • I can use a grater. • I can crack an egg. • I can use an oven with adult support. • I can turn food over in a pan. • I can discuss textures, smells and taste.	• I can cut corrugated card using scissors. • I can choose materials for their properties – such as plastic for boats. • Develop use of tools and media to include staplers, shaped hole punches, PVA glue. • Create collages by gluing different media.	• I can plant a seed and care for it as it grows. • Watering • I can make observations about a growing plant. • I am beginning to show accuracy and care when drawing.
Vocabulary	Mix, combine, bake, oven, temperature, recipe, timer, measure	Mould, pinch, roll, shape, cut, snip,	Cut, collage, PVA glue, join, float, sink, waterproof, water tight	Dig, plant, seed, seedling, water, grow, stem, leaves, flowers, buds,

KS1 Knowledge and Vocab Summary						
	Mechanics: Fire Engines	**Construction: Pudsey Park**	**Cooking: Picnic Foods**	**Textiles: Kites**	**Construction: Pudsey Parish Church**	**Cooking: Cutting & Chopping**
NC	• 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 • 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 • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria • 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.	• 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 • 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 • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria • build structures, exploring how they can be made stronger, stiffer and more stable	• use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from.	• 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 • 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 • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria	• 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 • 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 • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria • 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.	• use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from.
Lense	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Mechanics	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Construction	➢ Process (Design/Make/Evaluate) ➢ Techniques ➢ Cooking & Nutrition	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Visual Language ➢ Effects ➢ Textiles	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Construction	➢ Process (Design/Make/Evaluate) ➢ Techniques ➢ Cooking & Nutrition
Final Piece	Fire Engine	Small world park	Picnic food – Coronation Picnic	Kite	Pudsey Parish Church	Fruit Salad Kebabs
Substantive Knowledge	• Know that sets of wheels and axles are required as moving parts to create the model of a vehicle. • Know that materials such as paint, tissue, paper can be used to cover a model. • Know that it is important to select the appropriate materials to make the key features of the fire engine EG ladders, hoses etc. • Know that some materials cant be covered or attached to in the same way as others.	• Know that the properties of paper and cardboard make it an appropriate material to create a 3D model. • Know how to make things to a simple scale, to ensure my model is realistic. • Know that it is important to design and plan a model to make it purposeful, functional, appealing for themselves and other users, and meets the design criteria. • Know how to select appropriate tools, such as glue stick for joining paper but Sellotape for joining plastic, to ensure joining is robust.	• Know the basic principles of a balanced and varied diet, to ensure a healthy lifestyle. • Know the principles of how to safely chop and slice food using a knife EG – the bridge, the claw, fork secure. • Know the principles of how to safely use an oven to cook food. • Know the basic principles of food hygiene EG handwashing, cleaning surfaces, cleaning equipment, tying long hair up. • Know that food selected to take on a picnic should be able to be eaten cold, packaged to avoid spillages and not food that needs to be kept frozen. • Know that certain foods are seasonal when grown in the UK, but can be grown elsewhere in the world at other times of the year.	• Know that kites are outdoor toys that can be played with on a windy day. • Know that kites were first invented in China and used to be designed around mystical figures. • Know that kites are usually made from polyester, which is lightweight, strong and durable. • Know that kites need a large surface area to catch the wind and make them fly. • Know that kites need a strong structure/bones, such as wooden dowels to create a frame, to help them be stable in the wind. • Know what to use to accurately measure and cut fabric to an appropriate size. • Know the principles of how to safely operate a hot glue gun.	• Know that the properties of paper and cardboard make it an appropriate material to create a 3D model. • Know how to make things to a simple scale, to ensure my model is realistic. • Know that it is important to design and plan a model to make it purposeful, functional, appealing for themselves and other users, and meets the design criteria. • Know that moving parts can be added to a model using levers, sliders and hinges EG A hinge on a door, sliders on windows and sliders to move characters around the base of a model. • Know how to add design features to enhance the look of the finished piece – paint, adding sand for texture on the stone walls.	• Know that some fruit and vegetables grow above the ground and others, known as fruit vegetables grown below the ground. • Know that different fruits and vegetables grown in different conditions, and therefore many foods are imported from foreign countries. • Know the principles of how to safely place fruits and vegetables onto a skewer. • Know the principles of how to safely chop and slice food using a knife EG – the bridge, the claw, fork secure. • Know the basic principles of food hygiene EG handwashing, cleaning surfaces, cleaning equipment, tying long hair up.

Disciplinary Knowledge (Skills)	Materials • Cut materials safely using tools provided. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). Construction • Use materials to practise gluing materials to make and strengthen products. Mechanics • Create products using levers, wheels and winding mechanisms. • Design products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. • Suggest improvements to existing designs. Evaluation • Suggest improvements to existing designs, including evaluating my finished project.	Materials • Cut materials safely using tools provided. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). Construction • Use materials to practise gluing materials to make and strengthen products. Evaluation • Suggest improvements to existing designs, including evaluating my finished project.	Cooking & • Cut, peel or grate ingredients Nutrition safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients. Evaluation • Suggest improvements to existing designs, including evaluating my finished project.	Materials • Cut materials safely using tools provided. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). Textiles • Shape textiles using templates. • Join textiles using running stitch. • Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing). Evaluation • Suggest improvements to existing designs, including evaluating my finished project.	Materials • Cut materials safely using tools provided. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). Construction • Use materials to practise gluing materials to make and strengthen products. Mechanics • Create products using levers, wheels and winding mechanisms. • Design products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. • Explore objects and designs to identify likes and dislikes of the designs. Evaluation • Suggest improvements to existing designs, including evaluating my finished project.	Cooking & Nutrition • Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients.
Vocabulary	Wheels, axle, joining, PVA glue, glue stick, hot glue gun, accessories, coil, moving parts, features, design, evaluate	Design, evaluate, features, equipment, tools, cutting, joining, masking tape, Sellotape, PVA glue, glue stick, glue gun, scale,	Chop, cut, peel, grate, slice, vegetable knife, wooden spoon, mixing bowl, creaming, stirring, combining, designing, evaluate, purpose, audience, consumers, picnic.	Kite, wind resistance, strong, strength, hot glue guns, goggles, melt, frame, fabric, measure, cut, sheers, template	Slider, hinge, walls, stone, brick, strong, windows, levels, floors, stairs, base, card, cardboard, heavy duty, lever, pulley, texture.	Skewer, fruit, names of fruits used, chop, cut, slice, knife, chopping board, pattern, design, evaluate, healthy, balanced.

LKS2 Knowledge and Vocab Summary						
	Materials: Roundhouses	**Sculpture: Canopic Jars**	**Materials: Bird Boxes**	**Cooking & Nutrition: Balanced Diet**	**Mechanics: Mechanical Systems**	**Textiles: Anglo Saxon Purses**
NC	Design • use research and develop design criteria to inform the design of innovative, functional products. • 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	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. 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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 computing to program, monitor and control their products. • 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 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.
Lense	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Construction	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Styles and Periods ➢ Visual Language ➢ Sculpture	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Construction	➢ Process (Design/Make/Evaluate) ➢ Techniques ➢ Cooking & Nutrition	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Mechanics	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Visual Language ➢ Effects ➢ Textiles
Final Piece	Stone Age Round Houses	Clay Canopic Jars	Making wooden bird boxes	A ‘Pleasing Pasta Salad’	Roman Catapult	Anglo Saxon Tool Case

Substantive Knowledge	• Know the principles of how to safely use a saw. • Know that some materials can be combined to make them structurally strong, EG strengthening structures by using supporting beams • Know that cross sectional diagrams show all elevations(sides) to a product. • Know that a design brief outlines a problem that a design will solve and should be referred to throughout the project. • Know the principles of how to safely operate a hot glue gun.	• Know how to safely operate clay tools to cut, mould, score and imprint. • Know that scoring the edges of the clay will produce a stronger joint. • Know that water can be added to clay to make it more pliable. • Know that it is important to smooth the clay to produce a sleek finish. • Know that coil construction (rolling of clay into a long thing sausage like form and winding around an object like a spring) can be used as a method to create a model with height.	• Know the principles of how to safely use a saw. • Know that a design brief outlines a problem that a design will solve and should be referred to throughout the project. • Know that cross sectional diagrams show all elevations(sides) to a product. • Know the principles of how to use a hammer safely. • Know that nails can be used to join two pieces of wood together. • Know that a hammer is used to insert a nail into wood. • Know how to operate a tape measure to accurately measure wood. • Know how to safely operate a saw station.	• Know that pasta is a staple food, typical of Italian cuisine. • Know that pasta is usually made from a dough of wheat flour mixed with water or eggs. • Know some of the typical ingredients used in pasta salads. • Know that to effectively prepare and cook food, a recipe must be followed. • Know the principles of how to safely cook pasta, use a hob and set it to the correct temperature. • Know how to perform and demonstrate the bridge hold, claw grip and grating and peeling techniques. • Know that design criteria set out the principles for what a design must include. • Know that existing products can help us design our own. • Know that to evaluate means to review the product made against our original design criteria and feedback from others.	• I understand mechanical systems in products, such as levels. • I know catapults work when a force is applied. • I know a catapult is a lever propped up by a fulcrum (a pivoting point) • I know why catapults were/are used. • I can use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). • I can use my own research, the ideas of experts, existing designs and design criteria to help design a product. • I know how to make a detailed plan for a Roman soldier's catapult and explain it. • I know to use my design criteria, sketches and diagrams to help in the construction of my structure. • I know which materials are suitable for the task and how to cut and join them effectively. • I know how to use tools and equipment sensibly and safely. • I can apply my understanding of how to strengthen, stiffen and reinforce more complex structures. • I understand and can use mechanical systems in my products, such as levers. • I know how and when to evaluate my design for purpose and appearance and can suggest improvements. • I know how to consider the views of others including any intended users to improve the work/product.	• Know that a design brief outlines a problem that a design will solve and should be referred to throughout the project. • Know how to accurately measure and cut fabric. • Know that a running stitch is made of small even stitches which run back and forth through cloth. • Know that a running stitch can be used to join two pieces of material together. • Know that applique can be added to a product to add decoration. • Know that a whipstitch can be used to attach applique to a project. • Know that a button can be attached to a project to provide a fastening. • Know how to attach a button to fabric. • Know that a button hole must be cut in order for a button to be a functional fastening. • Know the principles of how to safely use a needle and thread.

Disciplinary Knowledge (Skills)	Materials • Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Select appropriate joining techniques. Textiles • Join textiles with appropriate stitching. Construction • Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques. Mechanics • Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design. Evaluate • Improve upon existing designs, giving reasons for choices. • Refine work and techniques as work progresses, continually evaluating the product design.	Materials • Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Select appropriate joining techniques. Construction • Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques. Mechanics • Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design. • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. Evaluate • Improve upon existing designs, giving reasons for choices. • Refine work and techniques as work progresses, continually evaluating the product design. •	Materials • Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Select appropriate joining techniques. Construction • Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques. Mechanics • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). • Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design. • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. Evaluate • Improve upon existing designs, giving reasons for choices. • Refine work and techniques as work progresses, continually evaluating the product design.	Food • Prepare ingredients safely and hygienically. • Select and use the appropriate equipment and utensils for different food preparation tasks. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). Design • Use the internet to research different pasta salads and the ingredients used within them. • identify design criteria for a pasta salad based around the requirements of a purpose. • apply their knowledge, experience and research findings to design a pasta salad which meets their design criteria. • communicate their salad design through notes and sketches. Evaluate • Improve upon existing designs, giving reasons for choices. • Refine work and techniques as work progresses, continually evaluating the product design.	• Complete research to investigate and analyse different types/designs of successful Roman catapults, their identifying features and working mechanisms. • Experiment creating different types of catapults (basic prototypes) and use research to inform/help develop a set of design criteria. • From previous research, develop design criteria to inform the design of a fit for purpose Roman style catapult. • Generate, develop, model and communicate ideas through discussion, annotated sketches and cross-sectional diagrams. • Select and use materials and components, including construction materials, suitable for the task, according to their functional properties and aesthetic qualities. • Measure and mark out to the nearest mm/cm. • Cut materials accurately and safely by selecting appropriate tools. • Select appropriate joining techniques to make the structure secure and stable. • Choose suitable techniques to construct products. • Strengthen materials using suitable techniques. • Finish off the structure with personal colour designs/use of decoration. • Refine work and techniques as work progresses, continually evaluating the product design. • Evaluate catapult against the design criteria, for purpose and appearance. • Consider the views of others to improve work. • Suggest improvements to design/final product, giving reasons for choices.	Materials • Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Select appropriate joining techniques. Textiles • Understand the need for a seam allowance. • Join textiles with appropriate stitching. (running stitch and whipstitch) • Select the most appropriate techniques to decorate textiles. Evaluate • Improve upon existing designs, giving reasons for choices. • Refine work and techniques as work progresses, continually evaluating the product design.
Vocabulary	Support, strut, beam, dowel, saw, cut, goggles, vice, hot glue gun, glue, stable, structure, fabric, cover, base	Mould, pliable, sculpt, sculpture, form, carve, indent, engrave, shape, throw, slip	Saw, measure, centimetre, millimetre, tape measure, goggles, nail, hammer, strike, join, attach, roof, base, walls	Balanced diet, carbohydrates, proteins, fruits and vegetables, dairy, fats, oils and spreads, sugar, seasonality, healthy, varied. Pasta salad, bridge hold, claw grip, grating, peeling, hygiene, nutrients, ingredients, recipe, method, hob, temperature, dice, chop, grate, slice. design criteria, feedback, evaluate improve, taste, appearance, appealing	Catapult, Lever, linkages, Force, Fulcrm (pivoting point), Components, Tension, Torsion, Model, Materials, Design criteria Components, frame, arm, payload, Wood, elastic band, Frame/base, dowel, saw, cut, goggles, vice, hot glue gun, glue, stable, structure, measure, centimetre, tape measure, ruler, join, attach	Sew, running stitch, whipstitch, thread, needle, pin, attach, join, design, evaluate, applique, template, pattern, seam, seam allowance, button, buttonhole, knot, tie,

UKS2 Knowledge and Vocab Summary							
	Materials and Construction – Christmas Wreaths	**Computing – Coding (Microbits)**	**Cooking and Nutrition Caribbean Roti Wraps**	**Textiles – Viking Money Pouches**	**Electrical and Electronics – Circuits – Making Games**	**Cooking and Nutrition – Biscuit Project (Enterprise)**	**Woodwork – Viking longboats**
NC	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. 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. .	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 and computer-aided design. 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 computing to program, monitor and control their products.	Make • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. 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. Cooking & 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: • 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	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 • 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.	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. Cooking & 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 • 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 diag.rams, 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].
Lense	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Construction	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Computing/Electronics	➢ Process (Design/Make/Evaluate) ➢ Techniques ➢ Cooking & Nutrition	➢ Process ➢ Media & Materials ➢ Techniques	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Technique ➢ Computing/Electronics	➢ Process (Design/Make/Evaluate) ➢ Techniques ➢ Cooking & Nutrition	➢ Process (Design/Make/Evaluate) ➢ Media and Materials ➢ Techniques ➢ Construction

Final Piece	Christmas Wreaths	Can pupils program a Micro: bit to make a music making device?	Roti Wraps	Viking Money Pouch	Board Games	Biscuits	Viking Longboats
Substantive Knowledge	• Know that it is important to consider how we make a product appealing during the design process. • Know that it is useful to create multiple designs to evaluate and improve the final product. • Know that florist wire is used to attach foliage onto a wreath base. • Know that a hot glue gun can be used to attach dry materials to a wreath base. • Know the principles of how to safely use a glue gun.	• Know that it is important to consider the target audience when writing an algorithm. • Know that a micro: bit can be programmed to play different musical phrases when certain conditions are met. • Know that speakers or headphones must be attached to a micro: bit to play music. • Know that a micro: bit can be used to help people who find playing musical instruments difficult.	• Know that food provides essential nutrients for the body. • Know that Caribbean food is often savoury and features hot spices. • Know that starchy carbohydrates such as roti bread and rice are staple ingredients of a Caribbean diet. • Know how to safely operate and set the correct temperature on a hob. • Know how to roll a roti wrap so that the filling does not fall out. • Know how to operate a knife safely including 'flat side down'.	• Know that an embellishment is an added detail such as sewing letters/beads onto a product • Know that textiles refers to sewing fabrics • Know a range of stitching techniques (back stitch, split stitch) • Know that a backstitch is a strong stitch useful for holding seams together. • Know the principles of how to safely use a needle and thread. • Know that a fabric pattern is used by people who work in the textiles industry to accurately cut material to size. • Know that pins hold a pattern piece in place whilst cutting	• Know that a product is designed for a target audience. • Know that an eye-catching design is important to targeted towards a specific audience. • Know some popular board games, how they are designed and how people play with them. • Know how to design and build a working electronic circuit that employs a number of components. • Know that working circuits can be broken by buttons, levers or pulleys and how these can be used to create a specific function. • Know that card is an appropriate material to make both 2D and 3D structures.	• Know that a recipe should be followed to achieve a desired outcome. • Know that a recipe can be adapted by doubling or halving the ingredients or using a specific ratio. • Know that a product can be marketed to a target audience. • Know how to safely operate and set the correct temperature on an oven. • Know that ingredients should be accurately measured to achieve the desired outcome. • Know that ingredients can be combined using techniques such as mixing, creaming and kneading. • Know that dough can be shaped using rolling and cutting.	• Know the key features of a Viking longboat and understand which materials would be best to replicate these. • Know that pulleys can be used to raise and lower and often used with heavy weight. • Know that a hot glue gun can be used to attach dry materials together. • Know how to use a simple scale to create an accurate representation. • Know the principles of how to safely use a saw. • Know the principles of how to use a hammer safely. • Know that nails can be used to join two pieces of wood together. • Know that a hammer is used to insert a nail into wood. • Know how to operate a tape measure to accurately measure wood. • Know how to safely operate a saw station.

Disciplinary Knowledge (Skills)	Materials • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper) • Computing Construction • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience.	Electricals and Electronics • Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). Computing • Write code to control and monitor models or products. • I can read, interpret and evaluate a range of algorithms. • I can write algorithms for a given audience. • I can use my existing knowledge to improve programs. • I can write and debug musical programs. • I can experiment (tinker) with the micro: bit to make music. • I can identify patterns in an algorithm. • I can make predictions about outputs based on reading code. • I can evaluate a micro: bit as a device for making music.	Food • Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures.	• Develop and imaginatively extend ideas from starting points throughout the curriculum. • Collect information, sketches and resources and present ideas imaginatively in a sketch book. • Use the qualities of materials to enhance ideas. • Spot the potential in unexpected results as work progresses. • Comment on artworks with a fluent grasp of visual language. **Textiles** • generate, develop and communicate ideas through discussion, annotated sketches and pattern pieces. • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as contrasting thread and felt colours) • Create objects (such as a cushion) that employ a seam allowance. • Join textiles with a combination of stitching techniques (such as back stitch for seams) • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as contrasting thread and felt colours)	Materials • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). Electricals and Electronics • Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). Construction • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). Mechanics • Convert rotary motion to linear using cams. • Use innovative combinations of electronics (or computing) and mechanics in product designs. • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs. • Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience.	Food • Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures. Materials • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).	Materials • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). Construction • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). Mechanics • Convert rotary motion to linear using cams. • Use innovative combinations of electronics (or computing) and mechanics in product designs. • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs. • Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience.
Vocabulary	Wreath, festive, dried fruits, foliage, floristry, weave, design, plan, evaluate, target audience,	Phrases, algorithm, orchestra, conductor, evaluation, decomposition, modify.	Roti, hob, fry, sear, spread, fold, wrap, dice, chop, slice	Design brief, evaluate, make, pattern piece, design, pin, needle, thread, drawstring, embellish, sew, back stitch, split stitch, knot, join, seam, seam allowance, construct, felt, wool, purpose, functional, component,	Design, feature, rules, trap, circuit, electrical flow, bulb, battery, complete circuit, switch, lever, pulley	Bake, temperature, creaming, mixing, stir, combine, knead, dough, roll, rolling pin,	Mast, pulley, saw, cut, sand, sandpaper, join, nails, hammer, glue gun,

Progression of Skills

	EYFS (Milestone 1)	KS1 (Milestone 2)	LKS2 (Milestone 3)	UKS2 (Milestone 4)
Master practical skills	Food • Show some understanding of how food can change (e.g. melting, freezing, baking). • Be involved in creating a snack (e.g. chopping an apple, rolling and shaping a gingerbread man, assembling the ingredients of a mug cake).	Food • Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients.	Food • Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).	Food • Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures.
	Materials • Cut materials safely using tools provided. • Join different materials (construction, junk modelling, clay, playdough). • Use different joining techniques (such as gluing, hinges or combining materials to strengthen).	Materials • Cut materials safely using tools provided. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).	Materials • Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Select appropriate joining techniques.	Materials • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).
	Textiles • Explore different textiles and learn vocabulary to describe the textiles.	Textiles • Shape textiles using templates. • Join textiles using running stitch. • Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).	Textiles • Understand the need for a seam allowance. • Join textiles with appropriate stitching. • Select the most appropriate techniques to decorate textiles.	Textiles • Create objects (such as a cushion) that employ a seam allowance. • Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).
	Electricals and Electronics • Use electronic items and show an awareness of how to turn them on and off.	Electricals and Electronics • Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage).	Electricals and Electronics • Create series and parallel circuits	Electricals and Electronics • Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).
	Computing • Use a simple coding program or device (such as a beebot). • Access a variety of different apps to explore marks and sounds.	Computing • Model designs using software.	Computing • Control and monitor models using software designed for this purpose	Computing • Write code to control and monitor models or products.
	Construction • Use materials and other resources to practise joining, gluing and nailing (joining could include joining duplo/lego or train tracks).	Construction • Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.	Construction • Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques.	Construction • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding).
	Mechanics • Use resources that have wheels and levers.	Mechanics • Create products using levers, wheels and winding mechanisms.	Mechanics • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).	Mechanics • Convert rotary motion to linear using cams. • Use innovative combinations of electronics (or computing) and mechanics in product designs.

Design, make, evaluate and improve	• Plan and think ahead about how they will explore or play with objects. • Make products, using tools safely. • Share their creations, explaining the process they have used.	• Design products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. • Use software to design.	• Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design. • Use software to design and represent product designs.	• Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
Take inspiration from design	• Explore objects and designs to identify likes and dislikes of the designs.	• Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing designs. • Explore how products have been created.	• Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. • Disassemble products to understand how they work.	• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience.