Durweston CE VA Primary School

Design and Technology Policy

Adopted by: Summer 2021

Revised: Annually

Feed the mind, nurture the spirit, free the imagination!

Governors are mindful of their duties under the Equality Act 2010 and have screened this document to ensure compliance with the law.

Intent

Our aim at Durweston is to cover the National Curriculum for DT. Children will:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- Build and apply a repertoire of knowledge, understanding and technical skills in order to design and make high-quality prototypes and products for a wide range of purposes;
- Develop their wider knowledge of product design and their ability to apply vocabulary accurately, whilst being encouraged to think like 'designers'.
- 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.

At Durweston, we believe that every child has the right to a curriculum that provides opportunities for problem solving and ingenuity. We understand the value that having the ability to work through problems and research an area of interest has on the quality and purpose of a DT project.

Equality, Diversity and Inclusion

Our curriculum planning ensures regular, progressive access to DT for all children irrespective of gender, race, creed or disability.

We recognise the fact that we have children of differing ability in all our classes, and we provide suitable learning opportunities for all by:

- setting tasks that are open-ended and can have a variety of responses
- setting tasks of increasing difficulty, where not all children complete all tasks
- providing a range of challenges with different resources
- having more adults support the work of individual children or small groups

Implementation

Our planning is based on the Projects on the Page, a project based Scheme of Work written by the DT Association to help primary schools meet the requirements of the National Curriculum. At Durweston, specific skills are mapped and taught at least twice across the school, enabling children to build upon prior technical knowledge and skills. We have a 2-year rolling programme that ensures coverage of the National Curriculum and caters for our mixed-age classes. All the units cover the key technical knowledge and skills in the Durweston School: Progression of Technical Knowledge and Skills (DT) Document (Appendix 1). These progression grids are used to ensure knowledge, skills and vocabulary build year on year, and ensures that by the end of year 6, pupils have a wealth of knowledge and skills to aid in their future studies. The Projects on a Page scheme provides teachers with key information, without being too prescriptive; teachers can plan projects to capture the interests of the children linked to their termly topics. Our curriculum places an emphasis on cooking and nutrition, and a Food Technology Project is taught at least once in every class per year. .

		Starfish	Dolphins	Seahorses	Sharks	Porpoises
Year A	**Autumn**	Structures/Food/Textiles tbc	**Structures-** Freestanding Structures	**Food-** Preparing a bread product	**Structures-** shell structures	**Structures** Frame Structures
	Spring	Structures/Food/Textiles tbc	**Food-** Preparing fruit and vegetables	**Mechanisms-** Winding	**Food** Healthy and varied Diet	**Food** Celebrating culture and seasonality
	Summer	Structures/Food/Textiles tbc	**Mechanisms-** Sliders and Levers	**Structures-** Free Standing	**Textiles** 2D to 3D shapes	**Electrical systems-** more complex switches and circuits
Year B	**Autumn**	Structures/Food/Textiles tbc	**Mechanisms-** Wheels and Axles (Sand buggies and snow mobiles)	**Mechanisms-**Wheels and Axles	**Mechanical Systems-** levers and Linkages	**Textiles** Combining different fabric shapes
	Spring	Structures/Food/Textiles tbc	**Food-** Preparing fruit and vegetables	**Textiles- 2D to 3D Shapes**	**Electrical systems Simple Circuits and switches**	**Food- Celebrating Culture and Seasonality** **Electrical Systems**
	Summer	Structures/Food/Textiles tbc	**Textiles-** Templates and Joining Techniques	**Food-** preparing Fruit and Vegetables	**Food-** Healthy and Varied Diet	**Mechanical systems** Pulleys or gears

Note: Please refer to Projects on a Page Planning and *Progression of Technical Knowledge and Skills (DT)* to ensure skills are covered for each year group

EYFS

DT is part of the topic work covered during the year in Handy Paws and Reception. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the Design, Make and Evaluate aspects of the children's work to the objectives set out in the Early Learning Goals which underpin the curriculum planning for children aged three to five. The objectives covered in our EYFS and Reception class can be found on the Durweston School: Progression of Technical Knowledge and Skills (DT) Document (Appendix 1).

By the end of the Reception year, they will be able to:

- 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;

Retention of learning - Non-negotiables

The Progression of Technical Knowledge and Skills (DT*)* Document can be found in Appendix 1. To supplement this, teachers also use DT Knowledge Planners to form the basis of their planning for all DT Projects. These can be found on the School Google Drive in the DT Folder. As a unit progresses, teachers co-construct a class knowledge map, with the children and this is displayed in each classroom alongside any key vocabulary for the unit (see Vocabulary progression Document Appendix 3).

Design & technology lessons begin with a review activity which acts as a recap for prior knowledge. This activity might take the form of quick quizzes, vocabulary flashcards or any other short activity which promotes information recall. New information is presented in small and simple steps, after which pupils are given time to practise, in an effort to support working memory. Teachers pose carefully considered questions which elicit information from pupils and allow them to provide in-depth responses to deepen their understanding. To support learning teachers provide clear models to demonstrate skills to pupils and use thinking aloud strategies to cognitively support learners. Pupils are shown how to work in accordance with health and safety guidance when using tools and materials.

- One Research-Design-Make-Evaluate project is completed in each class per term.

- Each child has a DT folder which evidences DT work from each step of a project (Research, Technical Knowledge, Plan, Make, and Evaluate)
- Working walls are displayed in classrooms which allow children to consistently see good models and the vocabulary needed to articulate their opinions in design & technology. Teachers refer to the working walls when modelling concepts or solving design problems, which is a crucial strategy for enabling pupils to become independent.
- Pupils are supplied with all the materials and tools needed to create a functional product in the classroom.

Impact

Ongoing assessment of the children's retention of key knowledge is integral to the teaching and learning of DT. Teachers plan opportunities to revisit and revise the key knowledge covered across a unit of work and units taught in previous years. This, plus observations of the children's skills (using our Progression Document- Appendix 1), completed submissions of learning at the end of a unit and teacher's overall judgements of a child's aptitude inform future planning and enable the teacher to make an annual assessment of progress. This forms part of each child's annual report to parents. Each term, teachers input subject assessment data onto Insight.

Homework

Teachers send home termly Topic Home Learning Grids, which include challenges linked to topics covered in DT and other areas of the curriculum. These are shared with parents before half term and children bring in and share their home learning at termly Open-Mornings/ afternoons.

Resources

There is a growing range of practical resources to support the teaching of DT across the school which is kept upstairs. This room is accessible to children only under adult supervision. Some consumables linked to class specific projects are kept in classrooms. Teachers liaise with the DT co-ordinator if there is anything further that is required and/or things that need to be purchased to enable delivery of the topic. If consumables are used up (e.g., glue gun refills), teachers need to inform the DT coordinator.

Health and safety

DT is a subject with considerable health and safety implications. We endeavour to teach children to respect and handle safely both living things and any equipment and materials which they may need to use. Pupils and teachers recognise the hazards involved, assess the risks and take action to minimise both in all DT activities. Please see attached DT Risk Assessment (Appendix 3)

Monitoring and Review

The coordination of the subject curriculum is the responsibility of the subject leader. Each term the subject leader will monitor planning to make sure it follows the long-term plan and will support colleagues in their teaching. They may carry out work scrutinies, learning walks and pupil interviews. A scrutiny of work is carried out once per year to ensure the quality of teaching is upheld and that each project is meeting the specific skills outlined in *The Progression of Technical Knowledge and Skills (DT)*. At the end of the year, they will review their monitoring and write an action plan for the following year.

Subject co-ordinator - Jane Stirk

Appendix 1

The Progression of Technical Knowledge and Skills (DT)		
Statutory Expectations of the NC		
EYFS	KS1	KS2
Understands that media can be combined to create new effects. Constructs with a purpose in mind, using a variety of resources. Uses simple tools and techniques competently and appropriately. Selects appropriate resources and adapts work where necessary. Selects tools and techniques needed to shape, assemble and join materials they are using. Children safely use and explore a variety of materials, tools and techniques, experimenting with design, form and function. Create simple representations of objects. Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. DESIGN AND DEVELOP Talk about what they want to make MAKING	DESIGN Design purposeful, functional, appealing product based on design criteria Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and ICT and, where appropriate, information and communication technology MAKE Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Select from and use a wide range of materials and components, including construction materials, textiles, ingredients according to their characteristics EVALUATE Explore and evaluate a range of existing products Evaluate ideas and products against design criteria TECHNICAL KNOWLEDGE Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. COOKING AND NUTRITION use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from.	DESIGN Use research and develop criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design MAKE 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 ideas and products against their own design criteria and consider the views of others to improve their work Understand how key events and individuals have helped shape the world. TECHNICAL KNOWLEDGE Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Apply their understanding of computing to program, monitor and control products.

Use a variety of tools and materials to make models. PRODUCT AND EVALUATION Be excited about what they have made		COOKING AND NUTRITION Understand and apply the principles of a healthy and varied diet Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.

Early Years – Design Technology		
DESIGN AND DEVELOP Talk about what they want to make	MAKING Use a variety of tools and materials to make models.	PRODUCT AND EVALUATION Be excited about what they have made
Can they make observations about the features of objects? Can they use their senses to explore and describe objects? Can they think of some ideas of their own? Can they plan how best to approach a task?	Can they explain what they are making? Can they select appropriate resources and tools? Can they explain which tools are they using and why? Can they use tools safely? Can they use tools to manipulate materials?	Can they identify success and next steps? Can they change their strategy as needed?

Lower School (Dolphins and Seahorses)			
	Year 1	Year 2	Year 3
Background Research Exploring existing products	Explore: ● What a product is and who or what it is for. ● How a product works and how or why it might be used.	Explore: ● What a product is and who or what it is for. ● How a product works and how or why it might be used. ● What materials products are made from ● What they like and dislike about products	Investigate and analyse: ● What a product is and who or what it is for. ● How a product works and how or why it might be used. ● What materials products are made from ● What they like and dislike about products ● How well products have been designed and made ● Why materials have been chosen ● What methods of construction have been used Brain Builders: Research facts about famous inventors/ chefs / designers etc linked to product
Design Criteria Understanding their intended users and their own product	Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment ● State what products they are making ● Say whether their products are for themselves or other users ● Describe what their products are for	Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. ● State what products they are making ● Say whether their products are for themselves or other users ● Describe what their products are for ● Say how their products will work ● Say how they will make their products suitable for their intended users ● Use simple design criteria to help develop their ideas	Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. ● Describe the purpose of their products ● Indicate the design features of their products that will appeal to intended users ● Explain how particular parts of their products work

Planning Communicating ideas and creating prototypes for product		• Generate ideas by drawing on their own experiences Use knowledge of existing products to help come up with ideas • Develop and communicate ideas by talking and drawing	• Generate ideas by drawing on their own experiences Use knowledge of existing products to help come up with ideas • Develop and communicate ideas by talking and drawing • Model ideas by exploring materials, components and construction kits • And by making templates and mock-ups • Use ICT, where appropriate, to develop and communicate their ideas	• Share and discuss ideas with others • Order the main stages of making • Choose materials to use based on suitability of their properties • Represent ideas in diagrams, annotated sketches and computer based programmes • Use pattern pieces and make prototypes
Making	Planning	• Choose suitable tools for making	• Choose suitable tools for making whilst explaining why they should be used • Select from a range of materials and components according to their characteristics	• Select tools and equipment suitable for the task • Explain their choice of tools and equipment in relation to the skills and techniques they will be using • Select materials and components suitable for the task • Explain their choice of materials and components according to functional properties
	Practical skills and techniques	Across KS1: Use materials - construction materials and kits, textiles, food and mechanical components • Follow safety and food hygiene procedures • Measure, mark, cut and shape materials and components • Join, assemble and combine materials and components • (see Appendix 1 for specific knowledge linked to these areas)	Across KS1: Use materials - construction materials and kits, textiles, food and mechanical components • Follow safety and food hygiene procedures and explain why they are important • Measure, mark, cut and shape materials and components • Join, assemble and combine materials and components • Use finishing techniques, including skills learnt in Art	Across KS2: Use a wider range of materials - construction materials and kits, textiles, food, mechanical and electrical components • Follow safety and food hygiene procedures • Measure, mark, cut and shape materials and components with some accuracy • Join, assemble and combine materials and components with some accuracy • Apply a range of finishing techniques, including skills learnt in Art with some accuracy
Evaluation Own ideas and products		• Talk about their design ideas and what they have made • Make simple judgements of how the product met their design ideas	• Talk about their design ideas and what they have made • Make simple judgements of how the product met their design ideas • Suggest how their products could be improved	• Identify the strengths and areas for development in their ideas and products • Consider the views of others, including intended users, to improve their work

Technical Knowledge		Across KS1 pupils should know: ● About the simple working characteristics of materials and components ● About the movement of simple mechanisms such as levers, sliders, wheels and axles ● How freestanding structures can be made stronger, stiffer and more stable ● That a 3-d textiles product can be assembled from two identical fabric shapes ● That food ingredients should be combined according to their sensory characteristics ● The correct technical vocabulary for the projects they are undertaking Please refer to specific knowledge organisers for progression in the skills and knowledge in each area of DT.	● How to use learning from science and maths to help design and make products that work ● That materials have both functional properties and aesthetic qualities ● That materials can be combined and mixed to create more useful characteristics ● The correct technical vocabulary for the projects they are undertaking ● How mechanical systems such as levers, sliders, wheels and axles create movement ● How to make strong, stable structures ● That a single fabric shape can be used to make a 3D textiles product That food ingredients can be fresh, pre-cooked and processed.
Food	Where Food comes From	Across KS1 pupils should know: ● That food comes from plants or animals ● That food has to be farmed, caught, or grown	Lower KS2 ● That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world
	Food Prep, cooking and Nutrition	Across KS1 pupils should know: ● How to name and sort foods into the five groups in The Eatwell Plate ● That everyone should eat at least five portions of fruit and vegetables every day ● How to prepare simple dishes safely and hygienically, without using a heat source ● How to use techniques such as cutting, peeling and grating	● How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source ● How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking ● That a healthy diet is made up from a variety and balance of different food and drink, ● As depicted in the Eatwell plate ● That to be active and healthy, food and drink are needed to provide energy for the ● Body

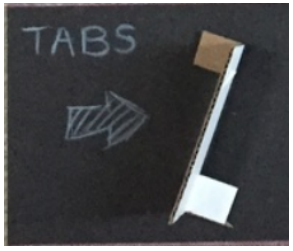
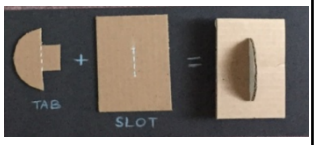
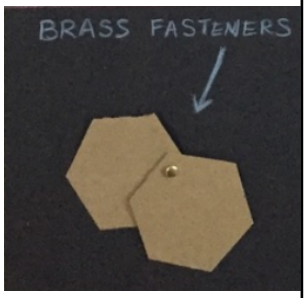
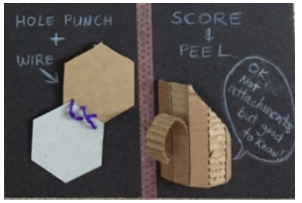
Upper School - Sharks and Porpoises			
	Year 4	Year 5	Year 6
Background Research Exploring context and existing products	Investigate and analyse: ● How well products have been designed and made ● Why materials have been chosen ● What methods of construction have been used ● Ground-breaking products ● How well products work to achieve their purposes ● How well products meet user needs and wants ● Who designed and made the products ● Where and when products were designed and made ● Whether products can be recycled or reused Brain Builders: Research facts about famous inventors/ chefs / designers etc linked to product.	Investigate and analyse: ● How well products have been designed and made ● Why materials have been chosen ● What methods of construction have been used ● How well products work to achieve their purposes ● How well products meet user needs and wants Brain Builders: Research facts about famous inventors/ chefs / designers etc linked to product	Investigate and analyse: ● How well products have been designed and made ● Why materials have been chosen ● What methods of construction have been used ● How well products work to achieve their purposes ● How well products meet user needs and wants ● How much products cost to make ● How innovative products are ● How sustainable the materials in products are ● What impact products have beyond their intended purpose Brain Builders: Research facts about famous inventors/ chefs / designers etc linked to product
Design Criteria Understanding their intended users and their own product	Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. ● Describe the purpose of their products ● Indicate the design features of their products that will appeal to intended users ● Explain how particular parts of their products work ● Gather information about needs and wants of particular individuals and groups ● Develop their own design criteria and use these to inform their ideas	Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. ● Understand and gather information about what a particular group or people want from a product, using questionnaires, surveys etc ● Describe the purpose of their product ● Identify design features that will appeal to intended users ● Explain how particular parts of their product will work ● Develop their own design criteria and use for planning ideas ● Generate innovative ideas that meet needs of user and take into account availability of resources	● Understand and gather information about what a particular group or people want from a product, using ● questionnaires, surveys etc ● Describe the purpose of their product ● Identify design features that will appeal to intended users ● Explain how parts of their product will work ● Create a design description for their product ● Highlight the impact of time, resources and cost within ● their design ideas ● Generate innovative ideas that meet needs of user

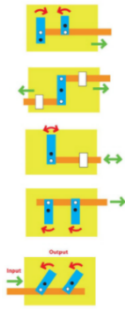
Planning Communicating ideas and creating prototypes for product		• Share and discuss ideas with others • Model their ideas using prototypes and pattern pieces • Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas • Use computer-aided design to develop and communicate their ideas • Generate realistic ideas, focusing on the needs of the user • Make design decisions that take account of the availability of resources • Create pattern pieces and prototypes	• Share and discuss ideas with others • Record a step by step plan for making • Produce lists for the tools, equipment and materials they will be using • Choose materials to use based on suitability of their properties and aesthetic qualities • Represent ideas in diagrams, annotated sketches and computer based programmes (where appropriate) • Create pattern pieces and prototypes	• Share and discuss ideas with others • Record a detailed step by step plan for making • Produce lists for the tools, equipment and materials they will be using • Choose materials to use based on suitability of their properties and aesthetic qualities • Represent ideas in diagrams, annotated sketches and computer based programmes • Create pattern pieces and prototypes
Making	Planning	• Select tools and equipment suitable for the task • Explain their choice of tools and equipment in relation to the skills and techniques they will be using • Select materials and components suitable for the task • Explain their choice of materials and components according to functional properties and aesthetic qualities • Order the main stages of making	• Select tools and equipment suitable for the task • Explain their choice of tools and equipment in relation to the skills and techniques • They will be using • Select materials and components suitable for the task • Explain their choice of materials and components according to functional properties and aesthetic qualities. • Produce appropriate lists of tools, equipment and materials that they need	• Select tools and equipment suitable for the task • Explain their choice of tools and equipment in relation to the skills and techniques they will be using • Select materials and components suitable for the task • Explain their choice of materials and components according to functional properties and aesthetic qualities • Produce appropriate lists of tools, equipment and materials that they need • Formulate step-by-step plans as a guide to making.
	Practical skills and techniques	Across KS2: • Use materials - construction materials and kits, textiles, food, mechanical and electrical components • Use design criteria whilst making • Follow safety and food hygiene procedures • Measure, mark, cut and shape materials and components with some accuracy • Join, assemble and combine materials and components with some accuracy • Use finishing techniques, including skills learnt in Art with some accuracy	Across KS2: • Use materials - construction materials and kits, textiles, food, mechanical and electrical components • Use design criteria whilst making • Follow safety and food hygiene procedures • Measure, mark, cut and shape materials and components accurately • Join, assemble and combine materials and components accurately • Demonstrate problem solving skills when encountering a mistake or practical problem • Use finishing techniques, including skills learnt in Art accurately	• Use materials- construction materials and kits, textiles, food, mechanical and electrical components • Choose suitable tools for making whilst explaining why they should be used • Use design criteria whilst making • Follow safety and food hygiene procedures • Measure, mark, cut and shape materials and components accurately • Join, assemble and combine materials and components accurately • Demonstrate problem solving skills when encountering a mistake or practical problem • Use finishing techniques that involve a number of steps, including skills learnt in Art accurately

Evaluation	Own ideas and products	• Use design criteria to evaluate product – identifying both strengths and areas for development • Consider the views of others, including intended user, whilst evaluating product. • Refer to their design criteria as they design and make • Use their design criteria to evaluate their completed products	• Identify the strengths and areas for development in their ideas and products • Consider the views of others, including intended users, to improve their work • Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • Evaluate their ideas and products against their original design specification	• Identify the strengths and areas for development in their ideas and products • Consider the views of others, including intended users, to improve their work • Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Evaluate their ideas and products against their original design specification
	Technical Knowledge	Lower KS2 • How to use learning from science and maths to help design and make products that work • That materials have both functional properties and aesthetic qualities • That materials can be combined and mixed to create more useful characteristics • That mechanical and electrical systems have an input, process and output • Use the correct technical vocabulary for the projects they are undertaking • How mechanical systems such as levers and linkages or pneumatic systems create movement • How simple electrical circuits and components can be used to create functional products • How to program a computer to control their products • How to make strong, stiff shell structures • That a single fabric shape can be used to make a 3d textiles product	In Upper KS2 pupils should also know: • How to use learning from science and maths to help design and make products that work • That materials have both functional properties and aesthetic qualities • That materials can be combined and mixed to create more useful characteristics • That mechanical and electrical systems have an input, process and output • The correct technical vocabulary for the projects they are undertaking • How mechanical systems such as cams or pulleys or gears create movement • How more complex electrical circuits and components can be used to create functional products • How to program a computer to monitor changes in the environment and control their products • How to reinforce and strengthen a 3d framework • That a 3d textiles product can be made from a combination of fabric shapes • That a recipe can be adapted by adding or substituting one or more ingredients	
Food	Where Food comes From	Lower KS2: • That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world	Upper KS2 • That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the uk, europe and the wider world • That seasons may affect the food available • How food is processed into ingredients that can be eaten or used in cooking	

	Food Prep, cooking and Nutrition	Lower KS2 ● How to prepare and cook a variety of predominantly savoury dishes safely and ● Hygienically including, where appropriate, the use of a heat source ● How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking ● That a healthy diet is made up from a variety and balance of different food and drink, as depicted in the Eatwell plate ● That to be active and healthy, food and drink are needed to provide energy for the body	Upper KS2 ● How to prepare and cook a variety of predominantly savoury dishes safely and ● Hygienically including, where appropriate, the use of a heat source ● How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, ● Spreading, kneading and baking ● That recipes can be adapted to change the appearance, taste, texture and aroma ● That different food and drink contain different substances – nutrients, water and Fibre – that are needed for health

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	To master practical skills:					
Food						
	Cut ingredients safely and hygienically. Assemble or cook ingredients.	Cut, **peel or grate** ingredients safely and hygienically. Measure or weigh using measuring cups or electronic scales.	Prepare ingredients hygienically using appropriate utensils. • **Measure accurately**. • Follow a recipe. • **Assemble or cook ingredients**	Prepare ingredients hygienically using appropriate utensils. • **Measure ingredients to the nearest gram.** • Assemble and cook ingredients (**controlling the temperature of the oven or hob, if cooking**).	• **Understand the importance of correct storage and handling of ingredients** (knowledge of micro-organisms). • Demonstrate a range of baking and cooking techniques.	• Measure accurately and **calculate ratios** of ingredients to scale up or down from recipe. • Create and refine recipes, including ingredients, methods, cooking times and temperatures.
Materials	• Cut materials safely using tools provided. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).	• Measure and mark out **to nearest cm**. • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).	• Cut materials accurately and safely by selecting appropriate tools. • Select appropriate joining techniques.	• Measure and mark out to the **nearest mm**. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).	• 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 (e.g. the nature of fabric may require sharper scissors than would be used to cut paper).
Textiles	• Shape textiles using templates. • Colour and decorate textiles	• Join textiles **using running stitch**. • Colour and decorate textiles using a number of techniques	• Join textiles using running stitch, **overstitch**. Understand the need for a seam allowance. • Join textiles with appropriate stitching.	Join textiles using overstitch, **backstitch**, **blanket stitch**. • Select the most appropriate techniques to decorate textiles eg cross stitch.	• Create objects (such as a cushion) that employ a seam allowance. • Join textiles **with a combination of stitching techniques** (e.g. back stitch for seams and running stitch to attach decoration, cross-stitch for 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		Create series circuits.	Create series circuits.	Create series/**parallel circuits.**	• Create circuits using electronics kits that employ **a number of components** (such as LEDs, resistors, transistors and chips).	• Create circuits using electronics kits that employ a number of components with **increasing confidence**.
Computing	Model simple designs using draw software.	Model designs using draw software.	Model designs using draw software **including annotations.**	• Control and monitor models using software **designed for this purpose.**	Write code to control and monitor models or products.	Write code to control and monitor models or products.
Construction	• Use materials to practise screwing and gluing materials to make and strengthen products.	Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.	• Choose suitable techniques to construct products or to repair items.	• Strengthen materials using suitable techniques.	• Develop a range of practical skills to create products (e.g cutting, drilling and screwing, nailing, gluing, filling and sanding).	• Develop a range of practical skills to create products.
Joins			 			

Mechanics :	• Create products using levers and sliders. Wheels and axles 	Create products using levers and sliders. Wheels and axles	• Create products using Wheels and axles, winding mechanisms.	• Use scientific knowledge to choose appropriate mechanisms for a product. eg knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, linkages winding mechanisms, pulleys and gears). 	• Convert rotary motion to linear using cams.	• Use innovative combinations of electronics (or computing) and mechanics in product designs
	To design, make, evaluate and improve:					
	• 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, evaluating the end product design.	• Design with purpose by identifying opportunities to design. • Make products by working efficiently • 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. • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate.	• Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
	To take inspiration from design throughout history:					

	• Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing 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 to generate ideas for designs. • Improve upon existing designs, giving reasons for choices.	• Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Disassemble products to understand how they work.	• Combine elements of design from a range of inspirational designers throughout history. • Create innovative designs that improve upon existing products.	• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.

Appendix 2 – Key Vocabulary Progression

Vocabulary: Textiles						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
join, sew, stick	pattern, mark out, decorate, running stitch, needle, fabric	template, quality, suitable, features, dye, overstitch, design, fray, mock-up, seam	fastening, compartment, zip, finishing technique, function, prototype, back stitch, felted, woven, knitted, bonded	aesthetics, seam allowance, pinning, embroidery, back stitch, blanket stitch, cross stitch	specification, tacking, working drawing, clasp, pinking shears, design criteria, hem, reinforce, stem stitch, satin stitch, tie dye	applique, annotate, evaluate, innovation, functionality, renewable, authentic, chain stitch
Vocabulary: Electrical Systems						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Science links: user, fault, toggle switch, insulator, conductor, battery holder, crocodile clip	series circuit, connection, push-to-make switch, push-to-break switch, innovative, appealing, control box, input device, output device, system	parallel circuit, light emitting diode, monitor, flowchart, design specification, reed switch, tilt switch	light dependent resistor, interface control, micro switch, latching switch
Vocabulary: Mechanisms						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<u>Wheels & Axles:</u> car, wheel, pull, push	<u>Wheels & Axles:</u> axle, fixed, free, design, make, cutting, joining	<u>Slider & Leavers:</u> mechanism, lever, slider, slot, pivot, guide/bridge, masking tape, fastener, pull, push,	<u>Wheels & Axles:</u> axle, fixed, free, design, make, cutting, joining, hacksaw, vice,	<u>Leavers & Linkages:</u> loose pivot, fixed pivot, system, input, process, output, linear, rotary, reciprocating,	<u>Pulleys or Gears:</u> pulley, gear, driver, follower, rotation, motor, belt, spindle, motor, circuit, switch, ratio, transmit,	<u>Pulleys or Gears:</u> transmit, annotated drawings, exploded diagrams, functionality

		down, straight, work, design, evaluate, purpose,	dowel, body, cab, shaping	innovative, appealing, linkage, oscillating	annotated drawings, exploded diagrams, functionality	
Vocabulary: Structures						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<u>Freestanding Structures:</u> Cut, fold, join	<u>Freestanding Structures:</u> Cut, fold, join, fix, weak, strong	<u>Freestanding Structures:</u> Structure, base, underneath, thicker, thinner, corner, point, straight, curved, rectangle, cube, cuboid, cylinder	<u>Shell Structures:</u> Shell, structure, net, marking out, material, joining, three dimensional, stiff	<u>Shell Structures:</u> Assemble, prism, vertex, breadth, capacity, scoring, adhesives, reduce, reuse, recycle, corrugating, ribbing, laminating	<u>Frame Structures:</u> Reinforce, triangulation, stability, temporary, permanent, prototype, innovation, functional, design brief	<u>Frame Structures:</u> Reinforce, triangulation, stability, temporary, permanent, prototype, innovation, functional, design brief
Vocabulary: Food						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<u>Preparing Fruit & Vegetables:</u> Cut, taste, fruit, vegetable	<u>Preparing Fruit & Vegetables:</u> Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging	<u>Preparing Fruit & Vegetables:</u> Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging	<u>Healthy & Varied Diet:</u> Science Link: Texture, taste, appearance, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested	<u>Healthy & Varied Diet:</u> Texture, taste, appearance, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested	<u>Celebrating Culture & Seasonality:</u> Ingredients, yeast, dough, wholemeal, unleavened, baking soda, spice, herbs, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten, allergy, intolerance, savoury, seasonality, pour, mix, kneed, whisk, beat, combine, fold, rubbing in	<u>Celebrating Culture & Seasonality:</u> Ingredients, yeast, dough, wholemeal, unleavened, baking soda, spice, herbs, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten, allergy, intolerance, savoury, seasonality, pour, mix, kneed, whisk, beat, combine, fold, rubbing in

Appendix 3 -Risk Assessment

DT Risk Assessment	Completed by **Nicola Brooke**	Reviewed annually

Hazard / Risk Things at the venue, parts of the activity etc that could cause harm	**Who is at risk?**	**Current Controls in Place** Are they adequate? Is the risk acceptable?	**Level of Residual Risk** Low, medium, high
Carrying equipment from DT storage area upstairs	Staff	Equipment kept upstairs. Buddy system for bringing down to classroom. Stored below waist height Stairs well-lit and free from trip hazards Two people to carry equipment if heavy	Medium

		Pregnant staff to ask for someone to carry heavier items	
Injury from sharp instruments – needles, saws, knives	Children	Resources to be returned to resources cupboards and not left accessible to children Craft knives only to be used with older children under strict 1:1 supervision	Medium
Injury from saws	Children	Bench hooks to be used Safety briefing on sensible, safe practise Adult supervision Small group working Children must not walk around the class with saws	Medium
Injury from scissors	Children	Only round headed scissors used Safety briefing on sensible, safe practise Adult supervision Children to cover blade when carrying scissors Set of sharp scissors available for cutting fabric – to be used with closer supervision Faulty or damaged scissors thrown away	Low
Injury from glue gun - scalding	Children	n/a Only adults to use glue guns	n/a

Sewing -Needle Injury		Pupils are supervised during the activity Only materials, which can be easily sewn and/or stitched are to be used to avoid excess pressure being used to sew materials together. Pupils are taught how to use a needle safely.	Sewing -Needle Injury -Cotton cuts
Food technology – injury from knives, peelers, graters etc	Children	All cutting tools to be kept sharp to avoid the need for excess pressure Cutting board must be used Safety briefing Close adult supervision Small group working	Medium
Allergic reaction	Children	Permission and allergy advice sought from parents prior to activity	Low
Food poisoning	Children	Prior to the cooking activity taking place, the adult leading the activity should talk to the children about both hygiene safety (Put away watches, rings etc., tie long hair back, wear an apron, wash hands before, during and after the activity, use the catch it/bin it & kill it coughing or sneezing, keep your work area clean etc.) and use of equipment safety where applicable for example: knife safety) Only fresh food to be used Tables to be cleaned before use	Low
Burns	Staff	Only staff allowed to use heated rings/cooker. Children to be kept at a safe distance	Low