Design and Technology

Curriculum Intent	<u>Intent:</u> At Field Junior School, we aim to help children to think creatively to solve problems as individuals and as part of a team. We want pupils to develop a critical understanding of the way products have and continue to impact on daily life and the wider world. We want pupils to then use creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts. This is achieved through the undertaking of three practical projects in each year group. Each project will contain the basic elements of DT, namely designing, making, evaluating both existing products and their own and be based on aspects of technical knowledge. Our curriculum is designed so that the children's learning builds and develops as they move through Key Stage 2. Each project either leads to future learning or builds on previous learning. As the projects increase in complexity throughout the key stage, pupils will acquire a broad range of subject knowledge and draw on other disciplines such as mathematics, science, engineering, computing and art. In addition to this, through half-termly assemblies, we will be encouraging pupils' Cultural Development by focusing on countries of particular interest to our cohort, including any significant Design and Technology developments or achievements from those countries. To ensure that all pupils reach their full potential, their individual needs and abilities are recognised and developed within a caring and supportive environment to challenge all with effective questioning. Researching, designing, experimenting, failing, re-evaluating and problem solving can be seen in lessons, with an emphasis on practical activity. We intend for our children to be confident in using a range of tools and equipment safely and effectively. The underlying imperative is to ensure that our children have access to a full curriculum which enables them to learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. <u>Equal Opportunities:</u> Encouragement and praise for all should be at the heart of Design and Technology. All children should be taught to use a variety of tools and techniques safely and effectively.

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	YEAR 3	**YEAR 4**	**YEAR 5**	**YEAR 6**
Design	• Investigate and analyse a range of existing products • 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 with simple labels**	• Investigate and analyse a range of existing products • 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 annotated sketches and cross-sectional diagrams with information e.g. the material or purpose and paper templates**	• Investigate and analyse a range of existing products • 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 **recipes, annotated sketches with additional detail, cross-sectional diagrams, word page, prototypes and computer aided design**	• Investigate and analyse a range of existing products • Use research and develop design criteria to inform the design of innovative, functional, nutritional and appealing products that are fit for purpose, aimed at particular individuals or groups • Generate, develop, model and communicate their ideas through **annotated sketches with measurements and dimensions, pattern pieces, recipes and cross-sectional diagrams**
Make	• Select from and use a limited range of tools and equipment to perform practical tasks [for example, sawing, measuring, gluing, cutting, shaping, slicing, grilling, presenting, joining and finishing] accurately • Select from and use a limited range of materials and components, **including construction materials and ingredients**	• Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining, stitching, measuring and finishing] accurately • Select from and use a range of materials and components, **including construction materials, textiles and electrical components**	• Select from and use a wider range of tools and equipment to perform practical tasks [for example, frying, baking, presenting, programming techniques, cutting, shaping, joining and finishing] accurately • Select from and use a wider range of materials and components, **including construction materials and ingredients, according to their taste and aesthetic qualities**	• Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, stitching, measuring, peeling, weighing shaping, joining, wire stripping, reinforcing and finishing] accurately • Select from and use a wider range of materials and components, **including construction materials, electrical components, textiles and ingredients, according to their functional properties, nutritional and aesthetic qualities**

Evaluate	• 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	• 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	• 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	• 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	• **To understand and apply the principles of a healthy and varied diet** • Prepare and cook a savoury dish **(grilling)** • **Understand seasonality** (different foods are ready at different times of year) and know where and how a variety of ingredients are grown		• Prepare and cook a savoury dish **(frying & baking)** • Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed	• Prepare and make a nutritious smoothie • **To understand and apply the principles of a healthy and varied diet, using nutritional calculations**
Technical Knowledge	• Understand and use mechanical systems – **levers & linkages** • Develop understanding of how to stiffen, strengthen and reinforce a **simple structure (e.g., wooden photo frame and levers)**	• Understand and use **mechanical and electrical systems** in their products (e.g., series circuits, switches, bulbs) • Develop understanding of how to strengthen, stiffen and reinforce a **simple structure (stitching)**	• Apply understanding of computing to program, monitor and control their products (computing game design) • Apply their understanding of how to strengthen, stiffen and reinforce **more complex structures (3D frame)** • Understand and **use mechanical systems in their products (e.g., cams)**	• Understand and use **electrical systems** in their products (e.g., series circuits, switches, bulbs, motors) • Apply their understanding of how to strengthen, stiffen and reinforce **more complex structures (stitch pattern pieces)**