**Highfield Hall Primary School**

**Knowledge & Skills Progression: DT**

Design Technology National Curriculum Requirements and Progression of Skills by Year Group

Research, design, make and evaluate **S**omething for **S**omeone, for **S**ome relevant purpose.

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|  | **3 & 4-year-olds will be learning to:** | **Children in Reception will be learning to:** | **ELG** |
| **Expressive Art and Design** | * Make imaginative and complex ‘small worlds’ with blocks and construction kits, such as a city with different buildings and a park.
* Explore different materials freely, in order to develop their ideas about how to use them and what to make.
* Develop their own ideas and then decide which materials to use to express them.
* Create closed shapes with continuous lines, and begin to use these shapes to represent objects.
 | * Explore, use and refine a variety of artistic effects to express their ideas and feelings.
* Return to and build on their previous learning, refining ideas and developing their ability to represent them.
* Create collaboratively, sharing ideas, resources and skills.
 | **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.
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| **Physical Development** | * Use large-muscle movements to wave flags and streamers, paint and make marks.
* Choose the right resources to carry out their own plan.
* Use one-handed tools and equipment, for example, making snips in paper with scissors.
 | * Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
* Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.
* Develop overall body-strength, balance, coordination and agility.
* Progress towards a more fluent style of moving, with developing control and grace.
 | **Fine Motor Skills*** Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases.
* Use a range of small tools, including scissors, paintbrushes and cutlery.
* Begin to show accuracy and care when drawing.
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| **Understanding the World** | * Explore how things work.
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| **PSED** | * Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.
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| Year 1 |  | NC Requirements | Skills Progression | Core / British Values | Cultural Capital |
| Design | Design purposeful, functional, appealing products for themselves and other users based on design criteriaGenerate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology | * Draw on their own experience to help generate ideas
* Suggest ideas and explain what they are going to do
* Identify a target group for what they intend to design and make
* Draw a simple picture of their idea and label the main parts
* Develop their design ideas applying findings from their earlier research
 | CreativityCritical ThinkingCompassion |  |
| Make (including food) | Select from and use a range of tools and equipment to perform practical tasks Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristicsTechnical KnowledgeBuild structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms in their products.Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from. | * With help make their design using appropriate techniques
* With help measure, mark out, cut and shape a range of materials
* Use age appropriate tools eg scissors and a hole punch safely
* Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape
* Select and use appropriate fruit and vegetables, processes and tools
* Use basic food handling, hygienic practices and personal hygiene as directed
* Use simple finishing techniques to improve the appearance of their product
 | ResilienceCreativityPhysical Well BeingResponsibility  | Plant, grow, pick and eat somethingMake a toy with their own hands |
| Evaluate | Explore and evaluate a range of existing productsEvaluate their ideas and products against design criteria | * Evaluate their product by discussing how well it works in relation to the purpose
* Evaluate their products as they are developed, identifying strengths and possible changes they might make 
* Evaluate their product by answering simple questions about what they have made and how they have gone about it
 | CuriosityCritical thinking |  |
| Year 2 |  | NC Requirements | Skills Progression | Core / British Values | Cultural Capital |
| Design | Design purposeful, functional, appealing products for themselves and other users based on design criteriaGenerate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology | * Generate ideas by drawing on their own and other people's experiences
* Develop their design ideas through discussion, observation , drawing and modelling
* Identify a purpose for what they intend to design and make
* Identify simple design criteria
* Make simple drawings and label parts
 | CreativityCritical ThinkingCompassion |  |
| Make (including food) | Select from and use a range of tools and equipment to perform practical tasks Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristicsTechnical KnowledgeBuild structures, exploring how they can be made stronger, stiffer and more stable Explore and use mechanisms in their products.Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from. | * Begin to select tools and materials; use vocab' to name and describe them
* Measure, cut and score with some accuracy
* Use hand tools safely and appropriately
* Assemble, join and combine materials in order to make a product
* Cut, shape and join fabric to make a simple garment.
* Use basic sewing techniques
* Select and use appropriate ingredients, processes and tools
* Follow safe procedures for food safety and hygiene
* Choose and use appropriate finishing techniques
 | ResilienceCreativityPhysical Well BeingResponsibility | Plant, grow, pick and eat somethingMake a toy with their own hands |
| Evaluate | Explore and evaluate a range of existing productsEvaluate their ideas and products against design criteria | * Evaluate against their design criteria
* Evaluate their products as they are developed, identifying strengths and possible changes they might make
* Talk about their ideas, saying what they like and dislike about them
 | CuriosityCritical thinking |  |

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| Year 3 |  | NC Requirements | Skills Progression | Core / British Values | Cultural Capital |
| 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 | * Generate ideas for an item considering its purpose and the user/s
* Identify a purpose and establish criteria for a successful product.
* Plan the order of their work before starting
* Explore, develop and communicate design proposals by modelling ideas
* Make drawings with labels when designing
 | CreativityCritical ThinkingCompassion |  |
| Make (including food) | Select from and use a wider range of tools and equipment to perform practical tasks, 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 qualitiesunderstand and apply the principles of a healthy and varied dietprepare 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 processedTechnical Knowledgeapply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products understand and use electrical systems in their products  | * Select tools and techniques for making their product inc ICT from a selection given
* Measure, mark out, cut, score and assemble components with more accuracy
* Work safely and accurately with a range of simple tools
* Think about their ideas as they make progress and be willing change things if this helps them improve their work 
* Measure, tape or pin, cut and join fabric with some accuracy
* Demonstrate hygienic food preparation and storage
* Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT
 | ResilienceCreativityPhysical Well BeingResponsibility  | Designed something using TinkerCADMade and flown a kiteBuilt a denBuilt a snowmanMade a toy with their own handsBake a cake |
| 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 | * Evaluate their product against original design criteria e.g. how well it meets its intended purpose 
* Disassemble and evaluate familiar products
 | CuriosityCritical thinking |  |
| Year 4 |  | NC Requirements | Skills Progression | Core / British Values | Cultural Capital |
| 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 | * Generate ideas considering the purposes for which they are designing
* Make labelled drawings from different views showing specific features
* Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail
* Evaluate products and identify criteria that can be used for their own designs
 | CreativityCritical ThinkingCompassion |  |
| Make (including food) | Select from and use a wider range of tools and equipment to perform practical tasks, 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 qualitiesunderstand and apply the principles of a healthy and varied dietprepare 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 processedTechnical Knowledgeapply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products understand and use electrical systems in their products  | * Select appropriate tools and techniques for making their product inc use of ICT
* Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques
* Join and combine materials and components accurately in temporary and permanent ways 
* Sew using a range of different stitches, weave and knit.
* Identify and demonstrate hygienic food preparation and storage
* Measure, tape or pin, cut and join fabric with some accuracy
* Use simple graphical communication techniques
 | ResilienceCreativityPhysical Well BeingResponsibility  | Designed something using TinkerCADMade and flown a kiteBuilt a denBuilt a snowmanMade a toy with their own handsBake a cake |
| 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 | * Evaluate their work both during and at the end of the assignment
* Evaluate their products carrying out appropriate tests
 | CuriosityCritical thinking |  |

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| Year 5 |  | NC Requirements | Skills Progression | Core / British Values | Cultural Capital |
| 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 | * Generate ideas through brainstorming and identify a purpose for their product 
* Draw up a specification for their design
* Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail
* Use results of investigations, information sources, including ICT when developing design ideas
 | CreativityCritical ThinkingCompassion |  |
| Make (including food) | Select from and use a wider range of tools and equipment to perform practical tasks, 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 qualitiesunderstand and apply the principles of a healthy and varied dietprepare 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 processedTechnical Knowledgeapply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products understand and use electrical systems in their products  | * Select appropriate materials, tools and techniques inc ICT
* Measure and mark out accurately
* Use skills in using different tools and equipment safely and accurately
* Weigh and measure accurately (time, dry ingredients, liquids)  Apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens
* Cut and join with accuracy to ensure a good-quality finish to the product
 | ResilienceCreativityPhysical Well BeingResponsibility  | Designed something using TinkerCADMade and flown a kiteBuilt a denBuilt a snowmanMade a toy with their own handsBake a cake |
| 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 | * Evaluate a product against the original design specification
* Evaluate it personally and seek evaluation from others
 | CuriosityCritical thinking |  |
| Year 6 |  | NC Requirements | Skills Progression | Core / British Values | Cultural Capital |
| 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 | * Communicate their ideas through detailed labelled drawings including ICT / CAD
* Develop a design specification
* Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways
* Plan the order of their work, choosing appropriate materials, tools and techniques
 | CreativityCritical ThinkingCompassion |  |
| Make (including food) | Select from and use a wider range of tools and equipment to perform practical tasks, 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 qualitiesunderstand and apply the principles of a healthy and varied dietprepare 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 processedTechnical Knowledgeapply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products understand and use electrical systems in their products  | * Select appropriate tools, materials, components and techniques inc ICT
* Assemble components make working models
* Use tools safely and accurately 
* Construct products using permanent joining techniques
* Weigh and measure accurately (time, dry ingredients, liquids)  Know and apply the rules for basic food hygiene and demonstrate awareness of other safe practices e.g. hazards relating to the use of ovens
* Make use of seasonal food
* Make modifications as they go along
* Pin, sew and stitch materials together create a product
* Achieve a quality product
 | ResilienceCreativityPhysical Well BeingResponsibility  | Designed something using TinkerCADMade and flown a kiteBuilt a denBuilt a snowmanMade a toy with their own handsBake a cake |
| 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 | * Evaluate their product identifying strengths and areas for development, and carrying out appropriate tests
* Record their evaluations using drawings with labels
* Evaluate against their original criteria and suggest ways that their product could be improved
 | CuriosityCritical thinking |  |