




















Goodrich CE Primary School
Design and Technology Progression

| DESIGN & TECHNOLOGY | | | | | | | | | | | | | | |
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| BIG IDEAS | Master Practical Skills | | | | | | | Design, Make, Evaluate & Improve | | | | To Take Inspiration From Designs Throughout History | | |
| Building Blocks | Cooking & Nutrition | Materials | Textiles | Electricals & Electronics | Computing | Construction | Mechanics | Vocabulary | Designers | Making | Evaluating | Explore Real Designs | Improve Designs | Explore How Products are Created |
| |  Cooking & Nutrition |  Materials |  Textiles |  Electricals & Electronics |  Computing |  Construction |  Mechanics |  Vocabulary |  Designing |  Making |  Evaluating |  Explore Real Designs |  Improve Designs |  Explore How Products Are Created |

| BIG IDEAS | BUILDING BLOCKS | EYFS | MILESTONE 1 | MILESTONE 2 | MILESTONE 2 |
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| MASTER PRACTICAL SKILLS |  Cooking & Nutrition | <p>Characteristics of Effective Learning</p> <ul style="list-style-type: none"> Show curiosity about objects, events and people. Question why things happen. Engage in open-ended activity. Think of ideas. Find ways to solve problems / find new | <p>KS1 - use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from.</p> <ul style="list-style-type: none"> Cut, peel or grate ingredients safely and hygienically. Measure or weigh using measuring cups or electronic scales. Assemble or cook ingredients. | <p>KS2 - 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.</p> <ul style="list-style-type: none"> 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). | <ul style="list-style-type: none"> 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, |



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| |  <p style="text-align: center;">Materials</p> | <p>ways to do things / test their ideas.</p> <ul style="list-style-type: none"> • Use senses to explore the world around them • Create simple representations of events, people and objects. • Planning, making decisions about how to approach a task, solve a problem and reach a goal. • Checking how well their activities are going. | <ul style="list-style-type: none"> • 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). | <ul style="list-style-type: none"> • 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. | <p>methods, cooking times and temperatures.</p> <ul style="list-style-type: none"> • 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). |
| |  <p style="text-align: center;">Textiles</p> | <p>Early Learning Goals</p> <ul style="list-style-type: none"> • Changing strategy as needed. • Reviewing how well the approach worked. | <ul style="list-style-type: none"> • 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). | <ul style="list-style-type: none"> • Understand the need for a seam allowance. • Join textiles with appropriate stitching. • Select the most appropriate techniques to decorate textiles. | <ul style="list-style-type: none"> • 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). |



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| Electricals & Electronics | <ul style="list-style-type: none"> Choose the resources they need for their chosen activities. Handle equipment and tools effectively. | <ul style="list-style-type: none"> Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage). | <ul style="list-style-type: none"> Create series and parallel circuits. | <ul style="list-style-type: none"> Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). |
| Computing | <ul style="list-style-type: none"> Children know the importance for good health of a healthy diet. | <ul style="list-style-type: none"> Model designs using software. | <ul style="list-style-type: none"> Control and monitor models using software designed for this purpose. | <ul style="list-style-type: none"> Write code to control and monitor models or products. |
| Construction | <ul style="list-style-type: none"> They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. | <ul style="list-style-type: none"> Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. | <ul style="list-style-type: none"> Choose suitable techniques to construct products or to repair items. Strengthen materials using suitable techniques. | <ul style="list-style-type: none"> Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). |
| Mechanics | <ul style="list-style-type: none"> Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology. | <ul style="list-style-type: none"> Create products using levers, wheels and winding mechanisms. | <ul style="list-style-type: none"> Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). | <ul style="list-style-type: none"> Convert rotary motion to linear using cams. Use innovative combinations of electronics (or computing) and mechanics in product designs. |




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| DESIGN, MAKE, EVALUATE & IMPROVE | Vocabulary | <p>Year 1 - I can give my opinions on a product.</p> <p>Year 2 - I can say what I like and dislike about the product and the designer.</p> | <p>Year 3 - I can talk about some of the tools, techniques used by the designer.</p> <p>Year 4 - I can explain why a product is appealing</p> | <p>Year 5 - I can give reasons for the decisions made by the designer.</p> <p>Year 6 – I can start to think of new products and innovate my own ideas.</p> | |
| | Designing | <p>KS1 - 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.</p> | <p>KS2 - 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.</p> | | |
| | <p style="text-align: center;">Objectives:</p> <ul style="list-style-type: none"> • Design products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. <ul style="list-style-type: none"> • Use software to design. <p>Year 1 - can think of ideas and with help can put them into practice. I know what a design is. I can use pictures and words to describe what I want to do.</p> <p>Year 2 - can think of ideas and with help can put them into practice.</p> | <p style="text-align: center;">Objectives:</p> <ul style="list-style-type: none"> • Design with purpose by identifying opportunities to design. • Make products by working efficiently. • Refining work and techniques as work progresses, continually evaluating the product design. • Use software to design and represent product design. <p>Year 3 - I can think of ideas and plan what to do next, based on what I know about materials and components.</p> | <p style="text-align: center;">Objectives:</p> <ul style="list-style-type: none"> • 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. • Use porotypes. Cross-sectional diagrams and computer aided designs to represent designs. <p>Year 5 - can use my knowledge of design, designers and further</p> | | |
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| | | | <p>I know what a design is and its purpose. I can use pictures and words to describe what I want to do (materials, techniques, features, mechanics and tools).</p> | <p>I can select tools, techniques and materials. I can explain my choices giving reasons.</p> <p>Year 4 - I can think of ideas and plan what to do next, based on what I know about materials and components. I can select the appropriate tools, techniques and materials explaining my choices. I can communicate my ideas using labelled sketches giving reasons for my choices. I can produce step by step plans.</p> | <p>research to help influence my own design. I can create models to show aspects of my design.</p> <p>Year 6 - I can use my knowledge of design, designers and further research to help influence my own design. I can create models or prototypes to show aspects of my design. I can produce step by step plans. I can use computer aided design. I can come up with solutions to problems as they happen.</p> |
| |  Making | | <p>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 and ingredients, according to their characteristics.</p> <p>Technical knowledge: Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example, levers,</p> | <p>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 .</p> <p>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 their products.</p> | |



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|  Evaluating | sliders, wheels and axles], in their products. | | | |
| | KS1 - evaluate their ideas and products against design criteria. | KS2 - evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. | | |
| | <p>Objectives:</p> <ul style="list-style-type: none"> • Make products, refining the design as work progresses. <p>Year 1 - I can talk about my own work (features, design, opinion). I describe how my product works</p> <p>Year 2 - I talk about my own and others' work (features, design, opinion). I can explain why I chose certain materials, techniques and tools. I describe how my product works</p> | <p>Objectives:</p> <ul style="list-style-type: none"> • Refine work and techniques as work progresses, continually evaluating the product design. <p>Year 3 - talk about my own and others' work (features, design, opinion).</p> <p>I can explain why I chose certain materials, techniques and tools.</p> <p>I can say what I would do to improve my product.</p> <p>Year 4 - I can identify what is working well and what can be improved (this is during the make as well as at the end).</p> | <p>Objectives:</p> <ul style="list-style-type: none"> • Make objects through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. <p>Year 5 - can reflect on my designs and develop them bearing in mind the way they will be used (during the process).</p> <p>Year 6 - I can reflect on my designs and adapt them based on testing and a prototype.</p> | |



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TO TAKE INSPIRATION FROM DESIGNS THROUGHOUT HISTORY



Explore Real Designs



Improve Designs



Explore How Products Are Created

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| <p>KS1 - Explore and evaluate a range of existing products.</p> | <p>KS2 - Understand how key events and individuals in design and technology have helped shape the world.</p> | |
| <p>Objectives:</p> <ul style="list-style-type: none"> Explore objects and designs to identify likes and dislikes of the design. <p>Year 1 - I know what a designer does.</p> <p>Year 2 – I know the names and products of some British designers.</p> | <p>Objectives:</p> <ul style="list-style-type: none"> Identify some of the great designers in all the areas of study to generate ideas for design. <p>Year 3 - know some designers from history.</p> <p>Year 4 - I know some international designers.</p> | <p>Objectives:</p> <ul style="list-style-type: none"> Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. <p>Year 5 - I can compare and contrast the work of different designers.</p> <p>Year 6 - know how key events and individuals have influenced the world (in terms of products).</p> |
| <p>KS1 - Explore and evaluate a range of existing products.</p> | <p>KS2 - Investigate and analyse a range of existing products</p> | |
| <p>Objectives:</p> <ul style="list-style-type: none"> Suggest Improvements to existing design. Explore how products have been created. <p>Year 1 – I know what a product is. I can say what a product is for. I can describe a product (who is it for, what is made from, how is it made, how it works).</p> | <p>Objectives:</p> <ul style="list-style-type: none"> Improve upon existing designs, giving reasons for choice. Disassemble products to understand how they work. <p>Year 3 - I can start to research and evaluate existing products. I understand that products are designed for a purpose (e.g. a problem, an audience, an event).</p> | <p>Objectives:</p> <ul style="list-style-type: none"> Create innovative designs that improve upon existing products. Evaluate the design of products so as to suggest improvements to the user experience. <p>Year 5 - can research and evaluate existing products giving reasons for the decisions of the designers (materials,</p> |



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| | | | <p>Year 2 – I know the features of familiar products. I can give reasons for some features (colour, choice, material used and joining technique).</p> | <p>Year 4 - I can research and evaluate existing products to inform me in my own planning. I understand that products are designed for a purpose (e.g. a problem, an audience, an event).</p> | <p>design, tools, techniques). I can use the ideas from current designers to help me with my own.</p> <p>Year 6 - can research and evaluate existing products giving reasons for the decisions of the designers (materials, design, tools, techniques). I can adapt the ideas from current designers to help me with my own.</p> |
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