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| **Stoke Gabriel Primary**  **Design Technology Curriculum Plan Years EYFS-6** |
| Rationale/Intent  At Stoke Gabriel, children receive a design and technology curriculum which allows them to exercise their creativity through designing and making. The children are taught to combine their designing and making skills with knowledge and understanding in order to design and make a product. Skills are taught progressively to ensure that all children are able to learn and practice in order to develop as they move through the school. Evaluation is an integral part of the design process and allows children to adapt and improve their product, this is a key skill which they need throughout their life. D&T allows children to apply the knowledge and skills learned in other subjects, particularly Maths, Science and Art. Children’s interests are captured through topic learning, ensuring that links are made in a cross curricular way, giving children motivation and meaning for their learning. Children will learn basic cooking skills. |

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| **Implementation** | | | | | | |
| **A rich vocabulary: thinking and talking like an expert…**   |  |  |  |  | | --- | --- | --- | --- | | EYFS / KS1 | | KS2 further vocab | | | Design  Product  Idea  Template  Labelled diagrams  Names of different materials & textiles  Names of different food ingredients  Assemble, join & combine  Food plant names  Animals that produce/give food  Eatwell Plate –  fruit and vegetables.  potatoes, bread, rice, pasta and other starchy carbohydrates.  beans, pulses, fish, eggs, meat and other proteins.  dairy and alternatives. | oils and spreads.  Hygiene/hygienically  Intended user  Measure, mark out  Mock up  Finishing techniques  Names of tools for cutting, peeling and grating  Slider, lever, hinge,  Wheel, axel & chassis  structures | Purpose  Design features  Intended users  Prototype  Mock up  Pattern piece  Annotated sketches & diagrams  Design criteria  Components  Levers and linkages  Pneumatic systems  Movement  Healthy diet | Cross-sectional drawing  Cams, pulleys, gears  Recycled  Reused  Exploded diagram  Electrical circuits, switches, buzzers  Programming  Structures: Reinforce and strengthen, stronger, stiffer and steadier.  Computer aided programmes: program, monitor and control  Complex electrical circuits  Motor, battery  Conductor, insulator  Crocodile clips |   **How Design Technology is taught at Stoke Gabriel:**    All teaching of DT follows the design, make and evaluate cycle. Each stage is rooted in technical knowledge and vocabulary. The design process should be rooted in real life, relevant contexts to give meaning to learning. While making, children will be given choice and a range of tools to choose freely from. To evaluate, children should be able to evaluate their own products against a design criteria.  Early Years Foundation Stage this looks like:  During the EYFS pupils explore and use a variety of media and materials through a combination of child initiated and adult directed activities. They have the opportunities to learn to:  Use different media and materials to express their own ideas  • Use what they have learnt about media and materials in original ways, thinking about form, function and purpose  • Make plans and construct with a purpose in mind using a variety of resources  • Develop skills to use simple tools and techniques appropriately, effectively and safely  • Select appropriate resources for a product and adapt their work where necessary  • Cook and prepare food adhering to good health and hygiene routines  In KS1 this looks like:  Design:  • Design should be rooted in real life, relevant contexts to give meaning to the learning.  • Planned through appropriate formats: drawing, templates, talking and mock-ups.  Make:  • Children should be given a range of tools for their projects to choose from.  • Children should use a wide range of materials and components; textiles, construction equipment and ingredients.  Evaluate:  • Evaluate existing products.  • Evaluate their own products against design criteria.  In KS2 this looks like:  Design:  • Rooted in real life, relevant contexts to give meaning to the learning.  • Researched designs based on functional, appealing products with purpose.  • Planned by appropriate methods; annotated sketches, cross-sectional diagrams, prototypes, pattern pieces and computer aided design.  Make:  • Children can select from a wider range of tools than KS1.  • Children should use from and select a wider range of materials and components; textiles, construction equipment and ingredients.  Evaluate:  • Evaluations should be in comparison to existing products.  • Children should evaluate against a design criteria.  • Children should understand how key events and individuals have helped shape design and technology globally – products are in context. | | | | | | |
| **The National Curriculum** | | | | | | |
| **At the end of EYFS, level expected:**  **Early years Foundation Stage**  We have aimed to select the Early Learning Goals that link most closely to the Design and Technology National Curriculum.  **Expressive Arts and Design (Exploring and Using Media and Materials)**  Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.  **Expressive Arts and Design (Being Imaginative)**  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, art, music, dance, role play and stories.  **Physical Development (Moving and Handling)**  Children handle equipment and tools effectively, including pencils for writing.  **Key stage 1:**  **Design**  **Pupils should be taught to:**   * 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**  **Pupils should be taught to:**   * 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.   **Evaluate**  **Pupils should be taught to:**   * explore and evaluate a range of existing products; * evaluate their ideas and products against design criteria.   **Technical Knowledge**  **Pupils should be taught to:**   * 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**  **Pupils should be taught to:**   * use the basic principles of a healthy and varied diet to prepare dishes; * understand where food comes from.   **Key Stage 2:**  **Design**  Pupils should be taught to:   * 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**  Pupils should be taught to:  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**  **Pupils should be taught to:**   * 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]; * 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.   **Cooking and Nutrition**  **Pupils should be taught to:**   * 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. | | | | | | |
| **EYFS~ Progressive curriculum plan** | | | | | | |
| 30-50 Months | | Physical Development | Moving and Handling | | * To use one-handed tools and equipment, e.g. makes snips in paper with child scissors. * To understand that equipment and tools have to be used safely. | |
| Health and Self-Care | |
|  | | Understanding the world | Technology | | • To show an interest in technological toys with knobs or pulleys, or real objects.  • To show skill in making toys work by pressing parts or lifting flaps to achieve effects, such as sound, movements or new images. | |
|  | | Expressive Arts and Design | Exploring and Using Media and Materials | | * To develop preferences for forms of expression.   • To use movement to express feelings.  • To create movement in response to music.  • To capture experiences and responses with a range of media, such as music, dance and paint and other materials or words | |
| Being Imaginative | |
| 40-60 Months | | Physical Development | Moving  and Handling | | * To use simple tools to effect changes to materials. * To handle tools, objects, construction and malleable materials safely and with increasing control. | |
| Health  and Self-Care | | * To show understanding of the need for safety when tackling new challenges and consider and manage some risks. * To show understanding of how to transport and store equipment safely. * To practise some appropriate safety measures without direct supervision. | |
| Expressive Arts and Design | Exploring and Using Media and Materials | | * To explore what happens when they mix colours. * To experiment to create different textures. * To understand that different media can be combined to create new effects. * To manipulate materials to achieve a planned effect. * To construct with a purpose in mind, using a variety of resources. * To use simple tools and techniques competently and appropriately. * To select appropriate resources and adapt work where necessary. * To select tools and techniques needed to shape, assemble and join materials they are using. | |
| Being Imaginative | | * To create simple representations of events, people and objects. * To choose particular colours to use for a purpose. | |
| ELG | | Physical Development | Moving and handling | | * To handle equipment and tools effectively, including pencils for writing. | |
| Expressive Arts and Design | Exploring and Using Media and Materials | | * To safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. | |
| Being Imaginative | | * To 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, art, music, dance, role play and stories. | |
| **Progressive curriculum plan ~ key NC end points Y1-Y6** | | | | | | |
|  | **KS1** | | | **LKS2** | | **UKS2** |
| **Design** | **KS1 Design and Technology National Curriculum**  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.  They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].  Children design purposeful, functional, appealing products for themselves and other users based on design criteria.  They generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.  Children can:   1. use their knowledge of existing products and their own experience to help generate their ideas; 2. design products that have a purpose and are aimed at an intended user; 3. explain how their products will look and work through talking and simple annotated drawings; 4. design models using simple computing software;   **e** plan and test ideas using templates and mock-ups;  **f** understand and follow simple design criteria;  **g** work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment. | | | **KS2 Design and Technology National Curriculum**  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.  They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].  Children 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.  They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.  Children can:   1. identify the design features of their products that will appeal to intended customers; 2. use their knowledge of a broad range of existing products to help generate their ideas; 3. design innovative and appealing products that have a clear purpose and are aimed at a specific user; 4. explain how particular parts of their products work; 5. use annotated sketches and cross-sectional drawings to develop and communicate their ideas; 6. when designing, explore different initial ideas before coming up with a final design; 7. when planning, start to explain their choice of materials and components including function and aesthetics; 8. test ideas out through using prototypes;   **i** use computer-aided design to develop and communicate their ideas (see note on p. 1);   1. develop and follow simple design criteria; 2. work in a broader range of relevant contexts, for example entertainment, the home, school, leisure, food industry and the wider environment. | | **KS2 Design and Technology National Curriculum**  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.  They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].  Children 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.  They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.  Children can:   1. use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market; 2. use their knowledge of a broad range of existing products to help generate their ideas; 3. design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user; 4. explain how particular parts of their products work; 5. use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas; 6. generate a range of design ideas and clearly communicate final designs; 7. consider the availability and costings of resources when planning out designs; 8. work in a broad range of relevant contexts, for example conservation, the home, school, leisure, culture, enterprise, industry and the wider environment. |
| **Make** | **KS1 Design and Technology National Curriculum**  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 making.  Children select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].  They select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.  Children can:  Planning   1. with support, follow a simple plan or recipe; 2. begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer; 3. select from a range of materials, textiles and components according to their characteristics;   Practical skills and techniques   1. learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures; 2. use a range of materials and components, including textiles and food ingredients; 3. with help, measure and mark out; 4. cut, shape and score materials with some accuracy; 5. assemble, join and combine materials, components or ingredients; 6. demonstrate how to cut, shape and join fabric to make a simple product; 7. manipulate fabrics in simple ways to create the desired effect; 8. use a basic running stich; 9. cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups; 10. begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations. | | | **KS2 Design and Technology National Curriculum**  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 making.  Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately.  They 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.  Children can:  Plan   1. with growing confidence, carefully select from a range of tools and equipment, explaining their choices; 2. select from a range of materials and components according to their functional properties and aesthetic qualities; 3. place the main stages of making in a systematic order;   Practical skills and techniques   1. learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; 2. use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components; 3. with growing independence, measure and mark out to the nearest cm and millimetre; 4. cut, shape and score materials with some degree of accuracy; 5. assemble, join and combine material and components with some degree of accuracy; 6. demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product; 7. join textiles with an appropriate sewing technique; 8. begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics. | | **KS2 Design and Technology National Curriculum**  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 making.  Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.  They 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.  Children can:  Planning   1. independently plan by suggesting what to do next; 2. with growing confidence, select from a wide range of tools and equipment, explaining their choices; 3. select from a range of materials and components according to their functional properties and aesthetic qualities; 4. create step-by-step plans as a guide to making;   Practical skills and techniques   1. learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures; 2. independently take exact measurements and mark out, to within 1 millimetre; 3. use a full range of materials and components, including construction materials and kits, textiles, and mechanical components; 4. cut a range of materials with precision and accuracy; 5. shape and score materials with precision and accuracy; 6. assemble, join and combine materials and components with accuracy; 7. demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product; 8. join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch; 9. refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape. |
| **Evaluate** | **KS1 Design and Technology National Curriculum**  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.  Children explore and evaluate a range of existing products. They evaluate their ideas and products against design criteria. Children can:   1. explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations; 2. explain positives and things to improve for existing products; 3. explore what materials products are made from; 4. talk about their design ideas and what they are making; 5. as they work, start to identify strengths and possible changes they might make to refine their existing design; 6. evaluate their products and ideas against their simple design criteria; 7. start to understand that the iterative process sometimes involves repeating different stages of the process. | | | **KS2 Design and Technology National Curriculum**  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.  Children investigate and analyse a range of existing products.  They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.  They understand how key events and individuals in design and technology have helped shape the world.  Children can:   1. explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose; 2. explore what materials/ingredients products are made from and suggest reasons for this; 3. consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product; 4. evaluate their product against their original design criteria; 5. evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world. | | **KS2 Design and Technology National Curriculum**  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.  Children investigate and analyse a range of existing products.  They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.  They understand how key events and individuals in design and technology have helped shape the world.  Children can:   1. complete detailed competitor analysis of other products on the market; 2. critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make; 3. evaluate their ideas and products against the original design criteria, making changes as needed. |
| **Key skills progression document~ see website**  **Rolling Programme ~ see individual class pages for DT planned across each academic year** | | | | | | |
| **Impact** | | | | | | |
| **What will this look like? By the time children leave our school they will have:**   * 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 and skills accurately. * The ability to manage risks exceptionally well to manufacture products safely and hygienically. * A passion for the subject.   Assessment of children's learning in Design Technology is an ongoing monitoring of children's understanding, knowledge and skills by the class teacher, throughout lessons. This assessment is then used to inform differentiation, support and challenge required by the children. | | | | | | |