Design & Technology Whole School Progression Document

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NATIONAL CURRICULUM**  By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. | Key Stage 1:  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.   They should work in a range of relevant contexts, such as the home and school, gardens and playgrounds, the local community, industry and the wider environment.  § use the basic principles of a healthy and varied diet to prepare dishes  § understand where food comes from. | | Key Stage 2:  Through a variety of creative and practical activities, pupils should be taught:  § knowledge, understanding and skills needed to engage in an iterative process of designing and making.  § they should work in a range of relevant contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.  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. | | | |
| **AREA** | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 |
| **Design** | 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   Model their ideas in card and paper   Develop their design ideas applying findings from their earlier research | 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 | Generate some independently thought ideas for an item, considering its purpose and the user/s.  Identify a purpose and establish criteria for a successful product (eg pop up books – why they are needed)  Plan the order of their work before starting – learning the different types of mechanisms for the pop-up books.   Explore, develop and communicate design proposals by modelling ideas.  Make clear drawings with labels when designing their final pieces. | 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 | 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 | Communicate their ideas through detailed labelled drawings.  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 |
| Make | Make their design using appropriate techniques   With help measure, mark out, cut and shape a range of materials   Use 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   Use simple finishing techniques to improve the appearance of their product | 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  Follow safe procedures for food safety and hygiene  Choose and use appropriate finishing technique | Select the appropriate tools and techniques for making their product.  Measure, mark out, cut, score and assemble using the correct equipment with some 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 |  Select appropriate tools and techniques for making their product.  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.   Measure, tape or pin, cut and join fabric with some accuracy.  Use simple graphical communication techniques | Select appropriate materials, tools and techniques.  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 |  Select appropriate tools, materials, components and techniques.  Assemble components make working models.  Use tools safely and accurately.  Construct products using permanent joining techniques.  Make modifications as they go along.  Pin, sew and stitch materials together create a product.  Achieve a quality product |
| Evaluate | 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 asking questions about what they have made and how they have gone about it | 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 |  Evaluate their product against original design criteria e.g., how well it meets its intended purpose.  Disassemble and evaluate familiar products |  Evaluate their work both during and at the end of the assignment.  Evaluate their products carrying out appropriate tests |  Evaluate a product against the original design specification.  Evaluate it personally and seek evaluation from others |  Evaluate their products, 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 |
| Construction (including electronics) | Begin to measure and join different materials in appropriate ways (i.e., using glue, sticking tape)  Choose, with support, tools and equipment to perform practical tasks such as cutting, shaping and joining  Recognise the characteristics of a wide selection of materials and begin to choose them to meet the needs of a product  Make simple plans before making objects (i.e., drawings, arranging pieces of construction before the building)  Suggest ways to make material/product stronger  Develop their own ideas from initial starting points | 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  Follow safe procedures for food safety and hygiene  Choose and use appropriate finishing techniques | Select tools and materials; use vocab' to name and describe them  Use hand tools safely and appropriately  Assemble, join and combine materials accurately in order to make a product which suits the purpose.  Cut, shape and join fabric to make a simple garment. Use basic sewing techniques  Follow safe procedures for food safety and hygiene  Choose and use appropriate finishing techniques | Measure carefully to avoid mistakes  Attempt to make product strong  Continue working on product even if original didn’t work  Make a strong, stiff structure  Select most appropriate tools / techniques  Explain alterations to product after checking it  Grow in confidence about trying new / different ideas  Use levers and linkages to create movement  Use pneumatics to create movement  Use number of components in circuit  Program a computer to control product  Use simple circuit in product  Learn about how to program a computer to control product | Measure with increasing accuracy  Draw upon prior knowledge of existing products to design their own product, with the consumer in mind  Make a product that shows stability  Select tools and techniques with accuracy  Explain and justify reasons for altering their product  Ensure their product is functional and aesthetic | Select materials carefully, considering intended use of the product, the aesthetics and functionality  Explain how product meets design criteria, reinforce and strengthen a 3D frame  Refine product after testing, considering aesthetics, functionality and purpose  Be confident to try new / different ideas  Use different types of circuit in product  Think of ways in which adding a circuit would improve product |
| Food technology | Describe the texture of foods  Wash hands & clean surfaces  Think of interesting ways to decorate food  Sort foods according to those which are most healthy and can be eaten frequently and those which should be eaten in small amounts and less regularly  Group food products according to similarities (i.e., fruit, vegetables)  Cut, peel and grate safely, with support | Explain hygiene and keep a hygienic kitchen  Describe properties of ingredients and importance of varied diet  Say where food comes from (animal, underground, etc.)  Describe how food is farmed, home-grown, caught  Draw eat well plate; explain there are groups of food  Describe “five a day”  Cut, peel and grate with increasing confidence | Explain why hygiene is important in the kitchen.  Describe properties of ingredients and importance of varied diet through learning about nutrition  Say where food comes from (animal, underground, etc.)  Describe ideal and healthy diet for age group.  Cut, peel and grate with increasing confidence alongside measuring accurate amounts for a recipe. | Explain how to be safe/hygienic  Think about presenting product in interesting/ attractive ways  Understand ingredients can be fresh, pre-cooked or processed  Begin to understand about food being grown, reared or caught in the UK or wider world  Describe eat well plate and how a healthy diet=variety / balance of food and drinks  Explain importance of food and drink for active, healthy bodies  Prepare and cook some dishes safely and hygienically  Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking | Understand the importance of being safe and hygienic  Draw upon market research to make their product aesthetic and functional  Understand the need to reduce food costs  Prepare and *cook* a variety of savoury dishes safely and hygienically including, where appropriate, *the use of heat source*  Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.  Understand and apply the principles of a healthy and varied diet | Understand a recipe can be adapted by adding /substituting ingredients  Explain seasonality of foods  Learn about food processing methods  Name some types of food that are grown, reared or caught in the UK or wider world  Adapt recipes to change appearance, taste, texture or aroma  Describe some of the different substances in food and drink, and how they can affect health  Prepare and *cook* a variety of savoury dishes safely and hygienically including, where appropriate, *the use of heat source*  Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. |
| Textiles | Measure, cut and join textiles to make a product, with some support  Choose suitable textiles | Measure textiles  Join textiles together to make a product, and explain how I did it  Carefully cut textiles to produce accurate pieces  Explain choices of textile  Understand that a 3D textile structure can be made from two identical fabric shapes | Measure textiles and mark areas on the fabric.  Join textiles together to make a product, and explain how I did it  Carefully cut textiles to produce accurate pieces  Explain choices of textile  Understand that a 3D textile structure can be made from two identical fabric shapes | Think about user when choosing textiles  Think about how to make product strong  Begin to devise a template  Explain how to join things in a different way    Understand that a simple fabric shape can be used to make a 3D textiles project | Use market research and existing products to 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.  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. | Think about user’s wants/needs and aesthetics when choosing textiles  Make a prototype  Make product attractive and strong  Use a range of joining techniques  Think about how product might be sold  Think carefully about what would improve product  Understand that a single 3D textiles project can be made from a combination of fabric shapes |