Meridian Trust

BAR HILL PRIMARY SCHOOL

Progression in Design and Technology SKILLS

Focus area	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing – understanding contexts, users and purposes	Work within a range of contexts, such as story-based, home, school, gardens State what products they are making and what they are for. Give a simple explanation of how their product will work. Work to a basic specification – e.g. make a hat	Work within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community State what products they are making and what and who they are for. Explain how their products will work. Use 1 or 2 simple design criteria to develop their ideas (e.g. must be warm)	Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, wider environment State what products they are making and what and who they are for. Say how they will make their products suitable for the intended users. Explain how their products will work. Use simple design criteria to develop their ideas (e.g. must be warm)	Work confidently within a range of contexts, such as the home, school, leisure, culture, industry and the wider environment Gather information about the needs and wants of intended users Develop some of their own design criteria and use these to inform ideas Describe the purpose of their products, and indicate a few design features which will appeal to intended users Explain how particular parts of their products work Identify some great designers to generate ideas for designs.	Work confidently within a range of contexts, such as the home, school, leisure, culture, industry and the wider environment Gather more detailed information about the needs and wants of intended users Develop own design criteria and use these to inform ideas Describe the purpose of their products, and indicate design features which will appeal to intended users Explain how particular parts of their products work Identify some great designers to generate ideas for designs, giving reasons for choices	Work confidently within a range of contexts, such as the home, school, leisure, culture, industry, enterprise and the wider environment Carry out research using surveys, interviews and questionnaires to identify the needs, wants and preferences of particular individuals and groups Develop a simple design specification to guide ideas Describe the purpose of their products, and indicate design features which will appeal to intended users Explain how particular parts of their products work, and how parts work together as a whole Include elements of design from a range of designers, giving reasons for choices	Work confidently within a range of contexts, such as the home, school, leisure, culture, industry, enterprise and the wider environment Carry out research using surveys, interviews, questionnaires and web-based resources to identify the needs, want, values and preferences of particular individuals and groups Develop a design specification to guide ideas Describe the purpose of their products, and indicate design features which will appeal to intended users Explain how particular parts of their products work, and how parts work together as a whole Combine elements of design from a range of designers, giving reasons for choices
Designing – generating, developing, modelling and communicating ideas	Talk about what they are making Say how they feel about their product	Talk about their design ideas and what they are making Make a simple suggestion about how their product could be improved Say how they feel about their product and if it fits their design criteria	Talk about their design ideas and what they are making Suggest how their products could be improved Make simple judgements about their products and ideas against the design criteria	Share and clarify ideas through discussion Use annotated sketches to develop and communicate their ideas Begin to use computer-aided design Model their ideas using prototypes Generate realistic ideas, considering available resources	Share and clarify ideas through discussion, mostly with peers Use annotated sketches and exploded diagrams to develop and communicate their ideas Use computer-aided design to create simple models Model their ideas using prototypes and pattern pieces Generate realistic ideas, focusing on the needs of the user, considering available resources	Share and clarify ideas through discussion with peers Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas Use computer-aided design to develop and communicate their ideas Model their ideas using prototypes and pattern pieces, and adapt these Design with the user in mind, considering available resources	Share and clarify ideas through discussion with peers Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas Use computer-aided design to develop and communicate their ideas Model their ideas using prototypes and pattern pieces, making continual refinements Design with the user in mind, considering available resources

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Evaluating	Explore a range of products and say what they are for, and what they like and dislike about them. Explore products made of different materials	Explore what existing products are, who or what they are for, and how they work Explore what materials products are made from Explore what they like and dislike about products, , including their own	Explore what existing products are, who or what they are for, how they work, and how or where they might be used Explore what materials products are made from and consider why those materials were chosen Explain what they like and dislike about products, including their own	Investigate how well existing products have been designed and made, how effective they are, and how well they meets users' needs and wants. Consider why materials have been chosen, and identify the construction methods used Investigate who designed existing products Investigate whether products can be reused or recycled Identify strengths and areas for improvement in their own products and ideas, referring to others' views and to design criteria	Analyse how well existing products have been designed and made, how effective they are, and how well they meets users' needs and wants. Consider why materials and construction methods have been chosen Investigate who designed existing products and where and when. Analyse whether products can be reused or recycled Identify strengths and areas for improvement in their own products and ideas, referring to others' views and to design criteria, including whilst designing and making.	Analyse how well existing products have been designed and made, how effective they are, the cost of making them, and how well they meets users' needs and wants. Analyse products and explain why materials and construction methods have been chosen. Analyse how innovative and sustainable products are Investigate innovative designers, engineers etc. Identify strengths and areas for improvement in their own products and ideas, referring to others' views and to design criteria. This includes critically evaluating quality of design, manufacture and fitness for purpose, whilst designing and making.	Analyse how well existing products have been designed and made, how effective they are, their cost-effectiveness, and how well they meets users' needs and wants. Analyse products and explain why materials and construction methods have been chosen. Analyse how innovative and sustainable products are, and the impacts they have beyond their intended purpose. Investigate innovative designers, engineers etc. and trends in their work. Identify strengths and areas for improvement in their own products and ideas, referring to others' views and to design criteria. This includes critically evaluating quality of design, manufacture and fitness for purpose, whilst designing and making.
Making	Say what they have done so far Use available tools and resources Follow procedures for safety and hygiene Cut, shape, assemble and join materials and components Use basic finishing techniques, including those from art and design Follow simple directions when making a simple product	Plan by suggesting what to do next. Select from a ready range of tools, equipment, materials and components, and understand their basic characteristics Follow procedures for safety and hygiene Measure, mark out, cut, shape, assemble, join and combine materials and components Use the correct technical vocabulary for the projects they are undertaking Use finishing techniques, including those from art and design	Plan the next few stages. Select from a ready range of tools, equipment, materials and components, understand their basic characteristics, and explain their choices. Follow procedures for safety and hygiene Measure, mark out, cut, shape, assemble, join and combine materials and components with increasing independence Use the correct technical vocabulary for the projects they are undertaking Use finishing techniques, including those from art and design, with increasing independence.	Order the main stages of making. Select suitable materials, components, tools and equipment, and explain their choice Follow procedures for safety and hygiene Measure, mark out, cut, shape, assemble, join and combine materials and components with some accuracy. Use finishing techniques, including those from art and design, with some accuracy. Use the correct technical vocabulary and learning from maths and science to help design and make products Begin to understand that materials can be more useful when combined	Order the main stages of making. Select suitable materials, components, tools and equipment, and explain their choice according to functional properties and aesthetic qualities Follow procedures for safety and hygiene Measure, mark out, cut, shape, assemble, join and combine materials and components with increasing accuracy. Use finishing techniques, including those from art and design, with increasing accuracy. Use the correct technical vocabulary and learning from maths and science to design and make working products Understand that materials can be combined and mixed to create more useful characteristics	Formulate step-by-step plans as a guide to making, including lists of materials and equipment Select and combine suitable materials, components, tools and equipment, and explain their choices according to functional properties and aesthetic qualities Explain choice of equipment in relation to techniques they will be using. Follow safety and hygiene procedures Demonstrate increasing resourcefulness Accurately measure, mark out, cut, shape, assemble, join and combine materials and components Accurately apply a range of finishing techniques Use the correct technical vocabulary and apply learning from maths and science to design and make working products	Formulate step-by-step plans as a guide to making, including lists of materials and equipment, and techniques with several steps Select and combine suitable materials, components, tools and equipment, and explain their choices according to functional properties and aesthetic qualities Explain choice of equipment in relation to techniques they will be using. Follow safety and hygiene procedures Demonstrate resourcefulness when tackling practical problems Accurately and confidently measure, mark out, cut, shape, assemble, join and combine materials and components Accurately apply a range of finishing techniques Use the correct technical vocabulary and apply learning from maths and science to design and make working products

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Construction	Make own 3d structures and explore ways of strengthening these Use different tools safely and with control	Understand a few ways freestanding structures can be made stronger, stiffer and more stable	Understand and apply a few ways freestanding structures can be made stronger, stiffer and more stable	Know how to make strong, stiff shell structures	Know how to make strong, stiff shell structures using a variety of methods	Know how to reinforce and strengthen a 3D framework	Know how to reinforce and strengthen a 3D framework using a variety of methods
Mechanics and electronics	Explore products which use simple mechanics like levers, sliders, wheel and axles. Make a simple product with wheels	Investigate the movement of simple mechanisms such as levers, sliders, wheels and axles, and use these in their products Recognise if a battery operated device works or not	Understand the movement of simple mechanisms such as levers, sliders, wheels and axles, and use these in their products Diagnose faults in battery-powered devices (e.g. low battery, water damage)	Understand that mechanical and electrical systems have an input, process and output Understand how mechanical systems such as levers and linkages, and use these in their products Use series electrical circuits and components in products. Program a computer to control their products with support	Understand that mechanical and electrical systems have an input, process and output and identify these Understand how mechanical systems such as levers and linkages or pneumatic systems create movement, and use these in their products Use series electrical circuits and components in products. Program a computer to control their products	Understand how mechanical systems such as cams or pulleys or gears create movement, and use these in their products Use parallel electrical circuits to create functional products Program a computer to control their product, and to monitor environmental changes	Understand how mechanical systems such as cams or pulleys or gears create movement, and use these in their products Use series and parallel electrical circuits to create functional products Program a computer to monitor environmental changes and control product accordingly
Textiles	Explore stitching with a large needle and thick thread, using templates with holes in Explore gluing or stapling fabric shapes together (e.g. to make a pouch from two squares)	Assemble a product from two identical fabric shapes Thread a needle and tie a knot, with support Join textiles using running stitch	Assemble a product from two identical fabric shapes Thread a needle and tie a knot independently Join textiles using running stitch	Fold and sew a single fabric shape to make a 3D textiles product Begin to use a seam allowance, with support Join textiles with increasing accuracy using running stitch	Fold and sew a single fabric shape to make a 3D textiles product Begin to use a seam allowance Join textiles accurately using running stitch	Make a 3D textiles product from a combination of fabric shapes Use a seam allowance. Join textiles accurately with a combination of stitching techniques (e.g. running stitch, back stitch)	Make a 3D textiles product from a combination of fabric shapes Use a seam allowance, and include in designs independently Join textiles accurately with a combination of stitching techniques (e.g. running stitch, back stitch) and consider which is best to use where

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Cooking and nutrition	Wash hands and check surfaces are clean before preparing food Prepare cold food by cutting and spreading Say what foods are healthy Say where some foods come from	Know that all food comes from plants or animals, and has to be farmed or caught Name and sort foods into the five groups in The Eatwell Plate Know that everyone should eat at least five portions of fruit and vegetables every day Know how to prepare simple dishes safely and hygienically, without using a heat source Know how to cut food safely	Know that all food comes from plants or animals, and has to be farmed or caught, either locally or from further away. Name and sort foods into the five groups in The Eatwell Plate, and understand that a balanced diet is important Explain why everyone should eat at least five portions of fruit and vegetables every day Prepare simple dishes safely and hygienically, without using a heat source Know how to use techniques such as cutting, peeling and grating safely Measure accurately using measuring cups	Know that food is grown, reared and caught in the UK, Europe and the wider world Explain how a healthy diet is made up from a variety and balance of different food and drink Understand that to be active and healthy, food and drink are needed to provide energy for the body Prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source with support Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking Measure accurately using scales	Know that food is grown, reared and caught in the UK, Europe and the wider world, and that food ingredients can be fresh, pre-cooked and processed Explain how a healthy diet is made up from a variety and balance of different food and drink, giving examples of balanced meals Explain that to be active and healthy, food and drink are needed to provide energy for the body Prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking Measure accurately using scales to the nearest gram	Know that food is grown, reared and caught in the UK, Europe and the wider world, and that foods are often seasonal Understand how food is processed into ingredients that can be eaten or used in cooking Prepare and cook a variety of predominantly savoury dishes safely and hygienically, including the use of a heat source, with increasing independence Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking, with increasing independence. Know that recipes can be adapted to change the appearance, taste, texture and aroma Understand how different food and drink contain different substances – nutrients, water and fibre – that are needed for health	Know that food is grown, reared and caught in the UK, Europe and the wider world, and that foods are often seasonal. Consider these factors when choosing ingredients. Explain how food is processed into ingredients that can be eaten or used in cooking Independently prepare and cook a variety of predominantly savoury dishes safely and hygienically, including the use of a heat source Independently use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking Adapt recipes to change the appearance, taste, texture and aroma Calculate ratios to scale a recipe up or down Give examples of how different food and drink contain different substances – nutrients, water and fibre – that are needed for health

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