Design Technology Progression Document

National Curriculum Expectations
Purpose Of Study: Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation. Aims:The national curriculum for design and technology aims to ensure that all pupils: develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. To build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users critique, evaluate and test their ideas and products and the work of others to understand and apply the principles of nutrition and learn how to cook. Attainment Targets: 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. When designing and making, 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 ● 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 ● explore and evaluate a range of existing products ● evaluate their ideas and products against design criteria ● build structures, exploring how they can be made stronger, stiffer and more stable ● explore and use mechanisms in their products.

Key Stage 2
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 [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].
When designing and making, 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
- 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 qualities
- 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
- 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.

EYFS (Statutory Framework)	Key Stage 1	Lower Key Stage Two	Upper Key Stage Two
They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Children can explain the processes they have used. Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	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. When designing and making, 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	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. When designing and making, 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 • 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	

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Design and Technology - where does it fit in?

Cycle A	Autumn	Spring	Summer
EYFS	Junk model. Model of their own home. Make a nest for owl babies using natural resources. Diva lamp with salt dough Making our own bread. Work collaboratively to create an animal rescue centre and to roll play using various materials. Developing their skills in joining and attachment. Making Christmas decorations using a variety of materials.	Create a shoebox habitat for a polar animal. Making our own pancakes. Continuous provision and access to a variety of construction and modelling materials and tools.	Design and create your own map. Build and construct our own boat with a variety of materials. Will it float? Design and make your own sandwich for a picnic.

	Continuous provision and access to a variety of construction and modelling materials and tools.		
Year 1/2	Junk model city. Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].	Design a toy aeroplane. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Underwater collage. Assemble, join and combine materials and components together using a variety of temporary methods.
Year 3/4	Make a Roman Shield. Think about their ideas as they make progress and be willing change things if this helps them improve their work. Seasonal Stocking	Battery Operated Lights. Mechanical Posters. Join and combine materials and components accurately in temporary and permanent ways	Edible Garden. Select appropriate tools and techniques for making their product
Year 5/6	Create a class war memorial based on work of Henry Moore –provisional learning (provisional learning) Model Anderson shelter. Vegetable Turnover/Stew - Rationing food like in WW2	3D volcano's paper Mache. Hurricane houses Use skills in using different tools and equipment safely and accurately.	Moving chariot. Assemble components to make working models.
Cycle B	Autumn	Spring	Summer
EYFS	Diva lamps out of salt dough Diwali sweets (food technology) Rockets (Bonfire Night)	Easter Garden Easter nests	Build a habitat - Minibeasts

Year 1/2	3D castles with a lever door. Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. Seasonal Stockings	Shoebox habitats. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	Create a healthy smoothie or milkshake. Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.
Year 3/4	Stone Age satchel - look at uses for this in the Stone Age Pottery. Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.	Moving Vehicle - Toy Car Baking Bread - Anglo saxon recipe.	Long boat – 3D Modelling. Join and combine materials and components accurately in temporary and permanent ways.
Year 5/6	Shaduf – Pulleys and Levers. Assemble components to make working models.	Food Technology - Chocolate. Apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens.	Textiles - Blanket. Pin, sew and stitch materials together to create a product.

Key Knowledge, Skills & Vocabulary

Knowledge and Skills, Vocabulary	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Developing, planning and communicating ideas	Begin to use the language of designing and making, e.g. join, build and shape. . Learning about basic planning and adapting initial ideas to make them better. Children can select resources appropriate for an activity, Children can plan to use tools and self select from a range of tools for continuous provision. bricks, balance, tall, wide, stack, tower, enclosure, build, join, stick, cut.	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 are going to design and make .Develop their design ideas applying findings from their earlier research. planning, investigating design, make, user, purpose, ideas, product	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. investigating, planning, design, make, user, purpose, ideas, design criteria, product, function	. 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. user, purpose, design, model, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing	. 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 design brief, design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations	. 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 . design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, design criteria, annotate, evaluate, mock-up, prototype	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 function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype

Working with tools, equipment, materials and components to make quality products (including food)	. To learn to construct with a purpose in mind. . Selects tools and techniques needed to shape, assemble and join materials. . To learn to use a range of materials e.g cardboard, play doh. . To learn how to use a range of tools, e.g. scissors, woodworking tools, rolling pins, pastry cutters. -Learn how everyday objects work by dismantling and using things. . Children have basic hygiene awareness, such as washing hands Bricks, balance, tall, wide, stack, tower, enclosure, build, join, stick, cut.	. 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 Picture, landmark, movement, mechanism; levers, sliders, wheels and axels, material, joining tools; glue, cellotape, tools; scissors, design, strong, stiff, stable, mock-up	. 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 Design, movement, vehicle, functional, mock-up, tech card, cut, join, shape, tools, truck, stiff, strong, wheels & axels	. Select tools and techniques for making their product . 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 to strengthen and improve the appearance of their product using a range of equipment including ICT. Movement, float, Carnival, designs, colour, functionality, pneumatics, tools, join, appealing, mechanism	. 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. Design, materials, tools, light, series circuit, bulbs, buzzers, motors, electrical system, strong, stiff, reinforce, colours, shape, batteries, diagram	. . 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* . Diagram, computer-aided design, structure, cutting, shaping, joining, finishing, strong, stable, stiff, mechanical systems; cams, pulleys, levers	. 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. Design, sketch, functionality, toy prototype, mechanisms; cams, pulleys, levers, materials, strengthen, reinforce, movement, durability

Evaluating processes and products	. Begin to talk about changes made during the making process, e.g. making a decision to use a different joining method. . To begin to talk about what they made and what they used. I made this train. “I like the way the wheels rotate.” I’ve done this picture. “I can see you have put lots of detail in there, flowers, people, trees” I like this because… I made this…… I did this… I’ve done this…	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 I found….hard/easy because… I like / dislike because... I feel that…..next time. I could… In my opinion……because…	. 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 I think my…. /book is….because… Next time I could…… I found…….hard/easy because… I like / dislike…because… It was interesting because… I like this because…… I like the part where… because… What I found hard about this work was…… I found this piece of work hard/easy because…	. Evaluate their product against original design criteria *e.g. how well it meets its intended purpose* . Disassemble and evaluate familiar products I found this work….because… Next time I could/would…. Maybe you could try…… / I feel that… I enjoyed it because…… ….was successful / ambitious because… You could improve this work by…	. Evaluate their work both during and at the end of the assignment . Evaluate their products carrying out appropriate tests I enjoyed……because…… …..was successful / ambitious because… You could improve this work by… Maybe you could try… Next time I / you could / would…	. Evaluate a product against the original design specification . Evaluate it personally and seek evaluation from others My view is that….because… This is supported by the fact that… In my opinion… furthermore…… However… Possible improvements may include…	. 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. My view is that…In my opinion… This is supported that…… Furthermore…… Possible improv include… Or alternatively