Subject: D & T

NC Strand	EYFS	У1	Challenge	У2	Challenge
Developing, planning and communicating ideas.	Opportunities to notice and discuss materials around them e.g. utensils for cooking, tree barks on a walk, soft furnishings in the classroom. Opportunities to discuss reasons that make activities safe or unsafe e.g. hygiene and electrical awareness. Opportunities to discuss appropriate use of senses e.g. when tasting different foods. Opportunities to use the language of designing and making, e.g. words such as 'join', 'build' and 'shape' as well as evaluative and comparative language - 'longer', 'shorter', 'lighter', 'heavier' and 'stronger'. Children should also learn to record their experiences by, for example, drawing, writing, voice recording or modelling.	 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 	Produce more detailed designs/plans.	 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 	Create their own design criteria and produced more detailed drawings.

Working with tools, equipment, materials and components to make quality products (inc- food)	Learning about planning and adapting initial ideas to make them better, e.g. a child might choose to use scissors, a stapler, elastic bands and glue to join bits together to make a toy vehicle. But they might then modify their initial idea by using masking tape. Children should use a range of tools including scissors, hole punch, stapler, glue spreader, rolling pin, cutter and grater.	 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 	Use tools more confidently and independently (support other children)	 Begin to select tools and materials; use vocab' to name and describe them and explain why they have been chosen Measure, cut and score with some accuracy Use some 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 	Use more advanced sewing techniques to create a more complex garment.
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Evaluating processes and products	Opportunities to notice and discuss materials around them e.g. utensils for cooking, tree barks on a walk, soft furnishings in the classroom. Opportunities to discuss reasons that make activities safe or unsafe e.g. hygiene and electrical awareness. Opportunities to discuss appropriate use of senses e.g. when tasting different foods. Opportunities to use the language of designing and making, e.g. words such as 'join', 'build' and 'shape' as well as evaluative and comparative language - 'longer', 'shorter', 'lighter', 'heavier' and 'stronger'.	• 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	Begin to expand on detail of evaluation of by offering reasons it is the second of the	• Evaluate against some 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 and what went well and what they might change	Expand on evaluation by suggesting reasons for why something went well/ did not work	
Vocabulary	Making houses; Healthy diet; Moving pictures; Design and make a playground; Templates and joining techniques Measure join build shape evaluate longer shorter lighter 'heavier stronger equipment components					
vocabulary	Measure, join, build, shape. evaluate, longer, shorter, lighter, 'heavier, stronger, equipment, components, design, assemble, adapting					

Learning Challenges/Key Questions - KS1

Topic	Learning Challenges/Key Questions
	What resources will you use to construct your house?
Construction:	How will you join materials together?
Making houses	What would you have done differently if you could do it again?
	Children in Y1 will:
	*Know how to make their houses stronger
	*Choose some appropriate materials and tools for task
	* identify likes/dislikes of product
	Children in Y2 will:
	*Choose materials and explain why they have selected them
	*Can measure materials that they are going to use
	* Explain what went well and what they might change with their product
	 What do you have to do before handling food?
Food technology:	 Which tools would you use to cut the food?
e.g. fruit salad	 Why are fruit and vegetables important to us?
 Preparing fruit and 	Children in Y1 will:
vegetables	*Cut food safely
2	*Choose some appropriate tools
e.g. Teddy bear's picnic	* identify likes/dislikes of product
	Children in Y2 will:
	*Describe the ingredients that they are using and why they have chosen them
	*Explain why we need to wash our hands
	* Explain what went well with their product and what they would change in the future
	How can you make part of your picture move?
Moving pictures	 Which tools do you need to help you?
	Can you plan your picture and explain how it will work?
	Chn in Yr1 will:
	*Be able to explain how something works
	*Be able to explain to someone else how they want to make their product
	*Make a simple plan before making
	*Make a product which moves
	* identify likes/dislikes of product

	Chn in Yr 2 will:
	*Be able to join materials and components in different ways
	*Explain what went well and what they would change
Construction: Design and make a	Can you draw your playground, labelling the different parts?
model playground	Can you measure and cut the materials you will need?
1 75	Can you evaluate against a success criterion?
	Chn in Yr 1 will:
	 choose some appropriate resources and tools for task
	 make a simple plan before making
	*explain how elements of the playground move
	* identify likes/dislikes of product
	Chn in Yr2 will:
	* choose tools and materials and explain why they have chosen them.
	* join materials and components in different ways.
	* measure materials to use in a model or structure
	*Explain how parts of the playground are moving
	* explain what went well and what they would change
Textiles - Templates and joining	Can you use tools safely?
techniques- Puppets	Can you use appropriate finishing techniques?
	Yr 1 chn will:
	* explain to someone else how they want to make their product.
	 choose appropriate resources and tools.
	• make a simple plan before making
	* identify likes/dislikes of product
	Yr2 chn will:
	* think of an idea and plan what to do next.
	* explain what went well with their work.
	* explain why they have chosen specific textiles and used certain tools

End of Year Expectations

Strand	Y1 - Children:	Y2 - Children:
Developing, planning and	*can use their own ideas to make something.	*can think of an idea and plan what to do next.
communicating ideas.	*use pictures and words to plan - can make a simple plan before making	*can describe their design using pictures, models and words
Working with tools, equipment,	 can choose appropriate resources and tools 	 can choose tools and materials and explain why they have chosen them.
materials and components to make	*explain what they are making	 can join materials and components in different ways
quality products (inc-food)	*explain what makes a model stronger	*can measure materials to use in a model or a structure
Evaluating processes and products	• can talk about their own work	• can explain what went well with their work and what they would change if they
	*describe how something works	did it again

Ideas for greater depth (at this stage - these general indicators of GD can be applied generically to each year group)

Children working at greater depth in DT will:

- Produce designs which include a greater awareness of the detail and justify their decisions
- Use a range of equipment with a greater degree of accuracy and fluency and control.
- Construct a product which is fit for purpose and in which the materials have been used/joined in a refined and effective manner
- Offer detailed comments about the effectiveness of theirs and others work, utilising with great precision specific vocabulary related to the subject

Subject: D & T.- KS2

NC Strand	У3	Ch	У4	Ch	У5	Ch	У6	Ch
Developing, planning and communicating ideas.	-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	Plan more complex models	-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	Plan more complex models,	-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	Produce designs which include a greater awareness of the detail and justify their decisions	-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	Produce designs which include a greater awareness of the detail and justify their decisions

components to make quality products (inc- food)product - Measu out, cut and assa compone with mo accurac - Work and accurac - Work and accurac - Work and accurac - Work and accurac - Think their id they ma progress willing c things in helps th improve work - Measu or pin, c join fab some ac - Demor hygienic prepara storage - Use fi	nniques ing their re, mark , score emble ents re y safely urately ange of ools about eas as ke s and be hange f this re their re, tape ut and ric with curacy istrate f food tion and nishing	-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 accurately - 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 - Know some ways to adapt approach	Use a range of equipment with a greater degree of accuracy and fluency and control.	-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 <i>e.g. hazards</i> <i>relating to the</i> <i>use of ovens</i> - Cut and join with accuracy to ensure a good- quality finish to the product - Know ways/techniques to adapt approach	Making more adventurous products, combining different technique and being able to explain why they have used that technique	-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 - Proactively change/adapt approach in response to progress on tasks - Achieve a quality product	Construct a product which is fit for purpose and in which the materials have been used/joined in a refined and effective manner
storage	tion and nishing ues hen and	- Know some	. Use a range of ex	- Know	Making more a	- Achieve a	Construct a prod

	appearance of their product using a range of equipment including ICT		communication techniques					
Evaluating processes and products	-Evaluate their product against original design criteria e.g. how well it meets its intended purpose - Disassemble and evaluate familiar products	Explain how effective their product was and be reflective about their work	-Evaluate their work both during and at the end of the assignment - Evaluate their products carrying out appropriate tests	Explain how they could have improved their work in detail with greater attention to the use of technical vocabulary	Evaluate a product against the original design specification - Evaluate it personally and seek evaluation from others	Make detailed comments about the effectiveness of theirs and others work, utilising with precision specific vocabulary related to the subject and backing up ideas with evidence	- Devise own criteria for evaluation → 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	Make a detailed evaluation of the effectiveness of theirs and others work, utilising with great precision specific vocabulary related to the subject \ni evaluate the reliability of the criteria chosen
Topics	structu	res; Simple Cir o 2D-3D shape	nd linkages; Structure cuits and Switches (Textiles) Illercoaster/theme po		_		y; Textiles - Combinir structures; Mechanic r gears	ng different
Vocabulary		cut, score ,asse	emble, tape, pin, eval	uate, test,	temporary, permanent ite, leavers, linkages, f			zers, utensils,

Learning Challenges/Key Questions - KS2

Торіс	Learning Challenges/Key Questions
	 Can you develop and use knowledge of how to construct strong, stiff shell structures?
Construction:	 Can you use technical vocabulary relevant to the project?
Shell Shelters	• Can you select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some
E.g. gift boxes/containers; desk tidy;	accuracy?
disposable/recyclable lunchboxes; packaging; cool boxes; party boxes; keep safe boxes; mystery boxes	• Can you generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product?
	Yr3 chn will:
	* design a product and make sure that it looks attractive.
	* follow a step-by-step plan, choosing the right equipment and materials.
	* select the most appropriate tools and techniques for a given task.
	* work accurately to measure, make cuts and make holes.
	* prove that their design meets some set criteria.
	Yr4 chn will:
	*present a product in an interesting way.
	*measure accurately and use tools and materials with increasing accuracy
	* persevere and begin to suggest some ways to adapt their approach when their original ideas do not work.
	* evaluate their product against criteria and suggest improvements
	•Can you generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated
Simple Circuits and Switches	sketches, cross-sectional and exploded diagrams?
https://www.bbc.com/bitesize/clips/z28b4wx E.g. siren for a toy vehicle; reading light; noise-	• Can you Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities?
making toy;	• Do you know how to construct a simple series electrical circuit in science, using bulbs, switches and buzzers?
nightlight; illuminated sign; torches; table lamp; lighting for display;	• Do you understand and use electrical systems in their products, such as series circuits incorporating
hands-free head lamp; buzzer for school office	switches, bulbs and buzzers?
	Yr3 chn will:
	* follow a step-by-step plan, choosing the right equipment and materials.
	 select the most appropriate tools and techniques for a given task and use them with accuracy
	• make a product which uses both electrical and mechanical components.
	* prove that their design meets some set criteria. Y4 chn will:
	* can present a product in an interesting way.
	* use a range of tools with increasing accuracy
	• persevere and begin to suggest some ways to adapt their approach when their original ideas do not work.
	$m \cdot$ evaluate and suggest improvements for their designs

	· • evaluate products for both their purpose and appearance.
	• explain how they have improved their original design.
Healthy and varied diet	Do you know about healthy eating and varied diet and understand how fruit and vegetables are part of The Eatwell Plate?
E.g. fruit salad; vegetable salads; mixed, layered	• Can you carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs?
salad; fruit and vegetable kebabs;	• Can you select and use appropriate utensils and equipment to prepare and combine ingredients? (peel, cut, slice, squeeze, grate and chop safely?
fruit smoothie; dips; cous cous	• Can you use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas?
	Chn in yr3 will:
	*follow a step-by-step plan, choosing the right equipment and materials.
	* select the most appropriate tools and techniques for a given task.
	* describe how food ingredients can be mixed and combined
	* select the most appropriate tools and techniques for a given task and use them with some degree of accuracy * prove that their product meets some of the criteria set
	Chn in yr 4 will:
	* know how to be both hygienic and safe when using food.
	* measure accurately
	 persevere and begin to suggest some ways to adapt their approach when their original ideas do not work. * evaluate their product against criteria
Construction: Designing a	 Can you develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views
rollercoaster/theme park.	 Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
	Yr3 chn will:
	* design a product and make sure that it looks attractive.
	* follow a step-by-step plan, choosing the right equipment and materials.
	* select the most appropriate tools and techniques for a given task.
	* work accurately to measure, make cuts and make holes.
	* prove that their design meets some set criteria. Yr4 chn will:
	*present a product in an interesting way.
	*measure accurately and use tools with increasing accuracy
	• persevere and begin to suggest some ways to adapt their approach when their original ideas do not work.
	*evaluate their product against criteria

2D-3D shape (Textiles) E.g. purse/wallet; soft toy/mascot; apron; fashion accessory; beach bag; shoe bag; pencil case; story sack	 Can you select fabrics and fastenings according to your functional characteristics e.g. strength, and aesthetic qualities e.g. pattern? Can you test your product against the original design criteria and with the intended user? Do you know how to strengthen, stiffen and reinforce existing fabrics? Chn in yr3 will: design a product and make sure that it looks attractive. choose a textile for both its suitability and its appearance. follow a step-by-step plan, choosing the right equipment and materials. select the most appropriate tools and techniques for a given task and use them some accuracy * prove that their design meets some set criteria. Chn in yr4 will: measure accurately and use tools with increasing accuracy persevere and begin to suggest some ways to adapt their approach when their original ideas do not work.
Levers and linkages E.g. story book; poster; class display; greetings card; information book; storyboard	 *evaluate products for both their purpose and appearance. Can you select from and use finishing techniques suitable for the product they are creating? Can you investigate and analyse books and, where available, other products with lever and linkage mechanisms? Can you distinguish between fixed and loose pivots? Year 5 chn will: come up with a range of ideas after collecting information from different sources. roduce a detailed, step-by-step plan use a range of tools and equipment competently. make a prototype before make a final version. work accurately to measure, make cuts and make holes. *evaluate appearance and function against original criteria. Year 6 chn will: can show that they consider culture and society in their plans and designs. assemble components with precision and adapt the way they work in response to situations that arise can evaluate their product against clear criteria, which they have devised

Structures - Frame structures E.g. fairground ride with gears or pulleys (carousel, Ferris wheel) controllable toy vehicle with gears or pulleys (dragster, off-road vehicle, sports car, lorry) window display with moving parts (lifting or turning items for sale)	 Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches? Can you use finishing and decorative techniques suitable for the product they are designing and making? Do you understand how to strengthen, stiffen and reinforce 3-D frameworks? Year 5 chn will: * produce a detailed, step-by-step plan. *suggest alternative plans; outlining the positive features and draw backs. *work accurately to measure, make cuts and make holes. * evaluate their product against the original/set criteria Year 6 chn will: * follow and refine their plans. • justify their plans in a convincing way. * assemble components with precision and adapt the way they work in response to situations that arise • evaluate their product against a clear criterion, which they have devised
Celebrating Culture and Seasonality- Hot Choose from: different types of bread; pizza; savoury biscuits; savoury scones; cheese straws	 Can you write a step-by-step recipe, including a list of ingredients, equipment and utensils? Can you carry out sensory evaluations of a range of relevant products and ingredients? Record the evaluations using e.g. tables/graphs/charts such as star diagrams. Do you know and understand about food hygiene, nutrition, healthy eating and a varied diet? Understand what is meant by The Eatwell Plate. Year 5 chn will: * explain how a product will appeal to a specific audience. * be both hygienic and safe in the kitchen. * can describe how food ingredients can be combined and the effect Year 6 chn will: * explain how products should be stored and give reasons * show that they consider culture and society in their plans and designs. * utilise ingredients with precision and adapt the way they work in response to situations that arise * evaluate their product against criteria they have devised

Combining Different Fabric Shapes E.g tablet case; mobile phone carrier; shopping bag; insulating bag; hat/cap; garden tool belt; slippers; sandals; fabric advent calendar; fabric door stop	 Can you Produce detailed lists of equipment and fabrics relevant to their tasks? Can you investigate and analyse textile products linked to their final product? Do you know that a 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics? Chn in yr5 will: *come up with a range of ideas after collecting information from different sources. * produce a detailed, step-by-step plan. *suggest alternative plans; outlining the positive features and draw backs. * work accurately to measure, make cuts and make holes and assemble components with expertise * evaluate appearance and function against original criteria. Chn in yr 6 will: * follow and refine their plans. * justify their plans in a convincing way. * assemble components with precision and adapt the way they work in response to situations that arise
	* test and evaluate their products against criteria they have devised
More Complex Switches and Circuits Choose from: vehicle alarm; security lighting system; alarm for valuable artefact; automatic nightlight; electrical board game; alarm for school shed	 Can you competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product? Can you create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment? Can you apply their understanding of computing to program, monitor and control their products?
	 Chn in Yr5 will: * make a product which uses both electrical and mechanical components. * use come up with a range of ideas after collecting information from different sources. • produce a detailed, step-by-step plan. • suggest alternative plans; outlining the positive features and draw backs. • assemble components with expertise • explain how a product will appeal to a specific audience and evaluate its success against set criteria
	 Chn in yr 6 will: * use market research to inform their plans and ideas. * follow and refine their plans. * justify their plans in a convincing way. * assemble components with precision and adapt the way they work in response to situations that arise * work within a budget. * test and evaluate their products against criteria they have devised

End of Year Expectations

Strand	Y3 - Children will know:	Y4 - Children will know:
Developing, planning and communicating ideas.	 how to make a realistic design in response to a brief how to put together a step by step plan, detailing the equipment and materials required 	• How to use ideas from other people when they are designing → they will begin to explain how they can improve their original design
Working with tools, equipment, materials and components to make quality products (inc-food)	 can follow a step by step plan and select the most appropriate materials, tools and techniques for a given task and use them accurately 	 how to present a product in an interesting way. how to use a range of tools with a good level of accuracy, measuring and cutting accurately how to persevere and begin to suggest ways that they can adapt their approach when their original ideas do not work.
Evaluating processes and products	 how to prove that their design meets some set criteria and be able to explain what they have changed from the original design 	 can evaluate and suggest improvements for their designs can evaluate products for both their purpose and appearance. can explain how they have improved their original design.

Strand	Y5 - Children:	Y6 - Children:
Developing, planning and communicating ideas.	 can come up with a range of ideas after collecting information from different sources. can produce a detailed, step-by-step plan. can suggest alternative plans; outlining the positive features and draw backs. can explain how a product will appeal to a specific audience. 	 can use market research to inform their plans and ideas. can follow and refine their plans. can justify their plans in a convincing way. can show that they consider culture and society in their plans and designs.
Working with tools, equipment, materials and components to make quality products (inc-food)	 can use a range of tools and equipment with some expertise can make a prototype before make a final version. know how to work accurately, measuring, cutting and joining effectively etc. and ways that they can adapt their approach 	* can use tools and equipment with expertise and precision *pro-actively change the way they are working in response to the progress on the task
Evaluating processes and products	 can evaluate appearance and function against original criteria and suggest improvements * regularly check their work against the original design 	 can evaluate their product against clear criteria, which they have devised, and suggest improvements *identify what would have made the finished product better

Ideas for greater depth (at this stage - these general indicators of GD can be applied generically to each year group)

Children working at greater depth in DT will:

- Produce designs which include a greater awareness of the detail and justify their decisions
- Use a range of equipment with a greater degree of accuracy and fluency and control.
- Construct a product which is fit for purpose and in which the materials have been used/joined in a refined and effective manner
- Offer detailed comments about the effectiveness of theirs and others work, utilising with great precision specific vocabulary related to the subject