Design Technology ,progression of skills and knowledge.

Key DT skills

Design:
Make appropriate suggestions for the appearance and materials for an item, consider how it will be made.

Make:
Choosing and using the appropriate tools, equipment and resources to make ***high quality*** prototypes and products ***following the design***.

Evaluate:
Critique, evaluate and test ideas and products, suggesting ideas for improvements and explaining how the product is suitable for purpose.

Technical knowledge:
Use and apply knowledge of materials, fixings and linkages to reinforce structures and build models with moving parts.

Food and nutrition:
Understand the principles of nutrition and healthy eating, use basic techniques for food preparation and cooking.

Areas to be covered: food, textiles, construction, technological developments. **These should incorporate:** health & safety, design, electronics & electricals, mechanics & engineering, tools & equipment.

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Plan , build communicate and draw their designs. Experimenting creating in continuous provision activities . Create collaboratively, sharing ideas, resources and skills	Design a functional product with a purpose for themselves and others. Design a product to do a specific job. Draw and label pictures of their design ideas. Discuss their ideas and explain their choices.	Design an appealing and functional product with a purpose for themselves and others. Use a set of criteria to aid the design process. Draw, and make notes on, their design ideas. Explain what they are making, and what they will need to use.	Design an appealing and functional product with a clear purpose and use for themselves and others. Sketch and label diagrams of their design ideas. Discuss their ideas and explain the purpose, choice of materials, any necessary changes and how it will be made.	Design an appealing and functional product for a particular audience. Create design criteria for a product. Use sketches, labelled diagrams and notes to explain their design. Explain their ideas, the purpose, choice of materials, any necessary changes and	Research existing products and develop design criteria. Design functional, appealing products aimed at particular individuals or groups. Create detailed design criteria for a product. Communicate ideas by developing sketches, labelled diagrams and notes to support their design.	Research existing products to inform design choices and criteria, taking into consideration user needs. Design innovative, functional, appealing products aimed at particular individuals or groups. Develop a set of criteria, based on research, to aid design process. Communicate ideas by using cross-sectional diagrams, exploded diagrams, prototypes, pattern

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				Explain what they are making, why they are making it and what they will need to use.	how it will be made. Explain what they are making, why they are making it and what they will need to use, using the design criteria.	Communicate ideas through discussion, presentation and peer critique. Adapt designs, if needed, after design discussion.,	ideas and computer-aided design. Communicate ideas through oral and ICT presentations. Adapt designs, where necessary, based of design feedback.
Make	Develop their small motor skills so that they can use a range of tools competently, safely and confidently. E.g., tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.	Name the tools they are using and know how to use them safely. Use given tools to cut, shape, join and finish products. Explore different materials and components to find appropriate ways of joining materials.	Select and name appropriate tools and equipment needed from a given range. Know which equipment is used for cutting, shaping joining and finishing. Select from a wide range of materials and components, depending on use.	Select and name appropriate tools and equipment needed from a suggested range Know and choose which equipment is used for cutting, shaping joining and finishing from a suggested range. Know some characteristics of materials and components and select from a wide range of these, depending on use.	Select and name appropriate tools and equipment needed Know and choose which equipment is used for cutting, shaping joining and finishing. Know the characteristics of materials and components and select, depending on use.	Select, name and use appropriate tools and equipment safely and accurately. Use some specialist equipment accurately and safely. Select from and use a range of specific materials and components according to their specific use and appearance	Select from and use a wider range of specialist tools and equipment. Use specialist equipment for a specific purpose accurately and safely. Select from and use a wider range of specific materials and components according to their use and aesthetic properties.

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Evaluate	Encourage children to think how they can improve their designs ,structures models. Create collaboratively with peers sharing ideas, resources and skills.	Explore, investigate and use existing products. Say whether or not their product does the job it is supposed to. Explain why their product is good.	Explore and evaluate existing products. Say why a product is good (or not) and what job it does (and if it good / bad at this job). Evaluate their product against their design criteria.	Explore and analyse existing products. Consider why products are good (or not) and how effective they are at meeting their purpose. Suggest ways of improving their own and others' work. Consider how some products have helped the world.	Explore and analyse existing products against a set of criteria. Consider how products were made, why they are good (or not) and how effective they are at meeting their purpose. Suggest ways of improving their own and others' work based on how effective the product is. Consider how some people and products have helped the world.	Investigate, explore and analyse a range of existing products based on a set of criteria. Evaluate their ideas, prototypes and products against a specific set of criteria. Suggest ways of improving their own and others' work, using their criteria Consider how some people and products have changed the world.	Investigate and explore a range of existing products, considering construction and purpose. Evaluate their ideas, prototypes and products against a specific set of criteria they have devised. Suggest ways of improving own and others' work, using specific criteria. Identify and understand how key events and individuals in design and technology have helped shape the world.
Technical knowledge	Use all their senses in hands on exploration of materials.	Build structures and explore how they can be made stiffer	Build structures and investigate how they can be made	Explore how to make structures stronger, stiffer and more stable using	Explore how to make structures stronger, stiffer and more stable	Explain how to make structures stronger, stiffer and more stable using	Design and build more complex frameworks, using a range of materials to support mechanisms.

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	Talk about what they see and how things work. Make collections. Compare same and different. Explore natural world.	and stronger using a range of materials. Explore ways of joining cards to make it move (e.g., split pins). Create models with wheels and axels.	stronger, stiffer and more stable. Explore different ways of joining similar materials together. Create models with wheels, axels and hinges. Explore and use levers and sliders to move part of their product.	more / other materials. Explore different ways of joining things together. Create models which use wheels, axels, hinges to make specific parts move. Explore and incorporate simple circuits and bulbs into their product.	using a variety of materials. Explore and different ways of joining things together (both moving joints and fixed joints). Create models which use wheels, axels, hinges and other moving parts for a specific purpose. Explore and investigate series circuits, bulbs, buzzers and motors. Use ICT to program and control a moving product.	engineered designs (e.g., diagonal struts). Explore and analyse a range of linkages (ways of fixing and joining materials – temporary, fixed and moving) to change movement (e.g., make it larger or varied). Create models which use gears, pulleys, levers and linkages for a specific purpose. Create models which use series circuits, switches, bulbs, buzzers and motors. Use ICT to monitor, program and control their products.	Apply understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use CAM mechanisms to create moving models. Understand and use a range of electrical systems in their products, such as series circuits, incorporating switches, bulbs, buzzers and motors. Apply their understanding of computing to program, monitor and control their products.
Cooking and nutrition	Understand the importance of healthy fruits and vegetables.	Understand which foods healthy and which foods are treats. Suggest healthy dishes to prepare and make. Understand where some	Understand what a healthy and varied diet is. Use knowledge of healthy eating to prepare dishes. Understand where food	Understand what a healthy, varied and balanced diet is. Choose, prepare and cook dishes using some	Understand why we need to eat a healthy, varied and balanced diet. Understand why we need particular food groups.	Understand which foods will provide a healthy, varied and balanced diet. Understand which food groups help our	Understand and apply the principles of a healthy and varied diet. Understand which foods are sources of required nutrition (including minerals, vitamins, etc.)

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		foods come from (meat, fruit and veg).	comes from (plant or animal).	cooking techniques. Understand where fruit, vegetables, meat and meat products come from.	Choose, prepare and cook dishes using different cooking techniques. Know which foods can be grown or reared locally.	bodies to function. Prepare and cook a variety of dishes using different cooking techniques based on a specific audience. Understand why we can only grow some foods in our country and why we need to get some foods from other countries.	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.