DT overview and progression of skills (Nursery - Year 6)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	**Cooking and Nutrition** Outcome: fruit kebabs		**Structures** Outcomes: Rockets		**Textiles** **Weaving**	
Reception		**Cooking and nutrition** Outcome: Soup	**Structures and testing materials** Outcome: Boats		**Textiles** **Outcome:** Bookmarks	
Continuous provision - junk modelling table in EYFS						
1		**Mechanisms** Levers and sliders Outcome: cards		**Cooking and Nutrition** Smoothies		**Textiles** Puppets
2		**Cooking and nutrition** Wraps		**Textiles** Pouches		Structures Baby bear's chair
3		**Cooking and Nutrition** Pizza	**Mechanisms** - Levers and sliders Outcome: book		**Textiles** -cushions	
4		**Cooking and Nutrition** Savory biscuits		**Mechanisms** **Moving toys**		**Digital Timer with Mircobits**
5	**Structures** Bridges		**Electrical systems** Doodlers		**Cooking and Nutrition** Pasta sauce	
6		**Textiles and**	SATS			**Cooking and**

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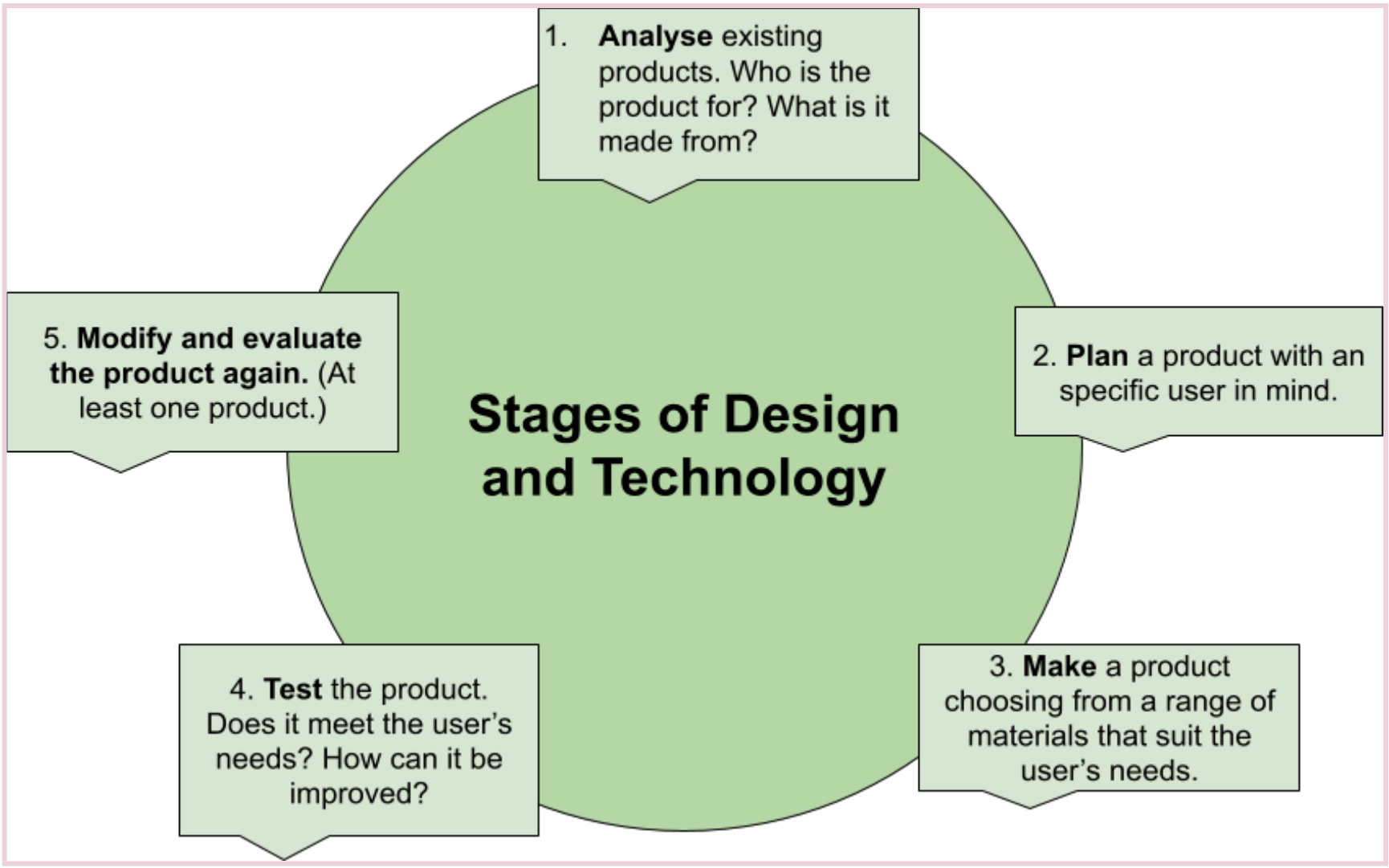
		microbits Wearable technology				**Nutrition** Buffet

User	Purpose	Functionality	Design Decisions	Innovation	Authenticity
Who is this product for? What specific needs does the user have?	What does the product do? Does it have a clear purpose that meets the user's needs?	How does the product function? Can you test this?	When planning and making are children given opportunities to make decisions about the materials and components and how they will work?	Are children allowed to be creative with their planning? Do the final products look the same?	
The user could be themselves, an imaginary character, another person, client, consumer or a specific target audience.	*Children should know what the products they design and make are for. Each product should perform a clearly defined task that can be evaluated in use.*	*Products often combine aesthetic qualities with functional characteristics. In D&T, it is insufficient for children to design and make products which are purely aesthetic.*	*When designing and making, children need opportunities to make informed decisions such as selecting materials, components and techniques and deciding what form the products will take, how they will work, what task they will perform and who they are for.*	W*hen designing and making, children need some scope to be original with their thinking. Projects that encourage innovation lead to a range of design ideas and products being developed, characterised by Engaging, open-ended starting points for children's learning.*	*Children should design and make products that are believable, real and meaningful to themselves i.e. not replicas or reproductions or models which do not provide opportunities for children to make design decisions with clear users and purposes in mind.*
Take from the Design and Technology Association					


1. **Analyse** existing products. Who is the product for? What is it made from?
2. **Plan** a product with an specific user in mind.
3. **Make** a product choosing from a range of materials that suit the user's needs.
4. **Test** the product. Does it meet the user's needs? How can it be improved?
5. **Modify and evaluate the product again.** (At least one product.)
Stages of Design and Technology

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D&T Cooking and Nutrition							
Nursery **Fruit kebabs/ fruit salad**	**Reception** **Soup**	**Year 1** **Smoothies**	**Year 2** **Wraps**	**Year 3** **Pizza**	**Year 4** **Savory biscuits**	**Year 5** **Pasta sauce**	**Year 6** **Buffet**
• Test a range of food types and discuss using their senses. • Plan a simple dish. • Use a wide range of vocabulary. • Start eating independentl y and learning how to use a knife and fork. • Use one-handed tools and equipment, such as knives, forks and spoons • Be increasingly independent in meeting	• Taste test food products that already exist and use their senses to describe. • Plan a simple dish. • Develop their fine motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools:knives, forks and spoons. • Know and talk about the different factors that support their overall health and wellbeing: healthy eating	• Test existing products and understand who the product is for. • Begin to know what a healthy diet is • Identify fruit and vegetables and know their benefits • Know about hygiene related to food preparation • Know how to use tools safely such as a butter knife, plastic grater • Know about portion sizes • Prepare a simple dish • Understand where food comes from, for example	• Test existing products and identify the user. • Plan a product with a specific user in mind. • Discuss where food comes from, show ingredients in their original state. • Discuss why some foods are favourites • Discuss the effect on food on the body • Use simple scales or balances • Understand main rules of food hygiene • Name and sort foods into the five groups in The eatwell plate	• Know the main food groups • Discuss seasonal food and links to geography • Continue to develop food technology skills through a range of cutting activities • Create a variety of simple and mostly savoury dishes from around the world • Understand safe food storage • Begin to select their own ingredients when cooking or baking	• Meet an identified need - Create a dish for someone with a special diet, gluten free, dairy free etc. • Discuss the importance of exercise and a healthy diet • Evaluate food by taste, texture, flavour etc. • Make good presentation of food	Research facts about famous inventors/ chefs / designers etc. linked to product • Know the impact of a healthy balanced diet and the impact of an unhealthy diet. • Create dishes using a variety of techniques. • Understand seasonality & plan menus/dishes accordingly. • Understand how food is grown, harvested & processed. • Work in a safe and hygienic way	• Plan and create a healthy meal based on the skills they have used across all year groups • Limit ingredients • Create dishes using a variety of techniques • Understand and apply basic food hygiene and safety rules in the kitchen. • Budget & menu planning • Safe use of knives with a range of chopping skills • Safe use of electronic kitchen devices

their own care needs, e.g. brushing teeth, using the toilet, washing and drying their hands thoroughly. ● Make healthy choices about food, drink, activity and tooth brushing.	● Learn new vocabulary. ● Evaluate a dish through discussion.	plants and animals ● Evaluate a product ● Make changes to a product to enhance it.	● That everyone should eat at least five portions of fruit and vegetables every day ● Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing. ● Evaluate a product			● Meet an identified need – e.g. a meal for a person with an allergy.	

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D&T - Structures							
Nursery Structures	**Reception Boats and structures**	**Year 1**	**Year 2 Baby bear's chair**	**Year 3**	**Year 4**	**Year 5 Bridges**	**Year 6**
• Discuss what the product is, it's purpose and who the user might be • They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function • Use a range of joining materials such as tape, glue, paperclips. • Cut shapes using scissors and other tools.	• Explore products, discuss who the user might be, design their own products. • Develop their fine motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons. • Continue to use a range of joining materials such as		• Understand what a product is and who it is for • Understand how a product works and how it is used • Identify where you might find this product • Understand and develop movement of simple mechanisms • Building simple structures & investigating how they can be improved • Select tools and techniques appropriate to the job • Describe how a product works			• Identify who made the product, when it was made and what its purpose is • Identify what the product has been made from and how environmentally friendly the materials are • Identify the cost to make the product • Research facts about famous inventors/ chefs/ designers etc. linked to products. • Design a stable structure that can support weight.	

	tape, glue, paperclips		& why it might be useful ● Identify stable and unstable structural shapes. ● Identify features that make a structure stable. ● Work independently to make a stable structure, following a demonstration. ● Explain how they made their model strong, stiff and stable.			● Identify where a structure needs support. ● Create annotated sketches and plans using CAD.	

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	D&T Textiles				
Nursery Weaving	**Reception Bookmarks**	**Year 1 Puppets**	**Year 2 Pouches**	**Year 3 Cushions**	**Year 6 Wearable technology**
• Explore different materials freely, to develop their ideas about how to use them and what to make. • Develop their own ideas and then decide which materials to use to express them • Show a preference for a dominant hand. • Describe their movements using language such as under, over and pull.	• Discuss what a good design needs • Design a simple pattern • Design a bookmark • Choose from available materials • Develop fine motor skills with a variety of materials • Use a prepared needle and wool to practise threading • Reflecting on a finished product and comparing to their design • To know that a design is a way of planning our idea before we start. • To know that threading is putting one material	• Explain who their product will be used by • Describe what their product will be used for • Discuss and explore materials • Cut fabric neatly with scissors. • Create a simple template. • Use joining techniques. • Reflect on a finished product. • Measure carefully. • Evaluate a product. • Explaining in simple terms why tools must be handled carefully. • Following and recalling simple safety instructions. • Using a straight edge to draw a straight line • Begin to use objects with a fixed width or length to create even	• Understand what a product is and who it is for • Understand how a product works and how it is used Identify where you might find this product • Identify the materials used to make the product • Use own experiences and existing products to develop ideas • Explain what product they will be designing and making • Thread a needle • Sew a running stitch • Choose from a selection of materials • Create a template • Use a variety of joining methods such as sewing, stapling, gluing	• Identify who made the product, when it was made and what its purpose is Identify what the product has been made from • Research facts about famous inventors/ chefs/ designers etc. linked to product • Understand and gather information about what a particular group or people want from a product • Measure/ cut out using cm and weigh in grams • Choose tools and equipment which are appropriate for the job • Prepare for work by assembling components together before joining • Make the finished product neat and tidy	• Identify who made the product, when it was made and what its purpose is • Identify what the product has been made from and how environmentally friendly the materials are • Identify the cost to make the product and whether it has any other purposes e.g. Leading innovation of the time, trend setting, etc. • Research facts about famous inventors/ chefs/ designers etc. linked to product • understand and gather information about what a particular group or people want from a product, using questionnaires, surveys etc

	through an object	spacing of markings or cuts (e.g. a lolly stick) ● Using a large plastic needle and embroidery fabric to begin to create a running stitch. .	● Draw pictures with labels, with some text ● Measure out and cut fabric ● Practise skills before using them ● Select tools and techniques appropriate to the job ● Follow basic safety rules ● Reflect on a finished product and make amendments	● Thread a needle ● Sew a running stitch ● Choose from a selection of materials ● Create a template	● Use a template to mark and cut out a design. ● Use a running stitch to join fabric to make a functional waistcoat. ● Consider a range of factors in their design criteria(user, size,material etc…) ● Attach a secure fastening, as well as decorative objects. ● Create a template using CAD ● Program a micro bit to create a flashing light. ● Evaluate their final product ● Use a wider range of tools and equipment (sewing machines and hand sewing). ● Sew accurately with small evenly spaced neat stitching ● Select and join fastenings to a garment.

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D&T - Mechanisms					
Year 1 **Cards**	**Year 2**	**Year 3** **Books**	**Year 4** **Moving toys** **Cars**	**Year 5**	**Year 6**
● Design and discuss products for themselves and other users. ● Make strong and stable structures from card and other materials ● Choose from a range of materials and equipment to suit a specific task ● Identify whether a mechanism is a side-to-side slider or an up-and-down slider and determine what movement the mechanism will make. ● Clearly label drawings to show which parts of their design will move and in which direction. ● Make a picture that meets the design criteria, with parts that move		● Identify who made the product, why it was made and what its purpose is ● Identify what the product has been made from ● Research facts about famous inventors/ chefs/ designers etc. linked to product ● Measure/ cut out using cm and weigh in grams ● Choose tools and equipment which are appropriate for the job ● Prepare for work by assembling components together before joining ● Use scoring and folding for precision	● Investigate a range of products to see how they work ● Understand designs must meet a range of criteria and constraints ● Take users' views into account ● Add mechanisms and or electricity to create motion or make light. ● Use permanent and temporary fastenings to join ● Understand how wheels, axles, turning mechanisms, hinges and levers all work together ● Combine a number of components		

purposefully as planned. ● Evaluate the main strengths and weaknesses of their design and suggest alterations. ● Measure and cut accurately		● Make holes using a punch and drill ● Work out how to make models stronger ● Make the finished product neat and tidy	together in different way ● Describe key design improvements in the history of the automobile. ● Measure and compare the distance travelled by different mechanical cars. ● Choose and use appropriate tools and materials to make mechanical cars. ● Draw exploded diagrams and annotated sketches of my different mechanical cars. ● Use a problem statement to identify the design criteria.		

			• Assess the product against the design criteria. • Conduct market research into existing products. • Provide specific feedback and adjust my design to incorporate customer feedback.		

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Electrical systems or Digital world		
Year 4 - microbits	Year 5	Year 6 microbits
● State and/or describe the advantages and disadvantages of existing products ● Understand how virtual micro:bit features could be used as part of a design idea. ● Use research to inform design criteria. ● Write a program that displays a timer on the virtual micro:bit based on their chosen seconds/minutes ● Suggest where the errors are, if testing is unsuccessful, by comparing the correct code to their own. ● Express which stages of the project they enjoyed or found more challenging. ● Recall and describe the name and use of key tools used in (CAD) software. ● Fulfil the design requirements of the logo. ● Evaluate the product using feedback from the user. ● State and/or describe the advantages and disadvantages of existing products ● Understand how virtual micro:bit features could be used as part of a design idea. ● Use research to inform design criteria. ● Write a program that displays a timer on the virtual micro:bit based on their chosen seconds/minutes ● Suggest where the errors are, if testing is unsuccessful, by comparing the correct code to their own. ● Express which stages of the project they enjoyed or found more challenging. ●	● Research facts about famous inventors/ chefs / designers etc. linked to product ● Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] ● Explain what a series circuit is. ● Plan the order of work by thinking ahead ● Produce step by step plans ● Investigate existing products ● Use various sources of information and draw on them in design ● Understand how some properties can be used – e.g. waterproof ● Evaluate the product using feedback from the user.	● Research facts about famous inventors/ chefs / designers etc. linked to product ● Describe the purpose of their product Identify design features that will appeal to intended users ● Consider a range of factors in their design criteria(user, size,material etc…) ● Use a template to mark and cut out a design. ● Use a running stitch to join fabric to make a functional waistcoat. ● Attach a secure fastening, as well as decorative objects. ● Create a template using CAD ● Program a micro bit to create a flashing lightEvaluate their final product

● Writing design criteria for a programmed timer (micro:bit). ● Exploring different mindfulness strategies. ● Applying the results of research to further inform my design criteria. ● Developing a prototype case for a mindful moment timer. ● Using and manipulating shapes and clipart by using computer-aided design (CAD), to produce a logo. ● Creating a 3D model using modelling materials. ● Investigating and analysing a range of timers by identifying and comparing their advantages and disadvantages. ● Evaluating a program against points on a design criteria and amending them to include any changes made.		