

	National Curriculum aim 1	National Curriculum aim 2	National Curriculum aim 3
Year 1	Mechanisms. <i>To create a mechanism including wheels and axles</i>	Structures <i>To create a free standing structure</i>	Cookery <i>Design and make a smoothie</i>
Year 2	Mechanism <i>To create a mechanism including leverages and sliders.</i>	Textiles. <i>To create a Christmas decoration using different join for fabric.</i>	Cookery. <i>Design and make a healthy wrap</i>
Year 3	Mechanisms <i>To create a mechanism using a pneumatic system.</i>	Structures <i>To create a shell structure.</i>	Cookery <i>Design and create a savory dish using fresh ingredients.</i>
Year 4	Textiles <i>To create a Christmas stocking using different fastenings and layering fabric.</i>	Electrical System <i>To create an electrical system containing a battery.</i>	Cookery <i>Design and create food within a budget.</i>
Year 5	Textiles <i>To use a blanket stitch to join fabric and create a decorative piece.</i>	Mechanisms. <i>To create a mechanism including gears or pulleys.</i>	Cookery <i>Design and create a healthy recipe.</i>
Year 6	Structures <i>To strengthen, stiffen and reinforce a structure.</i>	Electrical system <i>To create an electrical system controlled by a circuit.</i>	Cookery <i>Design and create their own recipe.</i>

DT Progression of skills

	EYFS	1	2	3	4	5	6
DESIGN							
Contexts, users and purposes Generate, develop, model and communicate ideas	<ul style="list-style-type: none">Select appropriate resourcesUse gestures, talking and arrangements of materials and components to show designUse contexts set by the teacher and myselfUse language of designing and making (join, build, shape, longer, shorter, heavier etc.)	<ul style="list-style-type: none">Have own ideasexplain what I want to doExplain what my product is for, and how it will workuse pictures and words to plandesign a product for myself following design criteriaresearch similar existing products	<ul style="list-style-type: none">have own ideas and plan what to do nextexplain what I want to do and describe how I may do itexplain purpose of product, how it will work and how it will be suitable for the userdescribe design using pictures, words, models and diagramsdesign products for myself and others following design criteriachoose best tools and materials, and explain choicesuse knowledge of existing products to produce ideas	<ul style="list-style-type: none">Begin to research others' needsshow design meets a range of requirementsdescribe purpose of productfollow a given design criteriahave at least one idea about how to create productcreate a plan which shows order, equipment and toolsdescribe design using an accurately labelled sketch and wordsmake design decisionsexplain how product will workMake a prototype	<ul style="list-style-type: none">Use research for design ideasShow design meets a range of requirements and is fit for purposeBegin to create own design criteriaHave at least one idea about how to create product and suggest improvements for design.Produce a plan and explain it to othersSay how realistic plan is.Include an annotated sketchMake and explain design decisions considering availability of resourcesExplain how product will workMake a prototype	<ul style="list-style-type: none">Use internet and questionnaires for research and design ideasTake a user's view into account when designingBegin to consider needs/wants of individuals/groups when designing and ensure product is fit for purposeCreate own design criteriaHave a range of ideasProduce a logical, realistic plan and explain it to others.Use cross-sectional planning and annotated sketchesMake design decisions considering time and resources.Clearly explain how parts of product will work.Model and refine design ideas by making prototypes and using pattern pieces.Begin to use computer-aided designs.	<ul style="list-style-type: none">Draw on market research to inform designUse research of user's individual needs, wants, requirements for designIdentify features of design that will appeal to the intended userCreate own design criteria and specificationCome up with innovative design ideasFollow and refine a logical plan.Use annotated sketches, cross sectional planning and exploded diagramsMake design decisions, considering, resources and costClearly explain how parts of design will work, and how they are fit for purposeIndependently model and refine design ideas by making prototypes and using pattern piecesUse computer aided designs.
End of KS expectations: <ul style="list-style-type: none">Design purposeful, functional, appealing products for themselves and other users based on design criteriaGenerate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology				End of KS expectations: <ul style="list-style-type: none">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 groupsGenerate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer aided design			
MAKE							
Organisation and planning Practical skills and techniques	<ul style="list-style-type: none">Construct with a purpose, using a variety of resourcesUse simple tools and techniquesBuild / construct with a wide range of objectsSelect tools & techniques to shape, assemble and join	<ul style="list-style-type: none">Explain what I'm making and whyconsider what I need to do nextselect tools/equipment to cut, shape, join, finish and explain choicesMeasure, mark out, cut and shape, with support	<ul style="list-style-type: none">Explain what I am making and why it fits the purposeMake suggestions as to what I need to do next.Join materials/ components together in different waysMeasure, mark out, cut and shape materials and components, with support.	<ul style="list-style-type: none">Select suitable tools/equipment, explain choices; begin to use them accuratelySelect appropriate materials, fit for purpose.Work through plan in orderConsider how good product will beBegin to measure, mark out, cut and	<ul style="list-style-type: none">Select suitable tools and equipment, explain choices in relation to required techniques and use accuratelySelect appropriate materials, fit for purpose; explain choicesWork through plan in order.	<ul style="list-style-type: none">use selected tools and equipment with good level of precisionproduce suitable lists of tools, equipment/materials neededSelect appropriate materials, fit for purpose; explain choices, considering functionalitycreate and follow detailed step-by-step plan	<ul style="list-style-type: none">use selected tools and equipment preciselyProduce suitable lists of tools, equipment, materials needed, considering constraintsSelect appropriate materials, fit for purpose; explain choices, considering functionality and aestheticscreate, follow, and adapt detailed step-by-step plans

	<ul style="list-style-type: none"> Replicate structures with materials / components Discuss how to make an activity safe and hygienic Record experiences by drawing, writing, voice recording 	<ul style="list-style-type: none"> Choose suitable materials and explain choices Try to use finishing techniques to make product look good Work in a safe and hygienic manner 	<ul style="list-style-type: none"> Describe which tools I'm using and why Choose suitable materials and explain choices depending on characteristics. Use finishing techniques to make product look good Work safely and hygienically 	shape materials/components with some accuracy <ul style="list-style-type: none"> Begin to assemble, join and combine materials and components with some accuracy Begin to apply a range of finishing techniques with some accuracy 	<ul style="list-style-type: none"> Realise if product is going to be good quality Measure, mark out, cut and shape materials/components with some accuracy Assemble, join and combine materials and components with some accuracy apply a range of finishing techniques with some accuracy 	<ul style="list-style-type: none"> explain how product will appeal to an audience mainly accurately measure, mark out, cut and shape materials/components *mainly accurately assemble, join and combine materials/components mainly accurately apply a range of finishing techniques use techniques that involve a small number of steps Begin to be resourceful with practical problems 	<ul style="list-style-type: none"> Explain how product will appeal to audience; make changes to improve quality Accurately measure, mark out, cut and shape materials/components Accurately assemble, join and combine materials/components Accurately apply a range of finishing techniques Use techniques that involve a number of steps Be resourceful with practical problems.
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End of KS Expectations:

- 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

End of KS expectations:

- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], 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

EVALUATE

Own products and their processes	<ul style="list-style-type: none"> Adapt work if necessary Dismantle, examine, talk about existing objects/structures Consider and manage some risks Practise some appropriate safety measures independently Talk about how things work Look at similarities and differences between existing objects / materials / tools Show an interest in technological toys Describe textures 	<ul style="list-style-type: none"> Talk about my work, linking it to what I was asked to do talk about existing products considering: use, materials, how they work, audience, where they might be used talk about existing products, and say what is and isn't good talk about things that other people have made begin to talk about what could make product better 	<ul style="list-style-type: none"> Describe what went well, thinking about design criteria talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion evaluate how good existing products are talk about what I would do differently if I were to do it again and why 	<ul style="list-style-type: none"> Look at design criteria while designing and making use design criteria to evaluate finished product Say what I would change to make design better begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose begin to understand by whom, when and where products were designed learn about some inventors/designers/engineers/chefs/manufacturers of ground breaking products 	<ul style="list-style-type: none"> refer to design criteria while designing and making use criteria to evaluate product Begin to explain how I could improve original design Evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose Discuss by whom, when and where products were designed Research whether products can be recycled or reused know about some inventors/designers/engineers/chefs/manufacturers of ground-breaking products 	<ul style="list-style-type: none"> Evaluate quality of design while designing and making Evaluate ideas and finished product against specification, considering purpose and appearance. Test and evaluate final product Evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose begin to evaluate how much products cost to make and how innovative they are Research how sustainable materials are Talk about some key inventors/designers/engineers/chefs/manufacturers of ground breaking products 	<ul style="list-style-type: none"> Evaluate quality of design while designing and making; is it fit for purpose? keep checking design is best it can be. Evaluate ideas and finished product against specification, stating if it's fit for purpose Test and evaluate final product; explain what would improve it and the effect different resources may have had Do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose Evaluate how much products cost to make and how innovative they are Research and discuss how sustainable materials are Consider the impact of products beyond their intended purpose Discuss some key inventors/designers/engineers/
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							chefs/manufacturers of ground breaking product
End of KS expectations:				End of KS expectations:			
<ul style="list-style-type: none"> Explore and evaluate a range of existing products Evaluate their ideas and products against design criteria 				<ul style="list-style-type: none"> 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 			

Technical knowledge	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mechanisms:	<ul style="list-style-type: none"> To know what wheels, axels and axel holders are To know the difference between fixed and free moving axels To know simple methods to fix wheels and axels to a product To know simple commercial products that use wheels and axels to move To know the difference between pulling and pushing forces To know which materials are best used for particular components (i.e. rubber covered wheels might provide more grip than plastic wheels) To know the names of some simple tools and their purpose 	<ul style="list-style-type: none"> To know how to operate sliders and levers To know that different mechanisms create different types of movement To know what a pivot is To know the name of simple tools and their purpose To know some simple fixing techniques and when to use them (i.e. masking tape to secure a lollipop stick slider) 	<ul style="list-style-type: none"> Understanding how pneumatic systems work Learning that mechanisms are a system of parts that work together to create motion Understanding that pneumatic systems can be used as part of a mechanism Learning that pneumatic systems force air over a distance to create movement 		<ul style="list-style-type: none"> To know that mechanical and electrical systems have an input, process and output To know what a gear is To know what a pulley is To know that gears and pulleys can speed up, slow down or change the direction of movement To know whether a gear will turn clockwise or anti-clockwise To know how to accurately draw an exploded diagram To know technical vocabulary relevant to the project 	
Structures.	<ul style="list-style-type: none"> Describing the purpose of structures Learning how to turn 2D nets into 3D structures Learning that the shape of materials can be changed to improve the strength and stiffness of structures 		<ul style="list-style-type: none"> Identifying natural and man-made structures Identifying suitable materials to be selected Knowing that shapes and structures with wide, flat bases or legs are the most stable 			<ul style="list-style-type: none"> Building on prior knowledge of net structures and broadening knowledge of frame structures Exploring how to create a strong beam Identifying arch and beam bridges and understanding the terms: compression and tension

	<ul style="list-style-type: none"> • Knowing that materials can be manipulated to improve strength and stiffness • Understanding that cylinders are a strong type of structure • Develop awareness of different structures for different purposes • Identifying when a structure is more or less stable than another 		<ul style="list-style-type: none"> • Understanding that the shape of a structure affects its strength • Building a strong and stiff structure by folding paper • Understanding the difference between frame and shell structure 			<ul style="list-style-type: none"> • Knowing that structures can be strengthened by manipulating materials and shapes • Learning that architects consider light, shadow and patterns when designing • Implementing frame and shell structure knowledge • Identifying the shell structure in everyday life (cars, aeroplanes, tins, cans) • Identifying stronger and weaker structures • Finding different ways to reinforce structures • Understanding how triangles can be used to reinforce bridges • Articulating the difference between beam, arch, truss and suspension bridges
Textiles	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Learning different ways in which to join fabrics together: pinning, stapling, gluing • Joining items using fabric glue or stitching • Identifying benefits of these techniques • Threading a needle • Sewing running stitch, with evenly spaced, neat, even stitches to join fabric • Neatly pinning and cutting fabric using a template 		<ul style="list-style-type: none"> • Threading needles with greater independence • Tying knots with greater independence • Sewing cross stitch and appliqué • Understanding the need to count the thread on a piece of even weave fabric in each direction to create uniform size and appearance • Understanding that fabrics can be layered for affect • Understanding that there are different fastenings and what they are • Articulating the benefits and disadvantages of different fastening types 	<ul style="list-style-type: none"> • Learning to sew blanket stitch to join fabric • Applying blanket stitch so the space between the stitches is even and regular • Threading needles Independently • Learning different decorative stitches • Application and outcome of the individual technique • Sewing accurately with even regularity of stitches 	

Electricals.	•	•		<ul style="list-style-type: none"> • Learning how electrical items work • Identifying electrical products • Learning what electrical conductors and insulators are • Understanding that a battery contains stored electricity and can be used to power products • Identifying the features of an electrical system. • Understanding how an electrical system works. • Articulating the positives and negatives about different electrical systems. 		<ul style="list-style-type: none"> • Learning the key components used to create functioning circuit • Learning that graphite is a conductor and can be used as part of a circuit • Learning the difference between series and parallel circuits • Understanding that breaks in a circuit will stop it from working
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FOOD							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	<ul style="list-style-type: none"> • With support, follow a simple plan or recipe 	<ul style="list-style-type: none"> • Designing a smoothie based on a food combination which work well together 	<ul style="list-style-type: none"> • Designing a healthy wrap based on a food combination which work well together 	<ul style="list-style-type: none"> • Creating a healthy and nutritious recipe using fresh ingredients, considering the taste, texture, smell and appearance of the dish 	<ul style="list-style-type: none"> • Designing a biscuit within a given budget, drawing upon previous taste testing 	<ul style="list-style-type: none"> • Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients • Writing an amended method for a recipe to incorporate the relevant changes to ingredients 	<ul style="list-style-type: none"> • Writing a recipe, explaining the key steps, method and ingredients • Including facts and drawings from research undertaken
Make	<ul style="list-style-type: none"> • Children to observe adults using graters, knives, peelers, whisks, rolling pin, forks, spoons, learning the correct way to handle them as well as health and 	<ul style="list-style-type: none"> • Chopping fruit and vegetables safely to make a smoothie • Identifying if a food is a fruit or a vegetable 	<ul style="list-style-type: none"> • Slicing food safely using the bridge or claw grip • Constructing a wrap that meets a design brief 	<ul style="list-style-type: none"> • Knowing how to prepare themselves and a work space to cook safely in • Learning the basic rules to avoid food contamination 	<ul style="list-style-type: none"> • Following a baking recipe • Cooking safely, following basic hygiene rules • Adapting a recipe • Select correct grip to cut and slice 	<ul style="list-style-type: none"> • Cutting and preparing vegetables safely • Using equipment safely, including knives, hot pans and hobs 	<ul style="list-style-type: none"> • Following a recipe, including using the correct quantities of each ingredient • Adapting a recipe based on research • Working to a given timescale

	safety when using kitchen utensils.	<ul style="list-style-type: none"> Learning where and how fruits and vegetables grow 		<ul style="list-style-type: none"> Following the instructions within a recipe Begin to select correct grip to cut and slice food. (bridge / claw) 	food. (bridge / claw)	<ul style="list-style-type: none"> Knowing how to avoid cross-contamination Following a step by step method carefully to make a recipe 	<ul style="list-style-type: none"> Working safely and hygienically with independence
Evaluate	<ul style="list-style-type: none"> Say if they like or dislike something with a reason. Give words to describe the smell, taste, touch. 	<ul style="list-style-type: none"> Tasting and evaluating different food combinations Describing appearance, smell and taste Suggesting information to be included on packaging 	<ul style="list-style-type: none"> Describing the taste, texture and smell of fruit and vegetables Taste testing food combinations and final products Describing the information that should be included on a label Evaluating which grip was most effective. 	<ul style="list-style-type: none"> Establishing and using design criteria to help test and review dishes Describing the benefits of fresh ingredients and the impact on the environment Suggesting points for improvement 	<ul style="list-style-type: none"> Evaluating a recipe, considering: taste, smell, texture and appearance Describing the impact of the budget on the selection of ingredients Evaluating and comparing a range of products Suggesting modifications 	<ul style="list-style-type: none"> Identifying the nutritional differences between different products and recipes Identifying and describing healthy benefits of food groups 	<ul style="list-style-type: none"> Evaluating a recipe, considering: taste, smell, texture and origin of the food group Taste testing and scoring final products Suggesting and writing up points of improvements in productions Evaluating health and safety in production to minimise cross contamination
Technical knowledge	<ul style="list-style-type: none"> Understand that food comes from plants or animals. 	<ul style="list-style-type: none"> Understanding the difference between fruits and vegetables Describing and grouping fruits by texture and taste 	<ul style="list-style-type: none"> Understanding what makes a balanced diet Knowing where to find the nutritional information on packaging Knowing the five food groups 	<p>Working with cooking equipment safely and hygienically</p> <ul style="list-style-type: none"> Learning that Learning that vegetables and fruit grow in certain season. Learning that each fruit and vegetable gives us nutritional benefits Learning to use, store and clean a knife safely 	<ul style="list-style-type: none"> Understanding the impact of the cost and importance of budgeting while planning ingredients for a recipe. Understanding the environmental impact on future product and cost of production 	<ul style="list-style-type: none"> Understanding where food comes from Understanding what makes up a balanced diet Learning to adapt a recipe to make it healthier Comparing two adapted recipes using a nutritional calculator and then identifying the healthier option 	<ul style="list-style-type: none"> Learning how to research a recipe by ingredient Recording the relevant ingredients and equipment needed for a recipe Understanding the combinations of food that will complement one another Understanding where food comes from, describing the process of 'Farm to Fork' for a given ingredient

Progression of vocabulary for D.T

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Structures	Cut, fold, join, fix, weak, strong, stable, stiffer, structure, base, corner, point, straight, curved		3D shapes, edge, face, font, net, marking out, material, joining, assemble, three dimensional, Shell structure, Vertex.			Assemble, prism, vertex, breadth, capacity, scoring, adhesives, reduce, reuse, recycle, reinforce, triangulation, stability, temporary, permanent, prototype, innovation, functional, design brief
Mechanisms	Wheel, axel, fixed, free, design, make, cutting, joining, hacksaw, vice, dowel, body, cab, shaping	Mechanism, lever, slider, slot, pivot, guide/bridge, fastener, pull, push, down, straight, work, design, evaluate, purpose	Function, input, lever, linkage, mechanism, motion, output, pivot, pneumatic system.		Pulley, gear, driver, follower, rotation, motor, belt, spindle, motor, circuit, switch, ratio	
Textiles		Pattern, mark out, join, decorate, running stitch, needle, fabric Template, quality, suitable, features, overstretch, design, seam		Fastening, compartment, zip, finishing technique, function, prototype, back stitch, felted, woven, knitted, bonded, Aesthetics, seam allowance, pinning, embroidery	back stitch, blanket stitch, cross stitch Specification, tacking, working drawing, clasp, pinking shears, design criteria, hem, reinforce, stem stitch, satin stitch	
Electrical systems				User, fault, toggle switch, insulator, conductor, battery holder, crocodile clip		Design specification, light dependent resistor, switch, bulb, device, motor, battery, symbol, buzzer, switch, insulator, conductor, circuit, connection

Food and nutrition	Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, hard , skin, seed pip, slicing, peeling, cutting, squeezing, choosing, ingredients, planning, tasting,	crisp, sour, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging, food groups	Texture, taste, appearance, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, frozen, tinned, processed, fresh, harvested.	Texture, taste, appearance, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, budget, quality, branded.	Ingredients, yeast, dough, wholemeal, unleavened, baking soda, spice, herbs, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten, allergy, intolerance, savoury, seasonality, pour, mix, kneed, whisk, beat, combine, fold, rubbing in	ingredients, yeast, dough, wholemeal, unleavened, baking soda, spice, herbs, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten, allergy, intolerance, savoury, seasonality, pour, mix, kneed, whisk, beat, combine, fold, rubbing in