Progression ladder-Design and Technology English Martyrs

	EYFS	KS1		Lower KS2		Upper KS2	
National Curriculum		**Key stage 1 Pupils should:** 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. <u>Design</u> 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		**Key stage 2 Pupils should:** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an interactive 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: <u>Design</u> 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		
		Y1	Y2	Y3	Y4	Y5	**Y6**
Research and Design	• I can talk about products already made and what I like/dislike about a product • I can think carefully about the colour and shape appropriate for a task. • I can begin to draw simple designs of products they would like to create.	• I can have my own ideas to explain what I want to do • I can explain what my product is for, and how it will work • I can use pictures and words to plan, begin to use models • I can design a product for myself following design criteria • I can research similar existing products	• I can have my own ideas and plan what to do next • I can explain what I want to do and describe how I may do it • I can explain the purpose of product, how it will work and how it will be suitable for the user • I can describe design using pictures, words, models, and diagrams • I can begin to use ICT to design products for myself and others following design criteria • I can choose the best tools and materials, and explain choices • I can use knowledge of existing products to produce ideas	• I can show how a design meets a range of requirements • I can describe the purpose of product follow a given design criteria • I can have at least one idea about how to create product • I can create a plan which shows order, equipment and tools • I can describe design using an accurately labelled sketch and words • I can make design decisions and explain how product will work • I can make a prototype and begin to use computers to show design	• I can use research for design ideas • I can show design meets a range of requirements and is fit for purpose • I can begin to create own design criteria • I can have at least one idea about how to create product and suggest improvements for design. • I can produce a plan and • explain it to others • I can include an annotated sketch • I can make and explain design decisions considering availability of resources • I can explain how product will work • I can make a prototype begin to use computers to show design.	• I can use internet and questionnaires for research and design ideas • I can take a user's view into account when designing • I can begin to consider needs/wants of • individuals/groups when designing and ensure product is fit for purpose • I can create own design criteria and have a range of ideas • I can produce a logical, realistic plan and explain it to others. • I can use cross-sectional planning and annotated sketches • I can make design decisions considering time and resources. • I can clearly explain how parts of product will work. • I can model and refine design ideas by making prototypes and using pattern pieces. • I can use computer-aided designs	• I can draw on market research to inform design • I can use research of user's individual needs, wants, requirements for design • I can identify features of design that will appeal to the intended user • I can create own design criteria and specification • I can come up with innovative design ideas • I can follow and refine a logical plan. • I can use annotated sketches, cross-sectional planning and exploded diagrams • I can make design decisions, considering, resources and cost • I can clearly explain how parts of design will work, and how they are fit for purpose • I can independently model and refine design ideas by making • I can use prototypes to use computer-aided designs
	EYFS	KS1		Lower KS2		Upper KS2	
National Curriculum		**Key stage 1 Pupils should:** 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. <u>Make</u> 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		**Key stage 2 Pupils should:** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an interactive 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: <u>Make</u> 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			
Make	• I can begin to talk about what we are making and the plans • With support, I can select tools needed to cut/join/draw • With support, I can think about how to work	• I can explain what I'm making and why • I can consider what I need to do next • I can select tools/equipment to cut, shape, join, finish and explain choices • I can measure, mark out, cut and shape, with support	• I can explain what I am making and why it fits the purpose • I can make suggestions as to what I need to do next. • I can join materials/components together in different ways	• I can select suitable tools/equipment, explain choices; begin to use them accurately • I can select appropriate materials, fit for purpose. • I can work through plan in order • I can consider how good my product will be • I can begin to measure, mark out, cut and shape	• I can select suitable tools and equipment • I can explain choices in relation to required techniques and use accurately • I can select appropriate materials, fit for purpose; explain choices • I can work through plan in order. • I can realise if product is going to be good quality	• I can use selected tools/equipment with good level of precision • I can produce suitable lists of tools, equipment/materials needed • I can select appropriate materials, fit for purpose; explain choices, considering functionality create and follow detailed step-by-step plan • I can explain how product will appeal to an audience	• I can use selected tools/equipment with good level of precision • I can produce suitable lists of tools, equipment/materials needed • I can select appropriate materials, fit for purpose; explain choices,

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	safely when making a product • I can talk about what is working/ is not working and why	• I can choose suitable materials and explain choices • I can try to use finishing techniques to make a product look good • I can work in a safe and hygienic manner Textiles	• I can measure, mark out, cut and shape materials and components, with support. • I can describe which tools I'm using and why • I can choose suitable materials and explain choices depending on characteristics. • I can use finishing techniques to make products look good • I can work safely and hygienically	materials/components with some accuracy • I can begin to assemble, join and combine materials and components with some accuracy • I can begin to apply a range of finishing techniques with some accuracy	• I can measure, mark out, cut and shape materials/components with some accuracy • I can assemble, join and combine materials and components with some accuracy • I can apply a range of finishing techniques with some accuracy	• With accuracy, I can measure, mark out, cut and shapes materials/components • With accuracy, I can assemble, join and combine materials/components • With accuracy, I can accurately apply a range of finishing techniques • I can use techniques that involve a small number of steps • I can begin to be resourceful with practical problems	• considering functionality create and follow detailed step-by-step plan • I can explain how product will appeal to an audience • With accuracy, I can measure, mark out, cut and shapes materials/components • With accuracy, I can assemble, join and combine materials/components • With accuracy, I can accurately apply a range of finishing techniques • I can use techniques that involve a small number of steps • I can begin to be resourceful with practical problems
	EYFS	KS1		Lower KS2		Upper KS2	
National Curriculum		**Key stage 1 Pupils should:** 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. <u>Evaluate</u> Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria Technical knowledge. Build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.		**Key stage 2 Pupils should:** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an interactive 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: <u>Evaluate</u> 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. 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.			
Evaluate	• I can talk about how I made my product. • I can tell someone what I liked about my product. • I can talk about what I might change to make my product even better	• I can talk about my work, linking it to what I was asked to do • I can talk about existing products considering: use, materials, how they work, audience, where they might be used • I can talk about existing products, and say what is and isn't good • I can talk about things that other people have made • I can begin to talk about what could make product better	• I can describe what went well, thinking about the design criteria • I can talk about existing products considering: use, materials, how they work, audience and where they might be used • I can evaluate how good existing products are • I can talk about what I would do differently if I were to do it again and why	• I can look at design criteria while designing and making • I can use design criteria to evaluate finished product and say what I would change to make design better • I can begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose • I can begin to understand by whom, when and where products were designed • I can learn about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products	• I can use criteria to evaluate product to begin to explain how I could improve original design • I can begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose • I can begin to understand by whom, when and where products were designed • I can learn about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products • I can research whether products can be recycled or reused	• I can evaluate ideas and finished product against specification, considering purpose and appearance. • I can test and evaluate final product • I can evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose • I can begin to evaluate how much products cost to make and how innovative they are • I can research how sustainable materials are • I can learn about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products	• I can evaluate ideas and finished product against specification, considering purpose and appearance. • I can test and evaluate final product; explaining what would improve it and the effect different resources may have had • I can evaluate how much products cost to make and how innovative they are • I can research and discuss how sustainable materials are • I can consider the impact of products beyond their intended purpose • I can learn and discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products

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Vocabulary Progression	Planning, make, product	planning, investigating design, evaluate, make, user, purpose, ideas, product.	investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function	user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing	evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch	design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype	function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype

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Technical Knowledge - Construction (Including materials, structures, mechanisms and electrical systems) Technical Knowledge – Textiles Technical Knowledge – Food, Drink and Nutrition	*To know that objects are made of different materials and begin to describe them and to have my own ideas about how to join parts of products. **Vocabulary:** cut, fold, join, fix weak, strong, *To begin to talk about the different textures of textiles and to talk about colour and shape when thinking about which textiles could be used. **Vocabulary:** fabrics, patterns, decorate *To have own likes/dislikes when it comes to foods and to begin to understand healthy and unhealthy foods and the need for a balanced diet. To know that it's important to have clean hands before touching food and to begin to cut and prepare fruits with support. **Vocabulary:** fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, healthy diet,	*To begin to measure and join materials, with some support. To describe differences in materials and suggest ways to make material/product stronger. To begin to use levers or Slides. **Vocabulary:** cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder, slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards *To measure, cut and join textiles to make a product, with some support and to choose suitable textiles **Vocabulary:** joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish *To describe textures, wash hands & clean surfaces and think of interesting ways to decorate food. To say where some foods come from, (i.e. plant or animal) and to describe differences between some food groups (i.e. sweet, vegetable etc.). To discuss how fruit and vegetables are healthy and to cut, peel and grate safely, with support **Vocabulary:** fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core,	*To measure materials and describe some different characteristics of materials. To join materials in different ways. To use own ideas to try to make product stronger as well as use levers or slides begin to understand how to use wheels and axles. **Vocabulary:** cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder, vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used *To measure textiles and join textiles together to make a product, and explain how I did it. Also, to carefully cut textiles to produce accurate pieces and explain choices of textile whilst understanding that a 3D textile structure can be made from two identical fabric shapes. **Vocabulary:** joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish *To explain hygiene and keep a hygienic kitchen and describe properties of ingredients and importance of varied diet as well as to say where food comes from (animal, underground etc.). To describe how food is farmed, home-grown, caught and to draw eat well plate; explain there are groups of food. To	*To use appropriate materials to work accurately to make cuts and holes. To join materials and begin to make strong structures by selecting appropriate tools /techniques. To alter product after checking, to make it better and to begin to try new/different ideas. To use simple lever and linkages to create movement and to use simple circuit in product that will enable us to learn about how to program a computer to control product. **Vocabulary:** shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision, mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating *To join different textiles in different ways and to choose textiles considering appearance and functionality whilst understanding that a simple fabric shape can be used to make a 3D textiles project **Vocabulary:** fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance *To carefully select ingredients and to use equipment safely. To make product look attractive and to think about how to grow plants to use in cooking. To begin to understand food comes from UK and wider world. To describe how healthy diet= variety/balance of food/drinks. To explain how food and drink are needed for active/healthy bodies. To prepare hot drinks safely and hygienically and to grow in confidence understanding branding of food and drink products.	*To measure carefully to avoid mistakes to attempt to make product strong and to continue working on product even if original didn't work. To select most appropriate tools /techniques and to explain alterations to product after checking it. To use lever and linkages to create movement and to use simple circuit in product that will enable us to learn about how to program a computer to control product. **Vocabulary:** shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision, mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating *To think about user when choosing textiles and to think about how to make product strong. In addition, to explain how to join things in a different way and understand that a simple fabric shape can be used to make a 3D textiles project **Vocabulary:** fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance *To explain how to be safe/hygienic and to think about presenting product in interesting/ attractive ways. To understand ingredients can be fresh, pre-cooked or processed and begin to understand about food being grown, reared or caught in the UK or wider world. To describe eat well plate and how a healthy diet=variety / balance of food and drinks and explain importance	*To select materials carefully, considering intended use of product and appearance and to explain how product meets design criteria. To measure accurately enough to ensure precision and to ensure product is strong and fit for purpose. To begin to reinforce and strengthen a 3D structure and refine the product after testing. To begin to use cams, pulleys or gears to create movement and to incorporate switch into product. To confidently use number of components in circuit and begin to be able to program a computer to monitor changes in environment and control product. **Vocabulary:** frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output *To think about user and aesthetics when choosing textiles and to think about how to make product strong and look better. To think of a range of ways to join things and begin to understand that a single 3D textiles project can be made from a combination of fabric shapes. **Vocabulary:** seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings *To explain how to be safe/hygienic and follow own guidelines and to present product well - interesting, attractive, fit for purpose. To begin to understand seasonality of foods and to understand food can be grown, reared or caught in the UK and the wider world. To describe how recipes can be adapted to change appearance, taste, texture, aroma and to explain how there are different substances in food / drink needed for health. To prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat	*To select materials carefully, considering intended use of the product, the aesthetics and functionality and to refine product after testing, considering aesthetics, functionality and purpose. To use cams, pulleys and gears to create movement and use different types of circuit in product and to think of ways in which adding a circuit would improve product. To program a computer to monitor changes in environment and control product. **Vocabulary:** frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output *To think about user's wants/needs and aesthetics when choosing textiles to ensure that it is attractive and strong. To make a prototype and to use a range of joining techniques and to carefully think about how product might be sold and what would improve product as well as understanding that a single 3D textiles project can be made from a combination of fabric shapes. **Vocabulary:** seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings *To understand a recipe can be adapted by adding / substituting ingredients. To explain seasonality of foods and to present product to a high standard to make the product interesting and aesthetically attractive. To learn about food processing methods

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		slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients,	describe “five a day”. To cut, peel and grate with increasing confidence. **Vocabulary:** fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients	**Vocabulary:** name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	of food and drink for active, healthy bodies. To prepare and cook some dishes safely and hygienically. To use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading and baking. **Vocabulary:** name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	source and to use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. **Vocabulary**: ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble	and name some types of food that are grown, reared or caught in the UK or wider world. To adapt recipes to change appearance, taste, texture or aroma. To describe some of the different substances in food and drink, and how they can affect health. To prepare and cook a variety of dishes safely and hygienically including, where appropriate, the use of heat source. To use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. **Vocabulary**: ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble