



Pyrford C of E School Design Technology Progression Map

Generate Ideas

Design

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> • plan and think ahead about how they will explore or play with objects • respond to new experiences • make independent choices • show curiosity about objects, events and people • questions why things happen • engage in open-ended activity • thinking of ideas • find ways to solve problems / find new ways to do things / test their ideas • use senses to explore the world around them • create simple representations of events, people and objects • use the language of designing and making e.g. words such as 'join', 'build' and 'shape' <p>Footnote: Entries in bold in Nursery and Reception taken from 'Development Matters' – Characteristics of Effective Learning</p>	<ul style="list-style-type: none"> • use their own interests to develop their learning • know more, so feel confident about coming up with their own ideas • make more links between those ideas • generate own ideas and plan next steps • explain the idea and describe how it could be achieved • explain what the product is for, and how it will work • use pictures and words to plan, begin to use models • planning, making decisions about how to approach a task, solve a problem and reach a goal • design their own product following design criteria • create simple representations of events, people and objects <p>Footnote: Entries in bold in Nursery and Reception taken from 'Development Matters' – Characteristics of Effective Learning</p>	<ul style="list-style-type: none"> • design appealing products for a particular user based on simple design criteria • generate initial ideas and design criteria through own experiences • develop and communicate these ideas through talk and drawings and mock ups where relevant • explain purpose of product, how it will work and how it will be suitable for the user • describe design using pictures, words, models, diagrams, begin to use ICT design products for myself and others following design criteria • choose best tools and materials, and explain choices • use knowledge of existing products to produce ideas 	<ul style="list-style-type: none"> • generate ideas based on simple design criteria and their own experiences, explaining what they could make. • develop, model and communicate their ideas through talking, mock-ups and drawings • begin to research others' needs • show design meets a range of requirements • describe purpose of product • follow a given design criteria • have an idea about how to create product • create a plan which shows order, equipment and tools describe design using an accurately labelled sketch and words • make design decisions explain how product will work 	<ul style="list-style-type: none"> • begin to research others' needs • show design meets a range of requirements • describe purpose of product • follow a given design criteria • have at least one idea about how to create product • create a plan which shows order, equipment and tools describe design using an accurately labelled sketch and words • use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, such as web-based recipes, to develop and communicate ideas • make design decisions explain how product will work • begin to use computers to show design 	<ul style="list-style-type: none"> • use research for design ideas • generate and clarify ideas through discussion with peers to develop design criteria to inform the design of products • show design meets a range of requirements and is fit for purpose begin to create own design criteria • make and explain design decisions considering availability of resources • use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas • have at least one idea about how to create product and suggest improvements for design • explain how product will work 	<ul style="list-style-type: none"> • generate innovative ideas through research and discussion with peers to develop a design brief and criteria for a design specification • design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification • develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views • use internet and questionnaires for research and design ideas • clearly explain how parts of product will work • model and refine design ideas by making prototypes and using pattern pieces 	<ul style="list-style-type: none"> • use research using surveys, interviews, questionnaires and web-based resources to develop a design specification for a range of functional products • develop a simple design specification to develop ideas and products, taking account of constraints including time, resources and cost • generate and develop innovative ideas and share and clarify these through discussion • communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagram • clearly explain how parts of design will work, and how they are fit for purpose • independently model and refine design ideas by making and using pattern pieces • use computer-aided designs

Make

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> • keep on trying when things are difficult • guide their own thinking by talking to themselves while playing • begin to show goal-directed behaviour • explore different materials freely, in order to develop their ideas about how to use them and what to make • join different materials and explore different textures • with support, children should use a range of tools including scissors, hole punch, stapler, glue spreader, rolling pin, cutter and grater • with support, children should practise stirring, mixing, pouring and Blending some ingredients during cooking activities • develop their own ideas and then decide which materials to use to express them • explore how things work • begin to use the language of designing and making, e.g. join, build and shape 	<ul style="list-style-type: none"> • concentrate on achieving something that's important to them • solve real problems • show goal-directed behaviour • construct with a purpose, using a variety of resources • use simple tools and techniques • build / construct with a wide range of objects • make imaginative and complex 'small worlds' with blocks and construction kits • replicate structures with materials / components • select tools & techniques to shape, assemble and join • discuss how to make an activity safe and hygienic • record experiences by drawing, writing, voice recording • understand different media can be combined for a purpose • explore how things work • check how well their activities are going • changing strategy as needed • begin to use the language of designing and making, e.g. join, build and shape 	<ul style="list-style-type: none"> • explain what their ideas is and how they will be making it and consider • be able to explain what they need to do next • select tools and equipment to cut, shape, join, finish and explain choices • measure, mark out, cut and shape, with support • join materials and components together in different ways • 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"> • explain their ideas about what they are making and why it fits the purpose • make suggestions as to what they need to do next • join materials and components together in different ways • measure, mark out, cut and shape materials and components, with support • describe which tools need to be used and why choose suitable materials and explain choices depending on characteristics • Use finishing techniques to make product look good • work safely and hygienically 	<ul style="list-style-type: none"> • select suitable tools/equipment, explain choices; begin to use them accurately • select appropriate materials, fit for purpose • suggest and work through plan in order to make product • consider how good product will be and how to improve it • begin to measure, mark out, cut and shape materials and components with some accuracy • 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"> • select suitable tools and equipment, explain choices in relation to required techniques and use accurately select appropriate materials, fit for purpose; explain choices • devise simple step-by-step plans and work through plan in order • measure, mark out, cut and shape materials and components with some accuracy • assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques with some accuracy • consider how good product will be and how to improve it 	<ul style="list-style-type: none"> • use selected tools/equipment with good level of precision • produce suitable lists of tools, equipment/materials needed • select appropriate materials, fit for purpose; explain choices, considering functionality • create and follow detailed step by-step plan • explain how product will appeal to an audience • mainly accurately measure, mark out, cut and shape materials and components mainly accurately • assemble, join and combine materials and components mainly accurately • apply a range of finishing techniques • use techniques that involve a small number of steps 	<ul style="list-style-type: none"> • use selected tools and equipment precisely produce suitable lists of tools, equipment, materials needed, considering constraints • select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics • create, follow, and adapt detailed step-by-step plans • explain how product will appeal to audience; make changes to improve quality • accurately measure, mark out, cut and shape materials and components accurately • assemble, join and combine materials and components accurately • apply a range of finishing techniques • use techniques that involve a number of steps • be resourceful with practical problems

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluate	<ul style="list-style-type: none"> begin to correct their mistakes themselves talk about the differences between materials and changes they notice evaluative and comparative language 'longer', 'shorter', 'lighter' and 'heavier' and 'stronger' check how well their activities are going change strategy as needed reviewing how well the approach worked discuss appropriate use of senses e.g. when tasting different foods 	<ul style="list-style-type: none"> review their progress as they try to achieve a goal 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"> taste, explore and evaluate a range of products to determine the intended user's preferences for the product evaluate their ideas throughout and finished products against design criteria, including intended user and purpose adapt work if necessary Talk about their final product, what went well and what could be improved 	<ul style="list-style-type: none"> explore a range of existing products related to their design criteria evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria adapt work if necessary Talk about their final product, what went well and how it compares to their original design criteria 	<ul style="list-style-type: none"> investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project test their product against the original design criteria and with the intended user evaluate the ongoing work and the final product with reference to the design criteria and the views of others 	<ul style="list-style-type: none"> investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used test and evaluate their own products against design criteria and the intended user and purpose evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work 	<ul style="list-style-type: none"> investigate and analyse products linked to their final product compare the final product to the original design specification and record the evaluations test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose consider the views of others to improve their work 	<ul style="list-style-type: none"> continually evaluate and modify the working features of the product to match the initial design specification test the system to demonstrate its effectiveness for the intended user and purpose critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests consider the views of others to improve their work

Strands

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Unit title							Moon Buggies	Alex Rider Gadgets
Electrical Systems							<ul style="list-style-type: none"> use simple circuit in product use number of components in circuit learn about how to program a computer to control product. begin to be able to program a computer to control product 	<ul style="list-style-type: none"> make a circuit to the design criteria make and test a circuit (series and parallel circuits) incorporating it into a product create circuits that employ a number of components use a range of materials and equipment safely

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Unit title			Sliders and Levers Fairy Tale Moving Pictures	Wheels & Axles Moving Car	Levers and Linkages Moving Skeletons	Pneumatics Moving Dragons	CAMS Animal Automata	
Mechanical Systems	<ul style="list-style-type: none"> learn to construct with a purpose in mind with support, begin to incorporate moving parts in models begin to explore and create structures using a variety of building blocks, e.g. Lego, Stickle Bricks, Mobilo begin to explore and understand how wheels work begin to explore different materials freely, in order to develop their ideas about how to use them and what to make 	<ul style="list-style-type: none"> begin to explore using moving parts in models explore that ideas are needed to create a design explore and create structures using a variety of building blocks, e.g. Lego, Stickle Bricks, Mobilo create structures using wheels and begin to explore using axles explore different materials freely, in order to develop their ideas about how to use them and what to make Selects tools and techniques needed to shape, assemble and join materials. 	<ul style="list-style-type: none"> understand that ideas are needed to create a design know that levers and slides can be found in existing products such as pop up books use simple lever and linkages to create movement Know that a slider allows for movement from side to side begin to try new/different ideas explore adapting materials to allow them to move use different joins for different effects select appropriate tools / techniques know that a product must be appealing to the person it is being made for alter product after checking, to make it better 	<ul style="list-style-type: none"> begin to understand how to use wheels and axles Materials can be joined in different ways Different joins are used for different effects and reasons. Some simple mechanical systems can be moved with wheels and axles How to make a moving pulley mechanism using a wheel and axle structures must be strong and stable so that the pulley mechanism can work a product must be appealing to the person it is being made for by decorating the product 	<ul style="list-style-type: none"> select most appropriate tools / techniques explain alterations to product after checking it grow in confidence about trying new / different ideas use levers and linkages to create movement use pneumatics to create movement 	<ul style="list-style-type: none"> know that air travels in and out of objects such as balloons many products are use air to make them work the monster's mouth uses a pneumatic system to open and close use tubing and a syringe to create a pneumatic system use different materials to construct the moving monster know how to use tools such as scissors and glue guns safely materials can be joined in different ways such as glue, staples and tape measure carefully to avoid mistakes attempt to make product strong making a strong, stiff structure continue working on product even if original didn't work design a moving monster whilst thinking about appropriate materials to make it look appealing 	<ul style="list-style-type: none"> explore that a cam mechanism changes the input motion from rotary motion to a linear motion know that the axle supports the cam wheel understand when the crank handle is turned, the axle and cam turn (rotary motion) the cam follower rests on the cam and follows the outline of the cam wheel, moving up and down as a result (linear motion) different shaped cams will cause the follower to move up and down in different ways grow in confidence about trying new / different ideas begin to use cams, pulleys or gears to create movement refine product after testing, considering aesthetics, functionality and purpose 	
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Structures

Unit Title			Design a Royal Residence	Packaging	Let's go Fly a Kite		Moon Buggy	
	<ul style="list-style-type: none"> begin to explore that ideas are needed to create a design begin to explore different materials freely, in order to develop their ideas about how to use them and what to make begin to develop their own ideas and then decide which materials to use to express them begin to create closed shapes with continuous lines, and begin to use shapes to represent objects begin to create structures using a variety of building blocks, e.g. Lego, Stickle Bricks, Mobilo begin to create collaboratively, sharing ideas, resources and skills begin to explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function begin to share their creations, talking about the process they have used 	<ul style="list-style-type: none"> explore that ideas are needed to create a design Make imaginative and complex 'small worlds' with blocks and construction kits create structures using a variety of building blocks, e.g. Lego, Stickle Bricks, Mobilo develop their own ideas and then decide which materials to use to express them create closed shapes with continuous lines, and begin to use shapes to represent objects create collaboratively, sharing ideas, resources and skills explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function share their creations, explaining the process they have used 	<p>Freestanding</p> <ul style="list-style-type: none"> explore different mechanisms such as hinges, leers and pivots to produce different movements build structures, exploring how they can be made stronger, stiffer and more stable begin to measure with some support suggest ways to make material/product stronger describe some different characteristics of materials join materials in different ways use joining, rolling or folding to make it stronger use own ideas to try to make product stronger select different materials for purpose, e.g. transparent and waterproof 	<p>Shell</p> <ul style="list-style-type: none"> know the difference between 2D and 3D shapes use appropriate materials work accurately to make cuts and holes join materials begin to make strong structures know packaging is a shell structure that is used to contain, protect and present a product designs can be adapted to meet the needs of the design-brief different techniques can affect the strength of the packaging, e.g. folding and shaping, corrugating, ribbing, laminating market research can be conducted to identify the needs of the consumer 	<p>Frame</p> <ul style="list-style-type: none"> have a basic understanding of what structures are and how they can be made stronger, stiffer and more stable carry out research into user needs and existing products develop a simple design specification to guide the development of their ideas generate annotated sketches of their ideas competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks begin to reinforce and strengthen a 3D frame select materials carefully, considering intended use of the product, the aesthetics and functionality use finishing and decorative techniques suitable for the product they are designing and making 		<p>Frame</p> <ul style="list-style-type: none"> Apply their understanding of how to strengthen, stiffen and reinforce more complex structures select materials carefully, considering intended use of product and appearance carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources explain how product meets design criteria measure accurately enough to ensure precision ensure product is strong and fit for purpose begin to reinforce and strengthen a 3D frame select materials carefully, considering intended use of the product, the aesthetics and functionality explain how product meets design criteria reinforce and strengthen a 3D frame 	
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Textiles

Unit Title			Fabric Faces			Cushions		Slippers
	<ul style="list-style-type: none"> with help begin to use tools such as scissors, glue, and hole punch with help explore weaving with paper, string and wool begin to handle equipment and tools effectively explore a variety of materials, tools and techniques experiment with colour, design, texture, form and function 	<ul style="list-style-type: none"> practice using tools such as scissors, glue, and hole punch develop skills of weaving with paper, string and wool handle equipment and tools effectively safely use and explore a variety of materials, tools and techniques experiment with colour, design, texture, form and function 	<ul style="list-style-type: none"> choose suitable textiles measure textiles join textiles together to make a product, and explain how it was done carefully cut textiles to produce accurate pieces explain choices of textile understand that a 3D textile structure can be made from two identical fabric shapes materials can be joined in different ways for different reasons learn that pieces of fabric are usually joined together by sewing different types of fabric have different properties Felt is a useful fabric for making because it doesn't fray a product must be appealing to the person it is intended for decorations can be sewn or glued to fabric 			<ul style="list-style-type: none"> think about user when choosing textiles think about how to make product strong begin to devise a template explain how to join things in a different way using running stitch understand that a simple fabric shape can be used to make a 3D textiles project join different textiles in different ways choose textiles considering appearance and functionality begin to understand that a simple fabric shape can be used to make a 3D textiles project fabric can be decorated in different ways such as using buttons, beads, sequins, braids and ribbons. 		<ul style="list-style-type: none"> research and develop design criteria make annotated sketches, cross-sectional drawings and prototypes think about user and aesthetics when choosing textiles choose suitable materials and fabrics choose the best stitch for the task – know backstitch, blanket stitch as well as running stitch measure and cut fabric accurately using a pattern understand that pattern pieces should usually be decorated before joining design and decorate the slipper think about how to make product strong and look better compare my finished product to the original design explain what went well and what could have been improved
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Food Technology

Unit Title	Cooking Porridge Making Gingerbread Men	Cooking Apple Crumble Cooking Bread	Fruit Salad	Designing Sandwiches	Fruit Muffins	Become a Baker!	European Dishes	Global Cuisine
	<ul style="list-style-type: none"> • begin to understand some food preparation tools, techniques and processes • practise stirring, mixing, pouring, blending • describe textures • wash hands & clean surfaces • discuss the use of senses • understand need for variety in food 	<ul style="list-style-type: none"> • begin to understand some food preparation tools, techniques and processes • describe textures • wash hands & clean surfaces • think of interesting ways to decorate food • practise stirring, mixing, pouring, blending • discuss the use of senses • begin to understand that eating well contributes to good health 	<ul style="list-style-type: none"> • describe textures • wash hands & clean surfaces • think of interesting ways to decorate food • say where some foods come from, (i.e. plant or animal) • know that plants have stems, roots and leaves • describe differences between some food groups • fruit and vegetables have varied tastes such as sweet, bitter and sour • discuss how fruit and vegetables are healthy • fruit and vegetables need to be prepared through washing, peeling, and chopping with support 	<ul style="list-style-type: none"> • explain hygiene and keep a hygienic kitchen • describe properties of ingredients and importance of varied diet • carefully select ingredients • use equipment and tools safely for example, knives to chop • make product look attractive • think about how to grow plants to use in cooking • say where food comes from (animal, plant, underground) • describe how food is farmed, home-grown, caught draw eat well plate • explain there are groups of food • describe “five a day” • make a simple dish without using a heat source • use different techniques such as cutting, peeling, Slicing and spreading. • measure and weigh food items using non-standard measures such as spoons and cups 	<ul style="list-style-type: none"> • explain hygiene and keep a hygienic kitchen • describe properties of ingredients and importance of varied diet • foods are reared e.g. lambs, cows. These give us products such as meat and milk which can be used to produce cheese and yoghurt • some foods are grown e.g. fruits and vegetables such as strawberries potatoes or grains such as rice or wheat • adapting a recipe changes the taste, appearance and texture of a food • adding different ingredients have different effects • Evaluate different ingredients. • Adapt a recipe to create my own fruit muffins • Weigh and measure ingredients using scales. • Use a range of cooking skills such as sieving, whisking and chopping. 	<ul style="list-style-type: none"> • explain how to be safe/hygienic • think about presenting product in interesting/ attractive ways understand ingredients can be fresh, pre-cooked or processed • understand about food being grown, reared or caught in the UK or wider world • explain importance of food and drink for active, healthy bodies • a recipe provides instructions about how to create a type of food. It can be adapted by varying the ingredients • use some of the following techniques: mixing, spreading, kneading and baking • evaluate different ingredients • adapt a recipe to create my own bread • draw and label a cross-sectional diagram • weigh and measure ingredients using scales 	<ul style="list-style-type: none"> • prepare and cook a pizza safely and hygienically including, where appropriate, the use of heat source • explain how to be safe/hygienic • a healthy diet includes a balance or proteins, carbohydrates, fruit and vegetables • food can be grown, caught or reared in the UK and elsewhere in the world • recipes can be adapted by using different ingredients • ingredients must be measured accurately • how to peel, chop, slice and mix and grate • accurately weigh and measure ingredients using scales • choose the correct equipment for the task • use a range of cooking skills such as sieving, kneading and chopping, kneading and baking 	<ul style="list-style-type: none"> • understand a recipe can be adapted by adding / substituting ingredients • explain seasonality of foods • learn about food processing methods name some types of food that are grown, reared or caught in the UK or wider world • adapt recipes to change appearance, taste, texture or aroma • describe some of the different substances in food and drink, and how they can affect health • prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source • use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading