

Newby and Scalby Primary School Curriculum Overview – Design and Technology

Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Year 1 Learning	
S & K	Technical Knowledge Summer Term Focus (taught input) <ul style="list-style-type: none"> build structures, exploring how they can be made stronger, stiffer and more stable Materials Theme - make their model stronger if necessary explore mechanisms [for example, levers, sliders, wheels and axles] Spring/Easter Theme (levers and sliders)
	Design Spring Term Focus (taught input) <ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria Materials Theme Art/sculpture Theme generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology - describe the materials using different words - talk with others about how they want to construct their product - make simple plans before making objects Plants Theme Art/Sculpture Theme Materials Theme
	Make Autumn Term Focus (taught input) <ul style="list-style-type: none"> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] <ul style="list-style-type: none"> - make a product which moves - cut materials, including textiles, using scissors - select appropriate resources and tools specific to their project Toys theme select from and use a wide range of materials and components, including construction materials and textiles according to their characteristics <ul style="list-style-type: none"> - describe how different textiles feel - make a product from textiles by gluing - make a structure/model using different materials Cutting using tools, continuous provision – on going Ourselves Theme Materials Theme Let's Celebrate Theme
	Evaluate Spring and SummerTerm Focus (taught input) <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"> - say why they have chosen moving parts Materials Theme Sculpture Theme
	Cooking & Nutrition <ul style="list-style-type: none"> use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from Around the World Theme PSHE Link (My Healthy Lifestyle) Let's Celebrate Theme
V	lever, slider, pop-up, fold, cut, joining, finishing, plan, evaluate, design, push, pull, mechanism, stiff, strong, stable, structure, product, model, template, construct, healthy, ingredients, recipe, balanced diet, create, precise, texture,
E	Making a dragon – Around the World Theme Making Parkin - Let's Celebrate Theme Peasholm Park Visit (sculptures) Beach Visit (sculptures) Making a Sculpture Trying new food – Around the World Theme

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Year 2 Learning	
S & K	<p>Technical Knowledge</p> <ul style="list-style-type: none"> ▪ build structures, exploring how they can be made stronger, stiffer and more stable Great Fire of London Theme Seaside Theme Famous People Theme - use joining, folding or rolling to make a product stronger Great Fire of London Theme Seaside Theme Famous People ▪ explore and know how to use mechanisms [for example, levers, sliders, wheels and axles], in their products Great Fire of London Theme (wheels and axles)
	<p>Design</p> <ul style="list-style-type: none"> ▪ design purposeful, functional, appealing products for themselves and other users based on design criteria - add some design features to their products Great Fire of London Theme Seaside Theme Famous People - make sensible choices about which material to use for their constructions Great Fire of London Theme Seaside Theme Famous People ▪ generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology - develop own ideas from initial starting points <p>Great Fire of London Theme Famous People Theme Seaside Theme</p>
	<p>Make</p> <ul style="list-style-type: none"> ▪ select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] - measure materials to use in a model or structure Great Fire of London Theme Famous People Theme Seaside Theme ▪ select from and use a wide range of materials and components, including construction materials and ingredients, according to their characteristics - join materials together as part of a moving product - join materials in different ways - make sensible choices about which material to use for their constructions <p>Great Fire of London Theme Famous People Theme Seaside Theme</p>
	<p>Evaluate</p> <ul style="list-style-type: none"> ▪ explore and evaluate a range of existing products Great Fire of London Theme ▪ evaluate their ideas and products against design criteria - consider how to improve their construction <p>Great Fire of London Theme Seaside Theme</p>
	<p>Cooking & Nutrition</p> <ul style="list-style-type: none"> ▪ use the basic principles of a healthy and varied diet to prepare dishes ▪ understand where food comes from. <p>Comparing Places Theme (exploring combinations of Mexican food) Great Fire of London (bread making) PSHE Link (My Healthy Lifestyle)</p>
V	sticking, joining, 3D, more stable, fixed/moving axel, wheel, chassis, build, stronger, evaluate, design, material, mast, sail, anchor, waterproof, blade, rocket, cone, cylinder

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E	Making a boat, fire engine and rocket Making annual cards (Mother's Day Father's Day, Easter, Christmas) World Book Day Homework Task – Make a bug hotel Fire Station and Lifeboat Visits
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Year 3 Learning	
S & K	Technical Knowledge <ul style="list-style-type: none"> ▪ apply their understanding of how to strengthen, stiffen and reinforce more complex structures Christmas/Winter Cake and Packaging Theme, Magnet Game Theme - consider how to make their textile product strong Stories for younger children ▪ apply their understanding of computing to program, monitor and control their products Scratch Theme (Computing Unit)
	Design <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 groups Christmas/Winter Cake Theme, Stories for younger children - consider what the user would want when choosing textiles Stories for Younger Children Theme ▪ generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes Christmas/Winter Cake Theme Stories for Younger Children Theme Magnet Game Theme - devise a template for their textile project Stories for Younger Children Theme
	Make <ul style="list-style-type: none"> ▪ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately <ul style="list-style-type: none"> - select the most appropriate tools and techniques to use for a given task - use a range of techniques to shape and mould - use finishing techniques Christmas/Winter Cake and Packaging theme ▪ 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 <ul style="list-style-type: none"> - join materials, including textiles, of different types in different ways - choose textiles based on appearance and other qualities - select the most appropriate materials for their project Christmas/Winter Cake Theme Stories for Younger Children Theme Magnet Game Theme
	Evaluate <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 Christmas/Winter Cake Theme, Stories for Younger Children Theme, Magnet Game Theme
	Cooking & Nutrition <ul style="list-style-type: none"> ▪ understand and apply the principles of a healthy and varied diet Christmas/Winter Cake Theme PSHE Link (My Healthy Lifestyle) Animals Including Humans Theme ▪ prepare and cook dishes using a range of cooking techniques Christmas/Winter Cake Theme ▪ understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. Potatoes (seasonality and growth), WW2 Theme, Plants Theme

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V	Design, make, evaluate, fit for purpose, functional, appealing, strengthen, structures, prototype, running stitch, overcast stitch
E	Making a cake, packaging, a puppet and a magnet game Making annual cards Planting Potatoes

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Year 4 Learning	
S & K	Technical Knowledge <ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures (3D) Electricity Theme - make their products stronger understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Electricity Theme apply their understanding of computing to program, monitor and control their products – Links to Computing Theme
	Design <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 groups Electricity Theme generate, develop, model and communicate their ideas through discussion, annotated sketches, exploded diagrams and prototypes Electricity Theme (switches) <ul style="list-style-type: none"> - incorporate a switch into their product Electricity Theme
	Make <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately <ul style="list-style-type: none"> - work accurately to make cuts and holes - try out new and different ideas - measure carefully to make sure they have not made mistakes - use advanced techniques to shape and mould - use finishing techniques showing an awareness of audience select from and use a wider range of materials and components, including construction materials according to their functional properties and aesthetic qualities <ul style="list-style-type: none"> - make a product which uses an electrical component - add things to their circuits Electricity Theme
	Evaluate <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 <ul style="list-style-type: none"> - alter their product after checking it understand how key events and individuals in design and technology have helped shape the world Individuals Studied in Y4 – Joseph Swan, Thomas Edison Electricity Theme
	Cooking & Nutrition <ul style="list-style-type: none"> understand and apply the principles of a healthy and varied diet PSHE Link (My Healthy Lifestyle)
V	Research, design, criteria, make, product, annotated sketch, exploded diagram, symbol, evaluation, function, Circuit, battery, cell, power supply, wire, lamp, light, bulb, switch, conductor, insulator, electrical,
E	Electricity Theme – making models containing a circuit

Year 5 Learning

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S & K	Technical Knowledge	<ul style="list-style-type: none"> ▪ apply their understanding of how to strengthen, stiffen and reinforce more complex structures Maya Theme Summer Fair Stalls Theme - ensure that their product is strong and fit for purpose ▪ understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] Mechanics theme (new theme) ▪ apply their understanding of computing to program, monitor and control their products Scratch Theme (Computing Unit)
	Design	<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 groups Summer Fair Stalls Theme - consider cost implications when designing Summer Fair Stalls Theme ▪ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and prototypes and computer-aided design - incorporate a mechanism into their product Mechanics theme (new theme)
	Make	<ul style="list-style-type: none"> ▪ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately - measure accurately to ensure everything is precise ▪ select from and use a wider range of materials and components, including construction materials and ingredients, according to their functional properties and aesthetic qualities - refine and further improve their product using a range of materials Mechanics theme (new theme) Summer Fair Stalls Theme
	Evaluate	<ul style="list-style-type: none"> ▪ investigate and analyse a range of existing products Mechanics theme (new theme) ▪ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Mechanics theme (new theme) - refine their product after testing it Mechanics theme (new theme) ▪ understand how key events and individuals in design and technology have helped shape the world Mechanics theme (new theme)
	Cooking & Nutrition	<ul style="list-style-type: none"> ▪ understand and apply the principles of a healthy and varied diet PSHE Link (My Healthy Lifestyle) ▪ prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques PSHE Link (My Healthy Lifestyle) ▪ understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. PSHE Link (My Healthy Lifestyle)
	V	Diet, season, healthy, mix, sieve, whisk, bake, temperature, duration
E		

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Year 6 Learning	
S & K	Technical Knowledge <ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures Shelter Building Theme apply their understanding of computing to program, monitor and control their products Links to Computing Theme understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Electricity Theme
	Design <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 groups <ul style="list-style-type: none"> consider cost implications when designing generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes Shelter Building Theme and pattern pieces <ul style="list-style-type: none"> use different kinds of circuits in their product Christmas Fair Stalls, Stockings Theme Shelter Building Theme
	Make <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately <ul style="list-style-type: none"> ensure that their work is precise and accurate Stockings Theme Christmas Fair Stalls Shelter Building Theme select from and use a wider range of materials and components, including construction materials and textiles, according to their functional properties and aesthetic qualities Shelter Building Theme <ul style="list-style-type: none"> hide joints to improve the look of their product Shelter Building Theme
	Evaluate <ul style="list-style-type: none"> investigate and analyse a range of existing products <ul style="list-style-type: none"> justify why they selected specific materials Shelter Building Theme justify why the chosen material was the best for the task Shelter Building Theme evaluate their ideas and products against their own design criteria and consider the views of others to improve their work <ul style="list-style-type: none"> consider what would improve their product even more Christmas Fair Stalls justify design in relation to the audience Christmas Fair Stalls understand how key events and individuals in design and technology have helped shape the world Individuals Studied in Y6 – Greek design Ictinus and Callicrates under the supervision of the sculptor Phidias or Christopher Wren (RE Unit)
	Cooking & Nutrition <ul style="list-style-type: none"> understand and apply the principles of a healthy and varied diet PSHE Link (My Healthy Lifestyle)
V	Blanket stitch, running stitch, sequin, make, design, evaluate, eye of the needle, thread, customer Shelter, water resistant, durable, prototype, material, strut, horizontal, vertical, reinforce, strengthen, framework, compression, tension Design, survey, evaluation, profit, expenditure, income, audience Switches, bulbs, buzzers, motors, programme, monitor, control

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E	Marble paper rollercoaster (Science transition session) Bewerley Park Theme Shelter Building Christmas Fair Stalls Engineering Week
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