New York Primary School

Progression in Design & Technology

National Curriculum	• Make comments about what they have heard and ask questions to clarify their understanding. • Hold conversation when engaged in back-and-forth exchanges with their teacher and peers. • Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary; • Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate • Show an ability to follow instructions involving several ideas or actions • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge; • Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases; • Use a range of small tools, including scissors, paint brushes and cutlery • Begin to show accuracy and care when drawing. • Safely use and 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	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. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to: **Design** • 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 **Make** • 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 **Evaluate** • 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 **Cooking and Nutrition** • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from	
	EYFS	Year 1	Year 2
Design	• Select and use activities and resources, with help when needed. • Choose the right resources to carry out their own plan. • Explore different materials freely, in order to develop their	• Talk about the product they are designing. • Know the audience for their product. • Talk about why they are making their product.	• Share the audience and purpose of their product. • Think of an idea and talk about how they will put this idea into practice.

	ideas about how to use them and what to make. • Develop their own ideas and then decide which materials to use to express them.	• Talk about how their product will work. • Introduce simple design criteria to help develop their ideas.	• Understand and follow a simple design criteria. • Explore materials in a variety of contexts e.g. construction kits, making templates.
Make	• Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. • Use one-handed tools and equipment, for example, making snips in paper with scissors. • Create closed shapes with continuous lines, and begin to use these shapes to represent objects. • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. • Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	• Use their design to help them to create the product. • Choose from a small selection of tools or equipment. • Choose from a small range of materials and begin to explain the reasoning behind their choice.	• Choose from a range of tools and equipment and explain the reasoning behind their choice. • Choose from a range of materials according to their characteristics. • Learn how to measure materials. • Join components in different ways.
Evaluate The evaluation process should be ongoing throughout the entire cycle. Pupils must be given opportunities to evaluate during the design and making process.	• Share their creations, explaining the process they have used. • Return to and build on their previous learning, refining ideas and developing their ability to represent them.	• Learn how to talk about what went well. • Learn how to talk about what did not go so well. • Suggest simple improvements to what they have made. • Share an opinion about an existing product. • Suggest what materials might be used for existing products.	• Further explore existing products: What/ who are they for? How do they work? What materials are they made from? What do you like/ dislike about the product? • Give an opinion about their product thinking about the design criteria

			• Suggest how their products can be improved
Technical Knowledge	• Use a range of small tools, including scissors, paintbrushes and cutlery.	**Structures** • Begin to understand how to make structures more stable • Learn about making structures move by using levers and sliders • Begin to experiment with textiles by attaching two pieces of material • Begin to use appropriate technical vocabulary relevant to the chosen topic	**Structures** • Gain further knowledge of how to make structures more stable and strong, experimenting with techniques • Learn about making structures move by using levers and sliders, wheels and axles • Create two identical fabric shapes and attach them to make a 3D textile product • Build upon their use of technical vocabulary and begin to identify words that are specific to a topic e.g. stitch for textiles
Cooking and Nutrition		• Know that all foods come from animals and plants • Refer to the EatWell Plate and introduce the 5 main food groups • Begin to prepare simple dishes with teacher support e.g. peeling/ grating/ cutting	• Know that food has to be farmed, grown or caught • Name and sort foods into the 5 main food groups on the EatWell plate • Begin to independently prepare simple dishes without a heat source using skills previously learnt: peeling, grating, cutting

National Curriculum	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. 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: **Design** • 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 **Make** • 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** • 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

	Year 3	Year 4	Year 5	Year 6
Design	• gather information about the needs and wants of particular individuals and groups using given questions • begin to develop their own design criteria as a class and use these to inform their ideas • generate ideas focusing on what the user requires • begin to think about what resources are available • learn how to use Computer-Aided-Desi	• begin to develop questions to gather information about the needs and wants of particular individuals or groups • develop their own design criteria individually and use these to inform their ideas • use the design criteria and user information to generate ideas • consider the availability of resources in the design process	• Begin to carry out research, using surveys, interviews or questionnaires • identify the needs, wants of particular individuals and groups • begin to think about the preferences and values of particular individuals and groups • work as a small group to develop a simple design specification to guide their thinking • Continue to use CAD to develop and communicate designs	• Develop confidence in carrying out research, using: Surveys, interviews, questionnaires, web-based resources • Share and clarify ideas through discussion • identify the needs, wants of particular individuals and groups • take into consideration the preferences and values of particular

	gn (CAD) to create an idea • discuss and share ideas	• Practice using CAD to develop a design • Discuss and share ideas using prototypes and annotated sketches to model	• Discuss and share ideas using prototypes, pattern pieces and cross-sectional drawings	individuals and groups • develop a simple design specification to guide their thinking • model their ideas using all of the examples learnt previously • introduce the idea of an exploded diagram
Make	• select tools and equipment from a small range suitable for the task • talk about why they have chosen a particular tool or piece of equipment • select from a given set of materials and components suitable for the task • explain their choice of materials and components according to how they will work or look • order a given set of instructions for the making process of a product • follow these instructions during the making process • know some simple rules about hygiene • learn and follow rules when using tools and equipment • develop accuracy in measuring, marking out and cutting and shaping materials • develop accuracy in assembling and joining materials • apply a range of finishing techniques, including those from art and design, with some accuracy e.g. painting, smoothing, mark making		• select tools and equipment suitable for the task • explain their choice of tools and equipment in relation to the skills and techniques they will be using • select materials and components suitable for the task • explain their choice of materials and components according to functional properties and aesthetic qualities • begin to produce appropriate lists of tools, equipment and materials that they need using their design to support • formulate step-by-step plans as a guide to making e.g. instructions • share ideas and create the rules for food hygiene • know and follow the rules for tools and equipment they intend to use • 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, including those from art and design • discuss and find solution to practical problems they encounter	
Evaluate The evaluation process should be ongoing	Across KS2 pupils should: • identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work			
	Begin to investigate:		**Begin to investigate:**	

throughout the entire cycle. Pupils must be given opportunities to evaluate during the design and making process.	• who designed and made the products • where products were designed and made • when products were designed and made • whether products can be recycled or reused • Refer to the given design criteria throughout the making process. • Use given criteria to evaluate their own design and product. • Introduce a small selection of inventors, designers, engineers, chefs and manufacturers who have developed new, innovative products		• how much materials and products might cost • the sustainability of materials used • the long term impact of their products e.g. recyclability • Use their own design criteria to evaluate their final product • Develop their critical evaluation skills for each stage of the design and make of the product: design, manufacture, fit for purpose • Know at least 1 designer, engineer, chef and manufacturer that they have been inspired by	
Technical Knowledge	**Across KS2, pupils should:** • be able to apply their Maths and Science skills in order to design and make products that work • understand that materials they choose should have functional and aesthetic benefits • begin to understand how they can group materials together to have the biggest impact on the final design and product functionality • learn how systems work, identifying an input, process and output • become confident in using technical vocabulary when talking and writing about their product			
	• explore how mechanical systems work e.g. levers and linkages • begin to create simple computer code to control their products • know how to make strong, stiff structures building on knowledge in KS1 • continue to build upon their stitching skills to create a 3D textiles product	• know how levers and linkages work to create movement • know how simple electrical circuits and components can be used to create functional products • know how to create computer code to control a product • create shell structures that are strong and secure • use a single piece of material to create a 3D textile product	• explore how mechanical systems work using cams and pulleys • explore how to create computer code that changes upon a change in environment e.g. when X happens, do X • begin to create 3D textile products using a variety of materials and shapes	• create mechanical systems such as cams or pulleys or gears to create movement • assemble electrical circuits and components to create functional products • continue to create computer code that can adapt to changes in the environment e.g. when X happens, do X • create a textile product using all of

				the stitches learnt previously, knowing which materials are best to attach together in a variety of shapes
Cooking and Nutrition	**Across KS2 pupils should know:** • that food is grown, reared and caught in the UK, Europe and the wider world • how to prepare and cook a variety of predominantly savoury dishes • know the basic principles of food safety and hygiene • where appropriate, use a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking			
	• continue to use the EatWell plate to know about a varied, balanced diet of different foods and drinks • know that food and drink are needed in order to maintain and fuel a healthy, active lifestyle		• begin to understand how to adapt recipes to change the appearance, taste, texture etc. • continue to use the EatWell plate and introduce the properties of different foods and how we can benefit from them e.g. water, fibre, carbohydrates etc.	