Federation of Spixworth Schools Design Technology Skills Progression			
	Reception	**KS1**	
Curriculum	**Expressive Arts and Design** **ELG: Creating with Materials** Children at the expected level of development will: Safely use and explore a variety of materials, tools and techniques experiment with colour, design, texture, form and function Share their creations, explaining the process they have used.	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.	
Coverage	**A Reception designer can:**	**A Year 1 designer can:**	**A Year 2 designer can:**
Design			
Design products based on design criteria	Use their senses to explore and describe objects Make observations about the features of objects	Make simple models/products against a design brief.	Design products based on a design criteria i.e puppets, pop up cards, clay models.
Use drawing, templates, mockups and ICT to share ideas	Talk about how they are approaching a task Think of some ideas of their own	Draw a picture of what is going to be made. Talk about what they are going to make. Explain why they have used a particular design on a card.	Plan what they are going to design with sketches. Explain how their design will work. Explain why they have chosen certain simple features and joins.

Make			
Select from and use a range of tools and equipment	Use tools with support to manipulate materials	Cut materials using scissors Measure materials using a ruler Join using sellotape Join using glue	Use a simple stitch Use tying Start to measure materials Mark where materials need to be cut Use split pins to join
Select from and use a wide range of materials and components	Talk about what tools they are using and why	Start to explain why certain materials are good for a job, i.e it bends, is soft, is sticky, is strong	Start to consider which material will be best for a job based on flexibility, strength, colour
Evaluate			
Explore and evaluate a range of existing products	Talk about their favourite toys and what makes them so	Talk about a range of toys and explain which are the best for playing with and why.	Talk about a range of designs and explain which are best and why.
Evaluate their ideas and products against design criteria	Talk about what they like about their creations Talk about what went well and less well	Talk about what they have made and how it matches what they set out to make.	Talk about what they have made and how it matches what they set out to make. Suggest how they might change things if they were to make the same product again. Technical knowledge Build structures, exploring how then can be made stronger stiffer and more stable.
Technical Knowledge			
Build stable structures,	Explore a range of construction kits	With construction kits talk about which structure is stronger/more stable (and start to explain why).	Use construction kits and explain why some structures are stronger more stable than others.
Explore and use mechanisms	Explore a range of construction kits	Look at/explore wheels, axels, turning mechanisms, hinges and simple levers Play with/use wheels, axels, turning mechanisms, hinges and simple levers.	Make card products that use levers and sliders Make construction toys that use wheels and axles
Cooking and Nutrition			
Use the basic principles of a healthy and varied diet to prepare dishes	Know that some foods are good for you (i.e. fruit and veg)	Know that some foods (i.e fruit and veg) should be plentiful in a healthy diet (5 a day) and others (sugar and fat) should be eaten in moderation. Prepare i.e fruit salads Talk about why these are healthy meals	Know that bread, rice and pasta are part of a healthy diet. Know that meat and dairy products are part of a healthy diet eaten in moderation. Prepare ie. Cous-cous/pasta dish, soup Talk about why these are healthy meals
Understand where food comes from	Know that some foods can be grown at home/school	Know that i.e some fruit and veg are grown, meat comes from animals, milk and cheese are bi-products of animals.	Know how pasta and bread are made. Know where rice comes from. Know some vegetables grow underground. Know a variety of fruit and veg come from around the world.

Federation of Spixworth Schools Design Technology Skills Progression				
	KS2			
Curriculum	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. Cooking and Nutrition ● understand and apply the principles of a healthy and varied diet ● prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques ● understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.			
Coverage	**A Year 3 designer can:**	**A Year 4 designer can:**	**A Year 5 designer can:**	**A Year 6 designer can:**
Design				

Use research and develop criteria to design a product.	Identify with support the design features of their products that will appeal to intended customers Bring in and research a broad range of existing products to help generate ideas about existing products to base their ideas. Design innovative and appealing products that have a clear purpose and are aimed at a specific user	Research and use their knowledge of a broad range of existing products to help generate their ideas and make sure they are fit for purpose when designing, explore different initial ideas before coming up with a final design Work in a broader range of relevant contexts, for example entertainment, school, leisure, food industry and the wider environment.	use their knowledge of a broad range of existing products to help generate their ideas; design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user;	use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market; work in a broad range of relevant contexts, for example, the home, school, leisure, culture, and the wider environment.
Generate, and communicate ideas.	explain how particular parts of their products work Use annotated sketches to develop and communicate their ideas;	When planning, start to explain their choice of materials; Use computer research to develop and communicate their ideas	generate, develop, model and explain how particular parts of their products work by communicating their ideas through discussion;	use annotated sketches, cross sectional and exploded diagrams prototypes, pattern pieces and computer aided design. generate a range of design ideas and clearly communicate final designs;
Make				
Select and use a range of tools and equipment	Experiment by selecting from a range of tools and equipment, explaining their choices Begin to learn about a range of materials and components. Learn about the functional properties and aesthetic qualities of a range of materials and components.	With growing confidence and teacher guidance, carefully select from a range of tools and equipment, explaining their choices Select from a range of materials and components according to their functional properties and aesthetic qualities place the main stages of making in a systematic order	Further develop understanding of which materials and tools to select based on their functional properties and effects. Explain their choices for their selection of tools and materials. Use tools and materials with greater understanding and confidence.	Independently plan by suggesting what to do next with growing confidence, select from a wide range of tools and equipment, explaining their choices Know and understand the functional properties and aesthetic qualities of a range of materials and components best suited for the project. create step-by-step plans as a guide to making
Select from a wider range of materials and components,	Be introduced to and learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures	Develop skills in using a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures	Demonstrate skills in using a range of tools and equipment safely and appropriately and to follow hygiene procedures Independently take exact measurements	Competently use a range of tools and equipment safely and appropriately and to follow hygiene procedures successfully

	Be introduced to a range of materials and components including construction materials, textiles, ingredients and electrical components Learn to measure and mark out to the nearest cm and millimetre Cut, shape and score materials with some degree of accuracy Begin to select and use different and appropriate finishing techniques to improve the appearance of a product.	use a wider range of materials and components including construction materials, textiles, ingredients and electrical components Demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product Assemble, join and combine material and components with some degree of accuracy	and mark out, to within 1 millimeter cut, shape and score a range of materials with precision and accuracy demonstrate how to measure, cut and shape to make a more complex product join textiles using a greater variety of stitches	use a wider range of materials and components, including construction materials, textiles, and ingredients assemble, join and combine materials and components with accuracy Refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape.
Evaluate				
Investigate and analyse existing products.	Begin to explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose	Explore what materials/ingredients products are made from and suggest reasons for this consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product	Complete simple survey of a product analysis and use this to inform their design outcomes.	complete detailed competitor analysis of other products on the market
Evaluate ideas and products	With support, evaluate their product against their original design criteria	Evaluate their product against their original design criteria Consider the views of others to improve their work	Evaluate their ideas and products against the original design criteria, making changes as needed.	critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make
Understand events and individuals in DT.	Be introduced to key designers	Begin to understand how designs of individuals in design and technology have helped shape the world.	Know how key designers have influenced particular products/ designs.	Understand how key events and individuals in design and technology have helped shape the world.
Technical Knowledge				

Understanding of more complex structures.	understand that materials have both functional properties and aesthetic qualities	Begin to understand how to strengthen, stiffen and reinforce structures in order to create a desired outcome for their product.	Use their developing knowledge of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products	Use and apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products
Understand seasonality and origin of ingredients	Learn about where common local produce is grown in the UK. That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world	Know that seasons may affect the food available how food is processed into ingredients that can be eaten or used in cooking	Understand the origin of ingredients can come from all around the world and that ingredients that require more heat/ light and specific growing conditions are dependent on the distance near the equator.	Understand the impact of seasonality of ingredients and those which can be grown from overseas. Be able to describe where the origin of ingredients are grown on a map.
Mechanical systems -gears	Learn how mechanical systems such as levers and linkages create movement	Have an awareness of how pneumatic systems that use gas or pressurised air create movement	Understand how mechanical systems such as cams or pulleys or gears create movement	Explain how mechanical systems, such as CAMs, create movement.
Mechanical systems - circuits	Begin to explore and make and represent simple electrical circuits to create a functional product.	Understand and demonstrate how electrical systems have an input and output process.	Show how more complex electrical circuits and components can be used to create functional products	Design and create own mechanical systems and circuits using different components.
Programme, and control products.	Use simple programing software on a computer to control their products by inputting simple algorithms.	Debug and begin to trouble shoot with more independence programmes they have made to control a product	Show how to program a computer to monitor changes in the environment and control their products	Apply their knowledge of programming to control products
Cooking and Nutrition				
Principles of a healthy and varied diet.	Start to be able to explain an 'Eatwell plate'.	Explain the types of foods (fruit and veg, dairy products) on an 'Eatwell' plate. Know that everyone should eat at least five portions of fruit and vegetables every day	Explain the types of foods (carbohydrate, protein) on an 'Eatwell plate'. Understand that to be active and healthy, food and drink are needed to provide energy for the body	Apply the concept of an Eatwell plate to the meals throughout the day. Be able to talk about some of the consequences of a poor diet. Know that different food and drink contain different substances – nutrients, water and fibre – that need for health

Prepare dishes	To know the difference between baking, boiling, steaming, frying, deep and shallow, and stir frying. To have experienced some these cooking techniques. To begin to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking **Across all KS2 year groups:** To prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source	To know the difference between baking, boiling, steaming, frying, deep and shallow, and stir frying. To have experienced these cooking techniques and talk about which methods are used for different types of food. To use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking and talk about how these techniques change the ingredients and their cooking times.	To have experienced a range of cooking techniques and start to be able to explain why some are healthier than others. To begin to know that recipes can be adapted to change the appearance, taste, texture and aroma	To have experienced a range of cooking techniques and be confident in explaining why some are healthier than others. To know that recipes can be adapted to change the appearance, taste, texture and aroma and begin to apply changes in their cooking.