Our Lady and St Patrick's RC Primary School Curriculum Intent: Design and Technology

	COMPONENTS of KNOWLEDGE							
	30-50	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Product Design	➢ Constructs with a purpose in mind.	➢ Constructs with a purpose in mind using a variety of resources.	➢ Talk about design ideas ➢ Make a template of a design and discuss it ➢ Use IT to explore ideas - draw a design using a basic paint program	➢ Create a drawing of a design and discuss it ➢ Make a mockup of a design and discuss it ➢ Use IT to explore ideas - research design ideas and draw a design using a basic paint program	➢ Generate their own ideas through discussion ➢ Design products that are functional and designed for purpose ➢ Use given shapes on a basic computer program to create a design eg, use a computer aided design program.	➢ Develop their own ideas through discussion. ➢ Design and create a cross-sectional drawing of their design. ➢ Use given shapes on a computer program to create a design eg, use a computer aided design program to create a net for packaging.	➢ Can design products that are innovative and appeal to individuals. ➢ Can create a prototype of their design.	➢ Can design products that are innovative and appeal to individuals or groups. ➢ Can use a computer design program to communicate their ideas eg, use a computer aided design program to create packaging designs with text and graphics.
Vocabulary	Make, build	balance	planning, investigating	Design, purpose, discuss, research, ideas	model, criteria, functional, drawing	design brief, design criteria, innovative, prototype, user, purpose, function, planning, annotated sketch,	functionality, authentic, user, design specification, research, annotate, mock-up, prototype	Graphic, communicate
Technical Knowledge **Construction and Mechanisms**	➢ Realises tools can be used for a purpose.	➢ Making enclosures and creating spaces.	➢ Know about the movement of simple mechanisms such as levers, sliders, wheels and axels	➢ Know about the simple working characteristics of materials and components ➢ Know how freestanding structures can be made stronger, stiffer and more stable ➢ Know the correct technical vocabulary for the projects they are undertaking	➢ Know how to use learning from science to help design and make products that work ➢ Know how to use learning from mathematics to help design and make products that work ➢ Know that materials have both functional properties and aesthetic qualities ➢ Know that materials can be combined and mixed to create more useful characteristics ➢ Know the correct technical vocabulary for the projects they are undertaking ➢ Know how simple circuits and	➢ Know that mechanical and electrical systems have an input, process and output ➢ Know how mechanical systems such as levers and linkages or pneumatic systems create movement ➢ Apply their understanding of computing to program, monitor and control their product	➢ Understand how to strengthen, stiffen and reinforce 3-D frameworks. ➢ Understand and use electrical systems in their products. ➢ Understand that mechanical and electrical systems have an input, process and an output. ➢ Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.	➢ Know and use technical vocabulary relevant to the project. ➢ Apply their understanding of computing to program, monitor and control their products

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					components can be used to create functional			
Make Construction	➢ Experiments with blocks colours and marks. ➢ Use a variation of construction materials. ➢ Begin to stack blocks vertically and horizontally. ➢ Joins construction pieces together to build and balance.	➢ Manipulates materials to achieve a planned affect. ➢ Uses simple tools to effect changes to materials.	➢ Through exploring and assembling, find ways to make structures more stable.	➢ Through exploring and assembling, find ways to make structures more stable so they are freestanding. ➢ Use tape and glue to create temporary joins, fixed joins and moving joins. ➢ Make a simple circuit in a model (e.g. a closed circuit with a bulb).	➢ Make a shell or frame structure, strengthening with diagonal struts. ➢ Can create simple joins with wood. e.g. Butt joint, dowel joint ➢ Can measure and mark a square section & dowelling to the nearest cm	➢ Make a shell or frame structure, strengthening with diagonal struts. ➢ Can include a simple electrical circuit in their product that produces one outcome. e.g. Light or sound ➢ Can use a simple mechanical system in their product. e.g. Gears, levers and cams	➢ Can build frameworks using a range of materials: wood, card, corrugated plastic ➢ Can cut internal shapes ➢ Use a glue gun with close supervision ➢ Can use more complex mechanical systems in their products e.g. Pulleys and linkages. ➢ Can select the most appropriate way to join or secure materials within their design ➢ Can include an electrical circuit that produces an outcome e.g. light or sound	➢ Can build frameworks using a range of materials: wood, card, corrugated plastic ➢ Can cut accurately to 1mm: strip wood, dowel & square section ➢ Can use more complex mechanical systems in their products e.g. Pulleys and linkages. ➢ Can include an electrical circuit that produces more than one outcome e.g. light and sound ➢ Can use a computer program to control their products e.g. Using a program which would allow them to program a delay or use of a sensor
Vocabulary	Make, build	Balance, effect, change	cut, fold, join, fix structure, weak, strong, base, thinner, thicker, corner, point, straight, curved, metal, wood, plastic slider, lever, pivot, slot, bridge/guide,	Explore, assemble, structure, vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, shaping, finishing, fixed, free, moving, mechanism Circuit. Wire, bulb, battery	Innovative, functional, strut, dowell join, butt join l system, input, process, output	Strut, gear, cam, product linear, rotary, oscillating, reciprocating series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, insulator, conductor, control, program, system, input device, output device	drive belt, rotation, spindle, driver, follower, ratio, transmit,	reed switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), USB cable, t device, output device, series circuit, parallel circuit, sensor
Textiles			➢ Know that a 3-D textiles product can be assembled from two identical fabric shapes	➢ Know how to join fabrics using a running stitch	➢ Know how to strengthen, stiffen and reinforce existing fabrics. ➢ Understand how to securely join two pieces of fabric together. Using back stitch	➢ Understand the need for patterns and seam allowances. ➢ Know and use technical vocabulary relevant to the project.	➢ Fabrics can be strengthened, stiffened and reinforced where appropriate.	➢ A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.

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								➢ Know how to use an applique stitch.
Make Textiles	➢ Uses 1 handed tools and equipment eg snips in paper with child scissors.		➢ Join fabrics using staples. ➢ Decorate textiles using buttons, beads, braids ribbons and sequins. ➢ Colour fabrics using paints to print and paint.	➢ Join fabrics using staples and a running stitch.	➢ Can choose the most appropriate joining technique to add to a piece of fabric ➢ Can cut slots in fabric	➢ Join fabrics together using a wider range of stitches. e.g. Back stitch, chain stitch	➢ Can create their own simple sewing pattern or printing block to use in their design	➢ Can use appliqué to decorate by glueing and stitching
Textiles Vocabulary	make	Material, change,	template, pattern pieces, mark out, decorate, finish, fabric	Running stitch, staple	slot	back stitch, chain stitch,	Printing block, design	appliqué
Evaluate	➢ Beginning to be interested in and describe the texture of things	➢ Selects appropriate resources and adapts work where necessary.	➢ Say what they like and dislike about existing products.	➢ Say what they like and dislike about existing products. ➢ Say how well their design has met a given criteria.	➢ Explain strengths and weaknesses of existing products. ➢ Evaluate their work against their own design criteria.	➢ Explain strengths and weaknesses of existing products. ➢ Evaluate their work against their own design criteria. ➢ Design and describe well-known designers and well-known inventors in their project.	➢ Evaluate existing products in relation to their purpose and audience ➢ Explore the impact of well known designers and inventors and how their products helped shape the world	➢ Evaluate existing products in relation to their purpose and audience ➢ Collect feedback from others to find out how to improve their product
Vocabulary	texture	resources	evaluate , product	Criteria, function, purpose	appealing	evaluating, design brief design criteria, sensory evaluations	prototype	Feedback, improvements

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	COMPONENTS of KNOWLEDGE							
	30-50	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Understanding Food	➢ Can tell adults when hungry or tired ➢ Can usually manage washing and drying hands	➢ Shows some understanding that good practice with regard to hygiene and eating can contribute to good health ➢ Knows the importance of a healthy diet ➢ Can talk about ways to keep healthy	➢ Understand that food comes from plants or animals	➢ Understand that food has been farmed, caught or grown.	➢ Understand which foods are reared, caught or grown. ➢ Understand that the seasons can affect food production. ➢ Understand that recipes can be changed by adding or taking away ingredients	➢ Understand which foods are reared, caught or grown and that this happens in the UK. ➢ Understand that food is processed into different ingredients eg, milk into butter.	➢ Understand which foods are reared, caught or grown and that this happens in the UK and across the globe. ➢ Understand that some foods are seasonal and can give some examples ➢ Understand how different foods are produced in different areas of the world.	➢ Understand that recipes can be adapted to change the appearance, taste and aroma of a dish. ➢ Understand that sometimes raw ingredients need to be processed before they can be used in cooking (eg, defeathering a chicken). ➢ Understand what affects food types have on the body (eg the impact of eating too much sugar).
Vocabulary	Hungry Tired Soap	Germs/bacteria Clean Dirty Mouldy	Healthy Taste adjectives - juicy, squishy, sour, sweet, soft, hard	'The Eat well plate' Nutrition Farmed Grown	Processed Irreversible Reared Taste adjectives - plain, bland, sweet, sugary e Carbohydrate Protein Fat Dairy Oil	Meat Grown Seasonality	Fair Trade National Global Trade	aroma
Design	➢ Realises tools can be used for a purpose	➢ Constructs with a purpose in mind	➢ Identify that people should eat at least 5 portions of fruit and vegetables a day. ➢ Talk about design ideas	➢ Create a drawing of a design and discuss it	➢ IGenerate and develop their own ideas through discussion ➢ Design products that are functional and designed for purpose	➢ Identify that food and drink are needed to provide energy for a healthy and active lifestyle ➢ Design and create a cross-sectional drawing of their design. ➢ Use given shapes on a computer program to create a design eg, use a computer aided design program to create a net for packaging.	➢ Identify that food and drink provided certain nutritional and health benefits which support a healthy lifestyle ➢ Can design products that are innovative and appeal to individuals or groups. ➢ Can create a prototype of their design.	➢ Identify which food and drink provided certain nutritional and health benefits which support a healthy lifestyle, and why. ➢ Can use a computer design program to communicate their ideas eg, use a computer aided design program to create packaging designs with text and graphics.

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Vocabulary			Ingredients Recipe	Healthy diet, portion	purpose healthy/varied diet, packaging	hygienic, frozen, tinned, processed, seasonal, harvested	fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality	Benefit, communicate, graphics.
Make	➢ Uses various construction materials ➢ Beginning to construct by stacking blocks vertically, horizontally and enclosing space	➢ Experiments to create different textures ➢ Manipulates materials to achieve a planned effect ➢ Constructs with a purpose in mind ➢ Selects tools and techniques needed to shape, assemble and join materials they are using	➢ Prepare simple dishes and safely with or without a heat source. ➢ Use cooking techniques such as: cutting, peeling and grating.	➢ Read a simple scale to measure and weigh ingredients.	➢ Weigh ingredients to an appropriate level of accuracy ➢ Use cooking techniques such as: chopping, mixing and kneading	➢ Use cooking techniques such as: Grating and spreading.	➢ Use cooking techniques such as: spreading and baking ➢ Select the appropriate tools to follow a given recipe to make a savoury dish	➢ Estimate the amount of ingredients to an appropriate level of accuracy ➢ Use cooking techniques such as slicing and peeling.
Vocabulary	stack	cut	Peel Chop Grate Prepare Measure Method Mixture	Grating Savoury Grams Scale	Hygienically Accurate Reliable Consistent Bacteria Quantity	Kneading Contamination	combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble	Estimate accuracy
Evaluate	➢ Beginning to be interested in describing the texture of things	➢ Selects appropriate resources and adapts where necessary	➢ Decide own satisfaction of their own product	➢ Teacher model evaluation and choice ➢ Explain why and what could have made it better.	➢ Evaluate their use of technique. ➢ Explain strengths and weaknesses of existing products.	➢ Evaluate their work against their own design criteria.	➢ Collect feedback from others to find out how to improve their product	➢ Evaluate existing products in relation to their purpose and audience
Vocabulary	Taste - sweet, salty, sour Smell - strong	change	like/ dislike because	Evaluate, change, improve, choice	strength, weakness	design criteria	Feedback, product	audience, purpose,
Technical Knowledge	➢ Can use scissors safely to make snips in paper	➢ Can use and transport scissors safely ➢ Can use a knife and fork effectively to cut their own food	➢ Sort foods into 5 groups using 'The Eatwell Plate' ➢ Know the correct technical vocabulary for the projects they are undertaking	➢ Sort foods into 5 groups using 'The Eatwell Plate' ➢ Know how to change the consistency of ingredients and how they can change the consistency of the final product.	➢ Sort foods into the 5 groups using 'The Eatwell Plate' and understand all groups and why they differ in size, making up a healthy diet. ➢ Know the correct technical vocabulary for the projects they are undertaking	➢ Sort foods into the 5 groups using 'The Eatwell Plate' and understand all groups and why they differ in size, making up a healthy diet. ➢ Know how to use learning from science to help design and make products that work	➢ Know how to use utensils and equipment including heat sources to prepare and cook food. ➢ Understand about seasonality in relation to food products and the source of different food products.	➢ Know and use relevant technical and sensory vocabulary.

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						➢ Know how to use learning from mathematics to help design and make products that work.		