Design and Technology Knowledge Development

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
EYFS	Area of learning	**Opportunities:** Free exploration of construction resources – inside and outside (e.g. Lego, Duplo, Mobilo, stickle bricks, wooden blocks, crates, tyres, pipes) Junk modelling – free exploration Scissors, tape etc. available in creative area and outdoor area	**Opportunities:** Junk modelling – rockets/fireworks Diva lamps using clay Birthday/Christmas cards Creating and wrapping presents	**Opportunities:** Fruit salad	**Opportunities:** Junk modelling – modes of transport	**Opportunities:** Loose parts caterpillars/butterflies	**Opportunities:** Pirate ships, treasure chests, telescopes etc. created from junk modelling Pizza making Den building (forest schools)
	Prior knowledge	Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. Use their imagination as they consider what they can do with different materials.	Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. Use their imagination as they consider what they can do with different materials.	Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Make simple models which express their ideas.	Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Make simple models which express their ideas.	Join different materials and explore different textures.	Join different materials and explore different textures.
	New knowledge	**Begin to explore and use a variety of a materials, tools and techniques.**	**Share their creations, explaining the process they have used.**	**Experiment with colour, design, texture, form and function.** **Share their design creations with a group, explaining the features and processes**	**Return to and build on their previous learning.**	**Create collaboratively, sharing ideas, resources and skills.** **Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.**	**Return to and build on their previous learning, refining ideas and developing their ability to represent them.**
	Key vocabulary	**Substantive** Like, dislike, make, use, explore **Disciplinary** Tools e.g. Scissors, tape, glue, make, materials, fold, join, cut, snip, press, bumpy, smooth, shiny, rough, hard, soft.	**Substantive** Like, dislike, make, use, explore **Disciplinary** Create, make, clay, mould, roll, shape, explain	**Substantive** Like, dislike, make, use, explore **Disciplinary** Fruit, vegetables, healthy, unhealthy, eat, different, food, cut, chop, colour, design, texture, form, function, bumpy, smooth, shiny, rough, hard, soft	**Substantive** Like, dislike, make, use, explore **Disciplinary** Tools e.g. Scissors, tape, glue, make, materials, fold, join, cut, snip, press, bumpy, smooth, shiny, rough, hard, soft.	**Substantive** Like, dislike, make, use, explore **Disciplinary** Tools e.g. Scissors, tape, glue, make, materials, fold, join, cut, snip, press, bumpy, smooth, shiny, rough, hard, soft.	**Substantive** Like, dislike, make, use, explore **Disciplinary** Fruit, vegetables, healthy, unhealthy, eat, different, food, cut, chop, grate, knead, colour, design, texture, form, function, bumpy, smooth, shiny, rough, hard, soft

Year 1	Area of learning		**Seasons** **<u>Structures</u>** Build structures, exploring how they can be made stronger, stiffer and more stable		**Plants** **<u>Food and Nutrition</u>** Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.		**Journeys** **<u>Mechanisms</u>** Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
	Prior knowledge		Begin to explore and use a variety of a materials, tools and techniques. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the features and processes they have used. Return to and build on their previous learning, refining ideas and developing their ability to represent them.		Begin to explore and use a variety of a materials, tools and techniques. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the features and processes they have used. Return to and build on their previous learning, refining ideas and developing their ability to represent them.		Begin to explore and use a variety of a materials, tools and techniques. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the features and processes they have used. Return to and build on their previous learning, refining ideas and developing their ability to represent them.
	New knowledge		In order to design and make a rain gauge: • Draw on their own experience to help generate ideas • Model their ideas in card and paper • Develop their design ideas applying findings from research • Make their design using appropriate techniques • With help measure, mark out, cut and shape a range of materials • Use tools *eg scissors, tape, pens, rulers and a hole punch* safely • Assemble, join and combine materials and components		In order to design and make a **salad:** • **Use knowledge of existing products to help come up with ideas** • **Develop their design ideas applying findings from research.** • **Make their design using appropriate techniques** • **With help measure a range of materials** • **Use tools *eg knives, peeler*** • **Select and use appropriate fruit and vegetables, processes and tools** • **Use basic food handling, hygienic practices and personal hygiene**		In order to design and make **<u>a toy</u>** based on the book 'Snail and the Whale': • **Model ideas by exploring materials, components and construction kits and by making templates and mock-ups in card and paper.** • **Develop their design ideas applying findings from research.** • **Make their design using appropriate techniques** • **With help measure, mark out, cut and shape a range of materials** • **Use tools safely** • **Assemble, join and combine materials and components together using a variety of**

			together using a variety of temporary methods e.g. glues or masking tape • Use simple finishing techniques to improve the appearance of their product • Evaluate their product by discussing how well it works in relation to the purpose		• **Use simple finishing techniques to improve the appearance of their product** • **Evaluate their products as they are developed, identifying strengths and possible changes they might make**		**temporary methods e.g. glues or masking tape** • **Use simple finishing techniques to improve the appearance of their product** • **Evaluate their product by asking questions about what they have made and how they have gone about it.**
	Key vocabulary		**Substantive** Design, ideas, criteria, make, product, user, purpose, function, like / dislike **Disciplinary** Cut, measure, fold, join, gluing, tear, decorate, model, techniques, materials, cut, shape, assemble, join, combine, strengthen, stable, stiffer, finish, , weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder		**Substantive** Design, ideas, criteria, make, product, user, purpose, function, like / dislike, hygiene **Disciplinary** Cut, peeling, hygiene, products, research, techniques, materials, fruit and vegetables, appearance, underground, over ground, roots, portion, Food groups, peeling, grating cutting, healthy/unhealthy, farming, fishing, plants, animals		**Substantive** Design, ideas, criteria, make, product, user, purpose, function, like / dislike, **Disciplinary** Wheels, axles, strengthen, components, templates, mock-ups, research, measure, cut, shape, assemble, join, combine, temporary, finish, appearance, mechanism.
Year 2	Area of learning		**Africa** **<u>Textile structures</u>** Build structures, exploring how they can be made stronger, stiffer and more stable	**Animals including humans** **<u>Food and Nutrition</u>** Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.			**Isambard Kingdom Brunel** **<u>Vehicles</u>** Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
	Prior knowledge			• Suggest ideas and explain what they are going to do • Develop their design ideas applying findings from research. • Make their design using appropriate techniques • With help measure a range of materials • Use tools *eg knives, grater*			• Identify a target group for what they intend to design and make • Model their ideas in card and paper • Develop their design ideas applying findings from research. • Make their design using appropriate techniques

				• Select and use appropriate fruit and vegetables, processes and tools • Use basic food handling, hygienic practices and personal hygiene • Use simple finishing techniques to improve the appearance of their product • Evaluate their products as they are developed, identifying strengths and possible changes they might make			• With help measure, mark out, cut and shape a range of materials • Use tools *eg* …safely • Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape • Use simple finishing techniques to improve the appearance of their product • Evaluate their product by asking questions about what they have made and how they have gone about it.
	New knowledge		In order to design and make **a lion King Puppet**: • **Generate ideas by drawing on their own and other people's experiences** • **Identify simple design criteria** • **Make simple drawings and label parts** • **Begin to select tools and materials; use vocab' to name and describe them** • **Measure, cut and score with some accuracy** • **Use hand tools safely and appropriately** • **Assemble, join and combine materials in order to make a product** • **Cut, shape and join fabric to make a simple object. Use basic sewing techniques** • **Choose and use appropriate finishing techniques** • **Evaluate against their design criteria**	In order to design and make **a savoury tart**: • **Develop their design ideas through discussion, observation , drawing and modelling** • **Identify simple design criteria** • **Begin to select tools and materials; use vocab' to name and describe them** • **Measure with some accuracy** • **Use hand tools safely and appropriately *e.g. grater, zester, knife*** • **Assemble, join and combine materials in order to make a product** • **Follow safe procedures for food safety and hygiene** • **Choose and use appropriate finishing techniques** • **Talk about their ideas, saying what they like and dislike about them**			In order to design and make a **vehicle**: • **Identify a purpose for what they intend to design and make** • **Identify simple design criteria** • **Make simple drawings and label parts** • **Begin to select tools and materials; use vocab' to name and describe them** • **Measure, cut and score with some accuracy** • **Use hand tools safely and appropriately** • **Assemble, join and combine materials in order to make a product** • **Choose and use appropriate finishing techniques** • **Evaluate their products as they are developed, identifying strengths and possible changes they might make**

	Key vocabulary		**Substantive** Design, ideas, criteria, make, product, user, purpose, function, evaluate, like / dislike **Disciplinary** fabric, strengthen, join, stitch, decorate, cutting, joining, label, needles, pins, assemble, stitch names, felt, dowling, lever, pivot, hinge	**Substantive** Design, ideas, criteria, make, product, user, purpose, function, evaluate, like / dislike, hygiene, healthy / unhealthy **Disciplinary** Grater, zester, knife, cut, peel, grate, chop , food groups, Tasting, Mixing, Utensils, Food groups, Party, Celebrations			**Substantive** Design, ideas, criteria, make, product, user, purpose, function, evaluate, like / dislike, **Disciplinary** Wheels, axles, strengthen, components, templates, mock-ups, research, measure, cut, shape, assemble, join, combine, temporary, finish, appearance, mechanism.
Year 3	Area of learning	**Mighty Mountains** **<u>Pneumatics</u>** Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages; pnuematics]	**Volcanoes** **<u>Food and Nutrition</u>** Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Understand and apply the principles of a healthy and varied diet Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.				**Bronze Age / Iron Age** **<u>Textile structures</u>** Apply their understanding of how to strengthen, stiffen and reinforce more complex structures - textiles
	Prior knowledge		• Develop their design ideas through discussion, observation , drawing and modelling • Identify simple design criteria • Begin to select tools and materials; use vocab' to name and describe them • Measure with some accuracy • Use hand tools safely and appropriately • Assemble, join and combine materials in order to make a product • Follow safe procedures for food safety and hygiene • Choose and use appropriate finishing techniques • Talk about their ideas, saying what they like and dislike about them				• their own and other people's experiences • Identify simple design criteria • Make simple drawings and label parts • Begin to select tools and materials; use vocab' to name and describe them • Measure, cut and score with some accuracy • Use hand tools safely and appropriately • Assemble, join and combine materials in order to make a product • Cut, shape and join fabric to make a simple garment. Use basic sewing techniques • Choose and use appropriate finishing techniques

							• Evaluate against their design criteria
	New knowledge	In order to design and make **a moving toy**: • **Generate ideas for an item, considering its purpose and the user/s** • **Explore, develop and communicate design proposals by modelling ideas** • **Make drawings with labels when designing** • **Select tools and techniques for making their product** • **Measure, mark out, cut, score and assemble components with more accuracy** • **Work safely and accurately with a range of simple tools** • **Think about their ideas as they make progress and be willing change things if this helps them improve their work** • **Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including** • **Evaluate their product against original design criteria *e.g. how well it meets its intended purpose*** • **Disassemble and evaluate familiar products**	In order to design and make **sandwiches** • **Identify a purpose and establish criteria for a successful product.** • **Make drawings with labels when designing** • **Select tools and techniques for making their product** • **Measure and assemble components with more accuracy** • **Work safely and accurately with a range of simple tools** • **Think about their ideas as they make progress and be willing change things if this helps them improve their work** • **Demonstrate hygienic food preparation and storage** • **Use finishing techniques to improve the appearance of their product using a range of equipment.** • **Evaluate their product against original design criteria *e.g. how well it meets its intended purpose*** • **Disassemble and evaluate familiar products**				In order to design and make **a fabric container**: • **Plan the order of their work before starting** • **Explore, develop and communicate design proposals by modelling ideas** • **Make drawings with labels when designing** • **Select tools and techniques for making their product** • **Measure, mark out, cut, score and assemble components with more accuracy** • **Work safely and accurately with a range of simple tools** • **Think about their ideas as they make progress and be willing change things if this helps them improve their work** • **Measure, tape or pin, cut and join fabric with some accuracy** • **Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including** • **Evaluate their product against original design criteria *e.g. how well it meets its intended purpose*** • **Disassemble and evaluate familiar products**
	Key vocabulary	**Substantive** Research, criteria, design, communicate, planning, ideas, make, product, intended user, purpose, model, function, evaluate, label, sketch, designer, inventor	**Substantive** Research, criteria, design, communicate, planning, ideas, make, product, intended user, purpose, model, function, evaluate, label, sketch, chef				**Substantive** Research, criteria, design, communicate, planning, ideas, make, product, intended user, purpose, model, function, evaluate, label, sketch, designer, inventor

		Disciplinary Disassemble, plastic tubing, syringe, T-connectors, balloon, card, glue, tape, pipe cleaners, elastic bands, split pins, paper fastener, scissors, snips, card drills, cutting mat, hole punch, fabric, paint, eyes. pneumatic, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight.	**Disciplinary** Cutting, peeling, grating, slicing, chopping, mashing, mixing, spreading, whisking and crushing, name of foods, names of equipment, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet				**Disciplinary** Textiles, stiff, reinforce, join, cut, measure, mark out, shape, needles, pins, stitches e.g running, blanket
Year 4	Area of learning		**Local Area** **<u>Electrical systems</u>** Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]		**Brazil** **<u>Structures</u>** Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	**Romans** **<u>Food and Nutrition</u>** Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Understand and apply the principles of a healthy and varied diet Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	
	Prior knowledge				Year 1 • Draw on their own experience to help generate ideas • Model their ideas in card and paper • Develop their design ideas applying findings from research • Make their design using appropriate techniques • With help measure, mark out, cut and shape a range of materials • Use tools *eg scissors, tape, pens, rulers and a hole punch* safely • Assemble, join and combine materials and components	• Identify a purpose and establish criteria for a successful product. • Make drawings with labels when designing • Select tools and techniques for making their product • Measure and assemble components with more accuracy • Work safely and accurately with a range of simple tools • Think about their ideas as they make progress and be willing change things if this helps them improve their work • Demonstrate hygienic food preparation and storage	

					together using a variety of temporary methods e.g. glues or masking tape • Use simple finishing techniques to improve the appearance of their product • Evaluate their product by discussing how well it works in relation to the purpose	• Use finishing techniques to improve the appearance of their product using a range of equipment. • Evaluate their product against original design criteria *e.g. how well it meets its intended purpose* • Disassemble and evaluate familiar products	
	New knowledge		In order to design and make **a light-up card**: • **Generate ideas, considering the purposes for which they are designing** • **Make labelled drawings from different views showing specific features** • **Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail** • **Evaluate products and identify criteria that can be used for their own designs** • **Select appropriate tools and techniques for making their product** • **Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques** • **Join and combine materials and components accurately in temporary and permanent ways** • **Use simple graphical communication techniques** • **Evaluate their work both during and at the end of the assignment**		In order to design and make **a Brazilian inspired musical instrument**: • **Generate ideas, considering the purposes for which they are designing** • **Make labelled drawings from different views showing specific features** • **Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail** • **Evaluate products and identify criteria that can be used for their own designs** • **Select appropriate tools and techniques for making their product** • **Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques** • **Join and combine materials and components accurately in temporary and permanent ways** • **Use simple graphical communication techniques** • **Evaluate their work both during and at the end of the assignment**	In order to design and make **a dish for a Roman feast**: • **Generate ideas, considering the purposes for which they are designing** • **Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail** • **Evaluate products and identify criteria that can be used for their own designs** • **Select appropriate tools and techniques for making their product** • **Measure and shape a range of materials, using appropriate tools, equipment and techniques** • **Join and combine materials and components accurately in temporary and permanent ways** • **Evaluate their work both during and at the end of the assignment** • **Evaluate their products carrying out appropriate tests**	

			• **Evaluate their products carrying out appropriate tests**		• **Evaluate their products carrying out appropriate tests**		
	Key vocabulary		**Substantive** Research, design criteria, communicate, planning, ideas, make, product, intended user, purpose, prototype, alternative, function, evaluate, test, annotated sketch, designer, inventor **Disciplinary:** Cell, bulb, wire, LED, tools, join, combine, components, temporary, permanent, graphics, Illuminated, front-lit, back-lit, neon, bulb lettering, light box, resistor, circuit, graphics, viewpoints, reinforce		**Substantive** Research, design criteria, communicate, planning, ideas, make, product, intended user, purpose, prototype, alternative, function, evaluate, test, annotated sketch, designer, inventor **Disciplinary:** Materials, measure, mark out, cutting, shaping, cut-outs, stiff, strong, reinforce	**Substantive** Research, design criteria, communicate, planning, ideas, make, product, intended user, purpose, evaluate, annotated sketch, chef **Disciplinary:** Cutting, peeling, grating, slicing, chopping, mashing, mixing, spreading, whisking and crushing, name of foods, names of equipment, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	
Year 5	Area of learning			**Artic / Antarctica** **<u>Structures</u>** Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	**Scandinavia** **<u>Textile Structures</u>** Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	**Anglo Saxons** **<u>Food and Nutrition</u>** Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Understand and apply the principles of a healthy and varied diet Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	
	Prior knowledge			• Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing specific features • Develop a clear idea of what has to be done, planning how	Year 3 • Plan the order of their work before starting • Explore, develop and communicate design proposals by modelling ideas • Make drawings with labels when designing	• Generate ideas, considering the purposes for which they are designing • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative	

				to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail • Evaluate products and identify criteria that can be used for their own designs • Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and permanent ways • Use simple graphical communication techniques • Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests	• Select tools and techniques for making their product • Measure, mark out, cut, score and assemble components with more accuracy • Work safely and accurately with a range of simple tools • Think about their ideas as they make progress and be willing change things if this helps them improve their work • Measure, tape or pin, cut and join fabric with some accuracy • Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including • Evaluate their product against original design criteria *e.g. how well it meets its intended purpose* • Disassemble and evaluate familiar products •	methods of making, if the first attempts fail • Evaluate products and identify criteria that can be used for their own designs • Select appropriate tools and techniques for making their product • Measure and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and permanent ways • Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests •	
	New knowledge			In order to design and make **a bridge**: • **Generate ideas through brainstorming and identify a purpose for their product** • **Draw up a specification for their design** • **Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail**	In order to design and make **a phone case**: • **Generate ideas through brainstorming and identify a purpose for their product** • **Draw up a specification for their design** • **Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail**	In order to design and make **bread and soup** • **Generate ideas through brainstorming and identify a purpose for their product** • **Draw up a specification for their design** • **Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail**	

				• **Use results of investigations, information sources, including ICT when developing design ideas** • **Select appropriate materials, tools and techniques** • **Measure and mark out accurately** • **Use skills in using different tools and equipment safely and accurately** • **Cut and join with accuracy to ensure a good-quality finish to the product** • **Evaluate a product against the original design specification** • **Evaluate it personally and seek evaluation from others**	• **Use results of investigations, information sources, including ICT when developing design ideas** • **Select appropriate materials, tools and techniques** • **Measure and mark out accurately** • **Use skills in using different tools and equipment safely and accurately** • **Cut and join with accuracy to ensure a good-quality finish to the product** • **Evaluate a product against the original design specification** • **Evaluate it personally and seek evaluation from others**	• **Use results of investigations, information sources, including ICT when developing design ideas** • **Select appropriate materials, tools and techniques** • **Use skills in using different tools and equipment safely and accurately** • **Weigh and measure accurately (time, dry ingredients, liquids)** • **Apply the rules for basic food hygiene and other safe practices *e.g. hazards relating to the use of ovens*** • **Evaluate a product ag**against **the original design specification** • **Evaluate it personally and seek evaluation from others**	
	Key vocabulary			**Substantive** Research, questionnaire, design criteria, communicate, planning, ideas, make, product, intended user, purpose, prototype, alternative, function, evaluate, test, annotated sketch, cross-sectional, designer, inventor **Disciplinary:** Paper, card, scissors, glue, sticky tape, art straws, construction kits, modelling material, lollipop sticks, cutting, shaping, joining, finishing, accuracy, assemble, combine, measure, mark-out, drilling, gluing, movement, forces, 3D framework	**Substantive** Research, design criteria, communicate, planning, ideas, make, product, intended user, purpose, prototype, alternative, function, evaluate, test, annotated sketch, designer, inventor **Disciplinary:** Pattern piece, Seam, Canvas Canvas paint, Fabric, Fabric paint, Textiles, Pinking shears Needle, Pins, Decorations, cutting, shaping, joining, finishing, accuracy, assemble, combine, measure, mark-out, stitch, running stitch, back stitch, blanket stitch.	**Substantive** Research, design criteria, communicate, planning, ideas, make, product, intended user, purpose, alternative, function, evaluate, test, annotated sketch, chef **Disciplinary:** Cutting, peeling, grating, slicing, chopping, mashing, mixing, spreading, whisking, kneading, baking, proving, name of foods, names of equipment, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet, vegetarian, vegan.	

Year 6	Area of learning	**Electricity / Natural Resources** **<u>Electrical systems</u>** Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]		**Water-world** **<u>Structures</u>** Apply their understanding of how to strengthen, stiffen and reinforce more complex structures		**<u>Food and Nutrition</u>** Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Understand and apply the principles of a healthy and varied diet Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
	Prior knowledge	Year 4 • Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing specific features • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail • Evaluate products and identify criteria that can be used for their own designs • Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and permanent ways • Use simple graphical communication techniques • Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests		• Generate ideas through brainstorming and identify a purpose for their product • Draw up a specification for their design • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail • Use results of investigations, information sources, including ICT when developing design ideas • Select appropriate materials, tools and techniques • Measure and mark out accurately • Use skills in using different tools and equipment safely and accurately • Cut and join with accuracy to ensure a good-quality finish to the product • Evaluate a product against the original design specification • Evaluate it personally and seek evaluation from others		• Generate ideas through brainstorming and identify a purpose for their product • Draw up a specification for their design • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail • Use results of investigations, information sources, including ICT when developing design ideas • Select appropriate materials, tools and techniques • Use skills in using different tools and equipment safely and accurately • Weigh and measure accurately (time, dry ingredients, liquids) • Apply the rules for basic food hygiene and other safe practices *e.g. hazards relating to the use of ovens* • Evaluate a product against the original design specification • Evaluate it personally and seek evaluation from others
	New knowledge	In order to design and make **<u>a moving fairground ride</u>**:		In order to design and make **<u>a shelter</u>**:		In order to design and make **<u>dishes as part of a balanced diet</u>**: • **Communicate their ideas through detailed labelled drawings**

		• **Communicate their ideas through detailed labelled drawings** • **Develop a design specification** • **Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways** • **Plan the order of their work, choosing appropriate materials, tools and techniques** • **Select appropriate tools, materials, components and techniques *e.g saw, glue gun*** • **Assemble components make working models** • **Use tools safely and accurately** • **Construct products using permanent joining techniques** • **Make modifications as they go along** • **Achieve a quality product** • **Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests** • **Record their evaluations using drawings with labels** • **Evaluate against their original criteria and suggest ways that their product could be improved**		• **Communicate their ideas through detailed labelled drawings** • **Develop a design specification** • **Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways** • **Plan the order of their work, choosing appropriate materials, tools and techniques** • **Select appropriate tools, materials, components and techniques** • **Assemble components make working models** • **Use tools safely and accurately** • **Construct products using permanent joining techniques** • **Make modifications as they go along** • **Achieve a quality product** • **Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests** • **Record their evaluations using drawings with labels** • **Evaluate against their original criteria and suggest ways that their product could be improved**		• **Develop a design specification** • **Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways** • **Plan the order of their work, choosing appropriate materials, tools and techniques** • **Select appropriate tools, materials, components and techniques** • **Assemble components make working models** • **Use tools safely and accurately** • **Construct products using permanent joining techniques** • **Make modifications as they go along** • **Achieve a quality product** • **Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests** • **Record their evaluations using drawings with labels** • **Evaluate against their original criteria and suggest ways that their product could be improved**
	Key vocabulary	**Substantive** Research, questionnaire, design criteria, communicate, planning, ideas, make, product, intended user, purpose, prototype, alternative, function, evaluate, areas for development, test, annotated		**Substantive** Research, questionnaire, design criteria, communicate, planning, ideas, make, product, intended user, purpose, prototype, alternative, function, evaluate, areas for development, test,		**Substantive** Research, questionnaire, design criteria, communicate, planning, ideas, make, product, intended user, purpose, prototype, alternative, function, evaluate, areas for development, test, annotated sketch, cross-sectional, chef **Disciplinary:** Cutting, peeling, grating, slicing, chopping, mashing, mixing,

		sketch, cross-sectional, designer, inventor **Disciplinary:** Saw, glue gun, join, rotate, spindle, axis, motor, dowelling, mechanism, axle, rotation Movement, circuit, motor system electrical , control framework, structure, join secure, spokes, components belt, pulley, program, computer, control, debug, sequence, algorithms		annotated sketch, cross-sectional, designer, inventor **Disciplinary:** Stability, strengthen, waterproof, Structure, Combine, Join, Secure, Reinforce, Stiffen, Framework Support, Triangulation Temporary, Permanent Material, Sturdy		spreading, whisking, kneading, baking, boiling, griddling, grilling, frying name of foods, names of equipment, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet, vegetarian, vegan, balanced diet

,