Subject Progression Grid for Design and Technology

Year Group	Topics/ Themes	Knowledge and Skills EYFS Development Matters 2020 Statements and ELGs	Key Vocabulary
Reception	Rhythm and Rhyme Celebrations Healthy Me Seasons Growing Superheroes	**Expressive Arts and Design** Birth to Three • Start to make marks intentionally. • Express ideas and feeling through making marks, and sometimes give a meaning to the marks they make. • Use their imagination as they consider what they can do with different materials. • Make simple models which express their ideas. Three and Four-Year-Olds • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. • Explore different materials freely, in order 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. • Join different materials and explore different textures. Children in Reception • Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Create collaboratively sharing ideas, resources and skills. Early Learning Goals • 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. • Make use of props and materials when role playing characters in narratives and stories. **Physical Development – Fine Motor Skills** Early Learning Goals • Use a range of small tools, including scissors, paintbrushes and cutlery. • Begin to show accuracy and care when drawing.	fruit and vegetable names, names of equipment and utensils e.g. glue stick, sensory vocabulary – crunchy, smooth, soft, hard, sticky, sharp, juicy, sweet.

KS1 National Curriculum objectives:

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 (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
- Explore and use mechanisms (levers, sliders, wheels and axles), in their products.
- Build structures, exploring how they can be made stronger, stiffer or more stable

Cooking and Nutrition
- Use the basic principles of a healthy and varied diet to prepare dishes.
- Understand where food comes from.

Year Group	Unit of Study	Topic	Key Knowledge	Key Skills	Key Vocabulary
1	**Design**				
	Developing, Planning and Communicating Ideas	Across all Topics	• Look at examples of existing designers work. • Identify a target group for what they intend to design and make.	• Draw on their own experience to help generate ideas. • Research/look at existing designs. • Suggest ideas and explain what they are going to do. • Model their ideas in card and paper. • Develop their design ideas applying findings from their earlier research. • Communicate ideas through talk and drawings.	design, ideas, purpose, design criteria, product, user
	Make				
	Mechanisms Sliders & Levers	**How Have Toys Changed? / Was The Fire of London really 'Great'?** Possible activities: Moving Toy/Fire Picture	• Understand that different mechanisms produce different types of movement. • Understand the steps to make a moving picture or toy. • Understand that products are designed for users based on criteria, and what simple criteria for a moving toy could be: the mechanism should work smoothly, it should make the right type of movement.	• Make their design using appropriate techniques. (Linked to art skills) • With help, measure, mark out, cut and shape a range of materials. • Use tools e.g. scissors and a hole punch safely • Plan and suggest step in the creation phase. • Select tools to cut, shape and join paper and card. • Use simple finishing techniques to improve the appearance of their product.	slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, design, make, evaluate,
	Freestanding Structures	**Would You Rather Live in Barrow or China? / Can You Find Barrow in an Atlas?**	• To know how to join components together effectively. • Know that a range of tools can be used for different purposes: cutting, sticking, curling, bending, joining etc. • To understand how structures can be made stronger and stiffer.	• Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. • Use tools for different purposes: cutting, sticking, curling, bending, joining etc.	cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube,

		Possible activities: Animal enclosure, African hut		• Select and use tools, explaining their choices, to cut, shape, and join paper and card. • Build structures by selecting appropriate materials and investigating ways to strengthen them.	cylinder, design, make, evaluate, user, purpose, ideas, design criteria, product, function
	Cooking and Nutrition Fruit and Vegetables	**Does Everything Grow? / How Does a Caterpillar Change into A Butterfly?** Possible activities: fruit smoothies for 'The Very Hungry Caterpillar'	• To understand the difference between fruits and vegetables. • To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber). • To know that a blender is a machine which mixes ingredients together into a smooth liquid. • To know that a fruit has seeds and a vegetable does not. • To know that fruits grow on trees or vines. • To know that vegetables can grow either above or below ground. • To know that vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).	• Design a smoothie carton packaging by-hand or on ICT software. • Chop fruit and vegetables safely to make a smoothie. • Identify if a food is a fruit or a vegetable. • Learn where and how fruits and vegetables grow. • Taste and evaluate different food combinations. • Describe appearance, smell and taste. • Suggest information to be included on packaging.	fruit and vegetable names, names of equipment and utensils, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients
	Evaluate				
	Evaluating Processes and Products	Across all Topics	• Evaluate their product by discussing how well it works in relation to the purpose. • Evaluate their products as they are developed, identifying strengths and possible changes they might make. • Evaluate their product by asking questions about what they have made and how they have gone about it.		evaluate, improve,

Year Group	Unit of Study	Topic	Key Knowledge	Key Skills	Key Vocabulary
2	**Design**				
	Developing, Planning and Communicating Ideas	Across all Topics	• Identify a purpose for what they intend to design and make. • Identify simple design criteria and understand how it can be used to create a product.	• Generate ideas by drawing on their own and other people's experiences. • Develop their design ideas through discussion, observation, drawing and modelling.	design, ideas, purpose, design criteria, product, user

			• Make simple drawings and label parts.	
Make				
Mechanisms Wheels and Axles	**How Have Toys Changed? / Was The Fire of London really 'Great'?** Possible activities: Toy/ vehicle with moving wheels	• A mechanism is a device used to create movement in a product and wheels and axles are examples of this. • To know the difference and distinguish between fixed and freely moving axles, using technical vocabulary relevant to the project. • To know the purpose of their product (that the finished model can be moved on wheels with ease) • To know what components are needed to construct a moving vehicle and use this to select materials according to which are most suitable.	• Begin to select tools and materials; use vocab' to name and describe them. • Use a range of tools and equipment to perform practical tasks, such as cutting and joining to allow movement and finishing. • Select from and using a range of materials and components, such as paper, card, plastic and wood, according to their characteristics. • Use wheels and axles as mechanisms in their product. • 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.	vehicle, wheel, axle, axle holder, chassis, body, cab, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, names of tools, equipment and materials used, design, make, evaluate, purpose, user, criteria, functional
Textiles – Templates and Joining Techniques	**Would You Rather Live in Barrow or China? / Can You Find Barrow in an Atlas?** Possible activities: Animal finger puppet/ book bag keyring	• To know which equipment is needed to sew material together. • To know and use key vocabulary, as relevant to the project: seam, thread, stitch.	• Design and create a puppet, sewing the material together effectively at the seams. • Thread and use a needle safely. • Cut, shape and join fabric to make a product. • Use basic sewing techniques.	names of existing products, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish, features, suitable, quality, mock-up, design brief, design criteria, make, evaluate, user, purpose, function
Food And Nutrition A Balanced Diet	**Does Everything Grow? / How Does a Caterpillar Change into A Butterfly?** Possible activities: Healthy soup	• To know that 'diet' means the food and drink that a person or animal usually eats. • To understand what makes a balanced diet. • To know where to find the nutritional information on packaging. • To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar. • To understand that I should eat a range of different foods from each food group, and roughly how much of each food group.	• Design a healthy wrap based on a food combination which works well together. • Slice food safely using the bridge or claw grip. • Construct a wrap that meets a design brief. • Describe the taste, texture and smell of fruit and vegetables. • Taste testing food combinations and final products. • Describe the information that should be included on a label. • Evaluate which grip was most effective.	fruit and vegetable names, names of equipment and utensils, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients

			• To know that nutrients are substances in food that all living things need to make energy, grow and develop. • To know that 'ingredients' means the items in a mixture or recipe. • To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy. • To know that many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars'.		
	Evaluate				
	Evaluating Processes and Products	Across all Topics	• Evaluate own and each other's product against their design criteria. • Evaluate their products as they are developed, identifying strengths and possible changes they might make. • Talk about their ideas, saying what they like and dislike about them.		evaluate, improve,

KS2 National Curriculum objectives:

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, joining, shaping 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
- Understand and use electrical systems in their products
- 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.

Year Group	Unit of Study	Topic	Key Knowledge	Key Skills	Key Vocabulary
3	**Design**				
	Developing, Planning and Communicating Ideas	Across all Topics	• Identify a purpose and establish criteria for a successful product.	• Generate ideas for an item, considering its purpose and the user/s. • Plan the order of their work before starting. • Explore, develop and communicate design proposals by modelling ideas. • Make drawings with labels when designing.	design, ideas, purpose, design criteria, product, user
	Make				
	Mechanisms Leavers and Linkages	**Who First Lived in Britain? (Stone Age)** Possible activities: Create a tool or weapon Stone Age Scene	• Levers and linkage are mechanism devices that are used to create movement in a product. • Humans have used levers since the stone age. • There are four types of lever: linear, reciprocating, rotary and oscillating. • To know and distinguish between fixed and loose pivots. • A lever is a rigid bar which moves around a pivot; they are used in many everyday products. • Linkage – the card strips joining one or more levers to produce the type of movement required are used as "linkage"; this term is also used to describe the linker and mechanism as a whole. The slot is the hole through which a lever is placed to enable part of a picture to move. • The guide or bridge is a short card strip used to keep lever and linkage mechanisms in place and control movement. • A paper fastener that joins card strips together is a 'loose pivot'. • A paper fastener that joins card strips to the backing card is a 'fixed pivot'. A system is a set of related parts or components used to create an outcome. • Systems have an input, process and an output. • In a lever and linkage mechanism, the 'input movement' is where the user pushes or pulls a card strip. The 'output movement' is where one or more parts of the picture move.	• Use annotated sketches and prototypes to develop, model and communicate ideas. • Order the main stages of making. • Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. • Select from and use finishing techniques suitable for the product they are creating. • Use skills and techniques to measure, mark out, cut, join and finish. • Use finishing techniques to improve the appearance of their product using a range of equipment including ICT.	mechanism, lever, linkage, pivot, slot, bridge, guide, system, input, process, output, linear, rotary, oscillating, reciprocating, user, purpose, function, prototype, design criteria, innovative, appealing, design brief

	Food And Nutrition Eating Healthily	**Where Would You Choose to Go in Europe?** **Why Were the Ancient Greeks Groovy?**	• To know that not all fruits and vegetables can be grown in the UK. • To know that climate affects food growth. • To know that vegetables and fruit grow in certain seasons. • To know that cooking instructions are known as a 'recipe'. • To know that imported food is food which has been brought into the country. • To know that exported food is food which has been sent to another country. • To understand that imported foods travel from far away and this can negatively impact the environment. • To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre. • To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health. • To know safety rules for using, storing and cleaning a knife safely. • To know that similar coloured fruits and vegetables often have similar nutritional benefits.	• Create a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish. • Know how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination. • Follow the instructions within a recipe. • Establish and using design criteria to help test and review dishes. • Describe the benefits of seasonal fruits and vegetables and the impact on the environment. • Suggest points for improvement when making a seasonal tart.	name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, healthy/varied diet, planning, design criteria, purpose, user, annotated sketch, sensory evaluations
	Textiles Sewing Techniques	**What Makes the Earth Angry?** Possible activities: Cushion	• To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces. • To know that when two edges of fabric have been joined together it is called a seam. • To know that it is important to leave space on the fabric for the seam. • To understand that some products are turned inside out after sewing so the stitching is hidden.	• Design and make a template from an existing cushion and applying individual design criteria. • Follow design criteria to create a cushion or Egyptian collar. • Select and cut fabrics with ease using fabric scissors. • Thread needles with greater independence. • Tie knots with greater independence. • Sew cross stitch to join fabric. • Decorate fabric using appliqué. • Complete design ideas with stuffing and sewing the edges (Cushions) or embellishing the collars based on design ideas (Egyptian collars). • Evaluate an end product and think of other ways in which to create similar items.	fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovate, investigate, label, drawing, aesthetics, function, pattern pieces
	Evaluate				

	Evaluating Processes and Products	Across all Topics	• Dissemble and evaluate familiar/existing products. • Evaluate their product against original design criteria e.g. how well it meets its intended purpose.		evaluate, improve,

Year Group	Unit of Study	Topic	Key Knowledge	Key Skills	Key Vocabulary
4	**Design**				
	Developing, Planning and Communicating Ideas	Across all Topics	• To know clear purpose of product. • Know how to use materials, equipment and processes.	• 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 to help with ideas for their own designs.	design, ideas, purpose, design criteria, product, user, innovate, prototype
	Make				
	Structures Shell (CAD)	**What did the Romans ever do for me?** Possible activities: Special box to protect Roman coins Container linked to DT Food	• To know how to make a shell structure using computer aided design (on word doc) • To use understanding of how the shape of a structure can influence its strength and how their own structure can be strengthened by internal support and exterior reinforcement. • Know how to use and manipulate materials in order to create a structure.	• Use research to inform the design criteria. • Investigate the construction of existing structures. • Use existing designs to inform own and communicate ideas through discussion, annotated sketches, cross-sectional diagrams and computer aided design (word doc with shape manipulation). • Compare designs and understand the necessary features of a suitable structure. • Select appropriate tools and techniques for making their product. • Measure, mark out, cut and shape a range of materials. •	shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision.
	Food And Nutrition Adapting a Recipe	**What is great about Great Britain?** **Why is the River Nile so important?**	• To know that the amount of an ingredient in a recipe is known as the 'quantity.' • To know that it is important to use oven gloves when removing hot food from an oven. • To know the following cooking techniques: sieving, creaming, rubbing method, cooling.	• Design a biscuit within a given budget, drawing upon previous taste testing judgements. • Follow a baking recipe, from start to finish, including the preparation of ingredients. • Cook safely, following basic hygiene rules.	food groups – fruit and vegetables, carbohydrates, protein, dairy, oils, spreads, healthy, unhealthy, diet, hydrated, dehydrated, recipe.

		Possible activities:	• To understand the importance of budgeting while planning ingredients for biscuits.	• Adapt a recipe to improve it or change it to meet new criteria (e.g. from savoury to sweet). • Evaluate a recipe, considering: taste, smell, texture and appearance. • Describe the impact of the budget on the selection of ingredients. • Evaluate and comparing a range of food products. • Suggest modifications to a recipe (e.g. This biscuit has too many raisins, and it is falling apart, so next time I will use less raisins).	
	Electrical Systems Simple circuits and switches	**Were the Ancient Egyptians awesome or awful?** Possible activities: Linked to Science	• Know how to work safely, using tools, equipment, materials, components and techniques appropriate to the task. • Understand appropriate vocabulary. • Know how to operate simple circuits and switches.	• Make manually controlled, simple series circuits with batteries and different types of switches, bulbs and buzzers. • Discuss which of the components in the circuit are input devices e.g. switches. • Demonstrate how to find a fault in a simple circuit and correct it. • Use a simple computer control program with an interference box or standalone control box to physically control output devices. • Make a variety of switches using simple classroom materials. E.g. card. • Make switches that operate in different ways e.g. when you press them.	Series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device, user, purpose, function, prototype, design criteria, innovative, appealing, design brief
	Evaluate				
	Evaluating Processes and Products	Across all Topics	• Evaluate their work both during and at the end of the topic. • Evaluate their products carrying out appropriate tests.		evaluate, improve, tests, products.

Year Group	Unit of Study	Topic	Key Knowledge	Key Skills	Key Vocabulary
5	**Design**				
	Developing, Planning and Communicating Ideas	Across all Topics	• Identify a clear purpose for their product. • Understand the meaning of quality control and assurance. • Can produce a descriptive plan of making for each stage, including a list of tools, equipment and materials needed for the product.	• Generate ideas through brainstorming. • 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.	design, ideas, purpose, design criteria, product, user, design specification, design brief annotate, functionality, innovation, mock-up, prototype, research

			• Use results of investigations, information sources, including ITC when developing design ideas.	
Make				
Mechanical Systems Pulleys	**What's so special about the USA?** Possible activities: Pulley linked to Science Possible activities: Bagels	• A pulley is a simple machine and comprises of a wheel on a fixed axle, with a groove along the edges to guide a rope or cable. • Pulleys are used to reduce the time and energy taken to lift heavy objects. • To know ow to cut various materials accurately and safely.	• Investigate, analyse and evaluate existing everyday products and existing or pre-made toys that incorporate gear or pulley systems. • Use observational drawings and questions to develop understanding of each product in the collection e.g. How innovative is the product? • Using a construction kit, investigate combinations of two different sized pulleys to learn about direction and speed of rotation e.g. How many times does the smaller pulley turn each time the larger pulley turns once? Do the pulleys move in the same direction? How can you reverse the direction of rotation? • Develop measuring, marking, cutting, shaping and joining skills using junior hacksaws, G-clamps, bench hooks, square section wood, card triangles and hand drills to construct wooden frames, as appropriate. • Demonstrate the accurate use of tools and equipment.	pulley. Drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output, design decisions, functionality, innovation, authentic,
Food And Nutrition What Could Be Healthier?		• To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed, including key welfare issues. • To know that I can adapt a recipe to make it healthier by substituting ingredients. • To know that I can use a nutritional calculator to see how healthy a food option is. • To understand that 'cross-contamination' means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.	• Adapt a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. • Write an amended method for a recipe to incorporate the relevant changes to ingredients. • Design appealing packaging to reflect a recipe. • Cut and prepare vegetables safely. • Use equipment safely, including knives, hot pans and hobs. • Know how to avoid cross-contamination. • Follow a step by step method carefully to make a recipe. • Identify the nutritional differences between different products and recipes.	ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, whisk, mix, beat, roll out, shape, sprinkle, crumble

				• Identify and describing healthy benefits of food groups. •	
	Textiles Combining Different Fabric Shapes	**Were the Anglo Saxons really smashing?** Possible activities: Money Purse	• To know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and velcro. • To know that different fastening types are useful for different purposes. • To know that creating a mock up (prototype) of their design is useful for checking ideas and proportions.	• Write a design criteria for a product, articulating decisions made. • Design a personalised book sleeve. • Make and test a paper template with accuracy and in keeping with the design criteria. • Measure, mark and cut fabric using a paper template. • Select a stitch style to join fabric, working neatly by sewing small, straight stitches. • Incorporate a fastening to a design. • Test and evaluate an end product against the original design criteria. • Decide how many of the criteria should be met for the product to be considered successful. • Suggest modifications for improvement. • Articulate the advantages and disadvantages of different fastening types.	seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings,
	John Harrison	**Where are the world's biomes?** **Why was John Harrison's invention important?**	• Understand how key events and individuals in design and technology have helped shape the world. (John Harrison)		
	Evaluate				
	Evaluating Processes and Products	Across all Topics	• Evaluate a product against the original design specification. • Evaluate it personally and seek evaluation from others. • Identify strengths and areas for improvement.		evaluate, improve, design specification, opinion, strengths, areas to improve.

Year Group	Unit of Study	Topic	Key Knowledge	Key Skills	Key Vocabulary
6	**Design**				
	Developing, Planning and Communicating Ideas	Across all Topics	• Understand the need for both quality control and quality assurance measures in industry. • Complete a detailed plan of production.	• Develop a design brief and simple design specification with the children within a context that is authentic and meaningful.	design, ideas, purpose, design criteria, product, user, design brief, design specification, prototype, annotated sketch,

			• Discuss the purpose of the products that the children will be designing, making and evaluating and who the products will be for. • To generate a range of ideas encouraging innovative responses. • Using annotated sketches, discussion and information and communication technology to communicate their ideas.	purpose, innovation, research, functional
Make				
Structures Frame Structures	**Did the Vikings really walk this way?** **What part did this locality play in WWII?** Possible activities: Shelters	• Know that structures are things that are built for a purpose, for example to support something or hold something. • Frame Structures are rigid support structures that use beams, columns and slabs to hold large forces of gravity and weight. • Frame structures give shape, and are useful for support & weight bearing. - Unlike shell structures, frame structures have joints, which are formed according to the design requirements and materials being used. • Some examples of man-made objects that use frame structures are houses, skyscrapers, bridges, scaffolding, tables, and roller coasters! • The system of beams and columns in a frame structure can be further strengthened through the use of other features, e.g. foundations, bracing. • Triangulation can help to make structures stronger. This is important to consider when creating stable joints.	• Use a construction kit consisting of plastic strips and paper fasteners to build 2-D frameworks. • Compare the strength of square frameworks with triangular frameworks. • Reinforce square frameworks using diagonals to help develop an understanding of using triangulation to add strength to a structure. • Use paper tubes and masking tape or paper straws with pipe cleaners to build 3-D frameworks such as cubes, cuboids and pyramids. How could each of the frameworks be reinforced and strengthened? • Use appropriate tools and equipment. • Develop skills and techniques using junior hacksaws, G-clamps, bench hooks, square section wood, card triangles and hand drills to construct wooden frames, as appropriate. • Demonstrate skills and techniques for accurately joining framework materials together e.g. paper straws. • Use finishing and decorative techniques suitable for the product they are designing and making.	Frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary permanent.
Electrical Systems Using more Complex Circuits and Switches	**Why was the Islamic Civilization around AD900 known as the 'Golden Age'?** **What does industry look like in our area?**	• To know how to use electricity safely and be aware of the dangers. • Understand and use electrical systems in their products. • Apply their understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project.	• Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. • Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. • Create and modify a computer control program to enable an electrical product to	series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart function, innovative, design specification, design brief, user, purpose.

		Possible activities: Electrical Quiz		work automatically in response to changes in the environment.	
	Food And Nutrition Come Dine With Me	**What does industry look like in our area?** **I'm a year six student. Can you get me out of here?** Possible activities: Survival Meal	• To know that 'flavour' is how a food or drink tastes. • To know that many countries have 'national dishes' which are recipes associated with that country. • To know that 'processed food' means food that has been put through multiple changes in a factory. • To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides. • To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork).	• Write a recipe, explaining the key steps, method and ingredients. • Include facts and drawings from research undertaken. • Follow a recipe, including using the correct quantities of each ingredient. • Adapt a recipe based on research. • Work to a given timescale. • Work safely and hygienically with independence. • Evaluate a recipe, considering: taste, smell, texture and origin of the food group. • Taste testing and scoring final products. • Suggest and writing up points of improvements when scoring others' dishes, and when evaluating their own throughout the planning, preparation and cooking process. • Evaluate health and safety in production to minimise cross contamination.	ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble design specification, innovative, research, evaluate, design brief
	Evaluate				
	Evaluating Processes and Products	Across all Topics	• Evaluate the work as it progresses and the final product against the intended purpose and user reflecting on the design specification previously agreed. • Consider the views of others, including intended users, to improve their work. • Identify the strengths and areas of development in their ideas and products.		evaluate, improve, strengths, improve, reflect, intended purpose, specification.