Backworth Park Primary School Knowledge and Skills Progression Grid Design Technology

	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
EYFS	Talk about what they want to make. Make observations about the features of object. Use their senses to explore and describe objects. Think of some ideas of their own. Plan how best to approach a task. Represent their ideas through drawings, labels and captions. Make a list of resources they will need.	Make models of their own choosing. Explore making, with different equipment including new ways of joining (e.g. split pins, staples, tags, string. Explain what they are making. Select appropriate resources, materials and tool. Name and explain which tools they are using and why. Use tools safely. Use tools to manipulate materials (use scissors or a knife to cut).	Identify success and next steps. Change their strategy as needed, e.g- rearranging materials. Talk about features of their creations. Share their creations, explaining the process they have used. Can build towers, arches and other structures by balancing materials and judging other elements such as weight and shape.	Build structures/models and attach/join resources together using a range of materials such as tape, glue, string, split pins, etc. Can identify which joining materials are best to use after a trial and error approach. Can use small construction materials to build (lego), adding moving parts such as wheels. Use technical vocabulary such as join, attach, create, design. Be aware that ingredients are available from a range of sources (shops, markets, grown at home.	Select and use appropriate tools needed for a recipe. Use tools effectively and safely (stir, spread, knead, chop). Identify and use the appropriate ingredients for a recipe. Complete basic hygiene tasks (e.g. wash hands). Talk about foods they like and dislike with reasons. Discuss the food that they eat during special occasions or cultural celebrations (e.g. birthday, Chinese New Year, etc.). Be willing to try new foods. Understand the importance of healthy food choices such as fruits and vegetables.
Year 1	Generate ideas from their own experience. Begin to understand and meet a single design criteria. Talk about their ideas and say what will be done.	Follow basic safety rules with support. Join two materials together with different methods, e.g. glue, staples, pins.	Explore existing products explaining what they like and dislike. Recognise what they have done well and talk about what could be improved.	Talk about materials and mechanisms in familiar products. Begin to understand and use the term component. Explore and use levers and sliders	Discuss and develop an awareness of where food comes from. Have an awareness of hygiene and safety. Measure using teaspoons, tablespoons etc.

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	Make a list of materials and tools they will need. Draw pictures of what they want to do with labels and some text. Generate and develop a mock up product. Use sliders and levers in plans.	Use scissors or a knife to cut, sometimes with help or using a simple template. Make simple models not necessarily with a purpose. Use simple construction kits e.g lego.	With support evaluate their product in relation to the design criteria.		Begin to understand the benefits of fruit and vegetables. With close supervision, use the bridge hold to cut harder foods using a serrated vegetable knife (eg apple pieces).
Year 2	Generate ideas and plan what to do next using their experience of materials and components. Use plans with labels, lists and technical vocabulary to show how to put their ideas into Practice. Understand and meet a single design criteria. Use their knowledge of some working characteristics of materials when designing. Use wheels and axles in plans	Follow basic safety rules. Measure out and cut materials independently. Begin to select tools for cutting, shaping, joining and finishing. Select tools, materials and techniques from a selection, appropriate to the job.	Explore existing products explaining what they like and dislike and what is useful/not useful. Recognise what they have done well and talk about what could be improved. Evaluate their product in relation to the design criteria.	Identify materials and mechanisms in familiar products. Understand and use the term component. Explore how structures can be made stronger, stiffer and more stable. Explore and use wheels and axles.	Have an awareness of where food comes from. Know about hygiene and safety. Measure using simple scales or balances. Know the benefits of healthy food With close supervision, use the bridge hold to cut harder foods using a serrated vegetable knife (eg apple pieces). Understand and use the term ingredient.
Year 3	Generate ideas using their prior knowledge of materials and processes e.g. Science and Art. Create annotated sketches with technical vocabulary and a brief	With support identify potential risks and how to avoid them. Measure and cut out in precise detail.	Investigate a range of products to see how they work. Say how the product will be useful to the user.	Apply what they know about materials and joints to strengthen, stiffen and reinforce structures. Apply what they know about mechanisms to create movement	Know where ingredients have come from. Understand main rules of food hygiene.

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	description of their method. (Use ICT where possible). Begin to research and develop simple design criteria. Design products that are functional and purposeful. Research products using the internet.	Select appropriate tools for cutting, shaping, joining and finishing. Make separate elements of a model before combining into the finished article. Begin to select materials according to their function and appearance. Make finished products neat and tidy.	Seek out the views and judgements of others. Evaluate their product in relation to the design criteria and explain how it has been successful and how it could be improved.	when planning and designing (levers and linkages). Apply what they know about electrical systems in their products, e.g. electrical circuits.	Follow a recipe, weighing out ingredients appropriately. Begin to recognise how eating different food groups creates a varied diet. Select and use appropriate tools/skills when mixing, slicing, spreading etc. With close supervision, use the claw grip to cut soft foods using a serrated vegetable knife (eg tomato).
Year 4	Research existing products, materials and techniques to help generate their ideas. Research and develop simple design criteria. Create annotated sketches and cross section diagrams with technical vocabulary (Use ICT where possible. Write a brief description of their method, showing the order of working in plans	Identify potential risks and discuss how to avoid them. Measure and cut out using centimetres and weigh in grams. Suggest and select appropriate tools for cutting, shaping, joining and finishing. Combine a number of components together in different ways. Select materials according to their function and appearance. Make sure that completed products are carefully finished	Test and evaluate commercial products, describing how a commercial product works. Can alter and adapt original plans following discussion and evaluation. Evaluate their product in relation to the design criteria and explain how it has been successful and how it could be improved. Understand how key events and individuals helped shape the world in which we live (e.g. George Stephenson).	Apply what they know about mechanisms to create movement when planning and designing. Apply what they know about materials and joints to strengthen, stiffen and reinforce complex structures. Use scoring and folding for precision. Apply what they know about electrical systems in their products, e.g. different individual components. Apply their knowledge of conductors and insulators.	Understand where and how ingredients have been produced. Understand main rules of food hygiene. Begin to select their own ingredients when cooking or baking. Recognise how eating different food groups creates a varied diet. Select and use appropriate tools/skills when mixing, slicing, spreading etc. With close supervision, use the claw grip to cut soft foods using a serrated vegetable knife (eg tomato).

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Year 5	Collect and use information from a target group to generate ideas. Research and develop multiple design criteria. Create ongoing annotated plans and exploded diagrams, which are adapted as work progresses. (Use ICT where possible). Produce step by step plans, thinking ahead to the order of their work. Calculate the amount of materials needed, use this to estimate cost. Generate, develop, model and communicate their ideas through prototypes and pattern pieces.	Identify potential risks and explain how to avoid them. Measure accurately to centimetres and grams. Combine materials for strength and to improve how the product looks. Use permanent and temporary fastenings to join with a greater range of techniques e.g. Staples.	Test and evaluate commercial products, understanding how this information supports their own designs. Develop their designs through their own reflection and the evaluation of others. Carry out tests before making improvements. Identify where evaluation has led to improvement. Understand how key events and individuals helped shape the world in which we live (e.g. Tyne Bridge).	Apply what they know about mechanisms to create movement when planning and designing. Apply what they know about materials and joints to strengthen, stiffen and reinforce complex structures in a variety of ways. Understand how wheels, axels, turning mechanisms, hinges and levers all work together.	Understand where and how ingredients have been grown, reared and processed, discussing seasonality and fair trade. Evaluate food by taste, texture, flavour, health benefits etc. Adapt an existing recipe to design their own dish. Prepare a range of predominantly savoury dishes. Understand food hygiene and safe food storage. With close supervision, use the claw grip to cut soft foods using a serrated vegetable knife (eg tomato).
Year 6	Collect and use information from a target group to generate ideas, taking the user's views. Research and develop multiple design criteria to meet an identified need by selecting ingredients or materials. Create ongoing annotated plans and prototypes, which are adapted as work progresses. (Use ICT where possible).	Identify potential risks and explain how to avoid them. Measure accurately to centimetres and grams. Make informed choices of tools and materials based on function and aesthetics. Justify their choices of tools, materials and techniques.	Test and evaluate commercial products, understanding how this information supports their own designs. Use robust testing to improve models and finished products, documenting and evaluating the process. Refine the quality of the finished product, including making annotations on the design	Apply what they know about mechanisms to create movement when planning and designing (gears, pulleys and cams). Apply what they know about materials and joints to strengthen, stiffen and reinforce complex structures in a variety of ways. Add electricity to create motion, sound or light.	Understand where and how ingredients have been grown, reared and processed, discussing seasonality and fair trade. Evaluate food by taste, texture, flavour, health benefits etc. Adapt an existing recipe to design their own dish. Prepare a range of predominantly savoury dishes.

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	Use additional sketches to show other ways of doing things and use these to justify choices. Produce step by step plans, thinking ahead to the order of their work. Calculate the amount of materials needed, use this to estimate cost. Make more complex designs to include a combination of other mechanisms.			Use their knowledge of mechanical systems in products (gears, cams and pulleys). Use their knowledge of computing to program, monitor and control products.	Work in a safe and hygienic way. With close supervision, use the claw grip to cut soft foods using a serrated vegetable knife (eg tomato). Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Use proportions when cooking by doubling and halving recipes