Design and Technology (DT)

Knowledge + skills

Whole school YR-3

	Reception	Year 1	Year 2	Year 3
Mechanisms				
Substantive Knowledge		**Sliders and levers (Christmas Cards)** To know how to make a product that moves. To know examples of simple lever mechanisms i.e. scissors and a seesaw. To know simple joining techniques. To know that mechanisms are the parts that make a product work. To know that mechanisms are all around us and help us in everyday life. To know that a slider is a simple mechanism. To know examples of simple sliders i.e. in a moving book or a drawer on a slider. To know that for a slider to be effective it must move smoothly. To know that slider help to move things from side to side and up and down. To know how to evaluate how well something works. (How well does it work? Does it meet its purpose? Who will use it? What else could you do to improve?)	**Wheels and Axels** To know and use technical vocabulary relevant to the project. To know how to use wheels, axles and axle holders. To know and explain the between fixed and freely moving axles.	**Mechanical Systems**

		To know how to make a Christmas card with a simple pop up or slider mechanism.		
Disciplinary Knowledge		To describe simple mechanisms using appropriate vocabulary. To identify simple mechanisms in everyday life. To make a simple slider or lever mechanism. To evaluate a finished product. To cut using scissors safely. To fasten and join components to make a simple mechanism using glue or folding techniques. (V-Fold, mouth mechanism).	To generate initial ideas and simple design criteria through talking and using own experiences. To develop and communicate ideas through drawings and mock-ups. To select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. To select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. To explore and evaluate a range of products with wheels and axles. To evaluate their ideas throughout and their products against original criteria. To explore and use wheels, axles and axle holders. To distinguish between fixed and freely moving axles.	
Vocab		Slider, lever, pivot, slot, bridge/guide card, masking tape, paper fastener, join pull, push, up, down, straight, curve, forwards, backwards design, make, evaluate, user,	Mechanism, Wheel, Axis, Axle Holder, Friction, Dowel, Chassis, Design, Make, Evaluate, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of	

		purpose, ideas, design criteria, product, function	tools, equipment and materials used design, make, evaluate, purpose, user, criteria, functional.	
Textiles				
Substantive Knowledge		**<u>Templates and joining (Animal masks)</u>** To understand how to join fabrics and other materials using different techniques e.g. gluing, stapling, taping. To know and use technical vocabulary relevant to the project. To know how to select the best joining or finishing techniques for a particular purpose.	**<u>Templates and joining</u>** To know sewing basics of threading a needle, knotting your thread and finishing off. To know how to sew using running stitch, attempting to produce neat, equal stitches. To know how to decorate fabric by adding beads/sequins and other finishing techniques. To know how to make and use a template.	**<u>Textiles</u>** To know how to strengthen, stiffen and reinforce existing fabrics. To understand how to securely join two pieces of fabric together. To understand the need for patterns and seam allowances. To know and use technical vocabulary relevant to the project. To understand how a key event/individual has influenced the development of the chosen product and/or fabric.
Disciplinary Knowledge		To design a product by drawing a simple plan, before making. To talk about their design and how things will look, techniques to use and materials, etc. To select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining, and finishing. To explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.	To design their product by drawing a plan and adding annotations. To talk about what they will make and how they will make it. To explore joining techniques such as stapling, sewing, gluing, pinning. To sew using a running stitch. To be able to thread a needle and knot thread at the end. To make and use a template for their final product. To develop and communicate their ideas, through talk, drawings and mock-ups.	To generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. To produce annotated sketches, prototypes, final product sketches and pattern pieces. To plan the main stages of making. To select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. To select fabrics and fastenings according to their functional

		To explore and evaluate a range of existing products relevant to the project being undertaken. To evaluate their ideas throughout and their final products against original design criteria.	To choose one idea to follow through. To talk about the stages in making before assembling products. To evaluate ongoing work and the final products To explore different finishing techniques e.g. sewing buttons, 3-D fabric paint, gluing sequins, printing.	characteristics e.g. strength, and aesthetic qualities e.g. pattern. To investigate a range of 3-D textile products relevant to the project. To test their product against the original design criteria and with the intended user. To take into account others' views.
Vocab		Names of existing products, joining and finishing techniques, tools, fabrics and components, join, decorate, finish features, suitable, design criteria, make, evaluate, purpose.	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.	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, innovative, investigate, label, drawing, aesthetics, function, pattern pieces.
Food and Nutrition				
Substantive Knowledge		**<u>Preparing Fruit and Vegetables (Making a cake or pizza)</u>** To know the names of simple cooking equipment (grater, knife, chopping board, peeler, sieve, measuring scales) To know how to cut food safely.	**<u>Preparing Fruit and Vegetables</u>** To know how to use 'the bridge' and 'the claw' cutting techniques safely. • The Bridge	**<u>Food</u>**

		To know that the flat surface of the food should be face down on the chopping board. To know that the food must be stable before cutting. To know that when using a peeler for long foods such as carrots they should hold one end and peel from the middle away from themselves. To know that when grating they do not have to grate every bit of the food. To know that it is best to leave a small chunk at the end to hang on to. To know how to use a grater safely by keeping fingers away from the grater edge. To know how to use scissors safely. (Kitchen scissors can sometimes be a useful alternative to a knife, especially if children are quite young. Scissors are often useful to cut up ingredients such as cooked bacon, herbs and spring onions). To know how to use the 'Fork Secure' cutting technique, safely. • The Fork Secure 	 • The Claw  To know the importance of eating healthily. (Links made with Science) To know that preparing processes are the different ways that we get food ready to be eaten. To know that mixing is to blend ingredients together, using a spoon, blender, or whisk. To know that weighing/measuring is to get the right amount of an ingredient, using scales, tablespoons, or teaspoons. To know where a range of fruit and vegetables come from e.g. farmed or grown at home. To understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell Guide. (Linked to Science)	

		To know how to evaluate an idea by saying what worked and what didn't work.	To know and use technical and sensory vocabulary relevant to the project.	
Disciplinary Knowledge (Skills)		To name simple cooking equipment. To follow simple safety rules when using sharp equipment. To talk about what they are going to make. To name the ingredients that they will be using. To follow a simple method/recipe. To talk about what they liked and disliked about their product. To talk about and perform simple food hygiene rules. To use appropriate vocabulary (see below) to describe actions and techniques.	To use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. To select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. To taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. To evaluate ideas and finished products against design criteria, including intended user and purpose.	
Vocab		The Fork Secure cutting technique, scissors, chopping board, knife, grater, sieve, measuring scales, peeler, apron, food hygiene, safely, secure, flat, wash, clean, soap, germs, cut, grate, peel, names of a variety of fruit and vegetables, chop, slice, mix, stir, beat, evaluate, design, plan.	The bridge, The claw, fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria.	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.

Materials and Structures				
Substantive Knowledge			**<u>Structures</u>** **<u>(Tudor Homes)</u>** To know to join a loo roll tube to a flat surface. (By cutting small slits in the top of the tube and folding back). To know how to make structures stronger, stiffer and more stable. To know and use technical vocabulary relevant to the project.	
Disciplinary Knowledge (Skills)			To investigate how to make a model stronger. To investigate how to make a model stiffer. To investigate how to make a model more stable. To generate ideas based on simple design criteria and their own experiences, explaining what they could make. To explore a range of existing structures in the school and local environment e.g. everyday products and buildings. To develop, model and communicate their ideas through talking, mock-ups and drawings. To plan by suggesting what to do next.	

			To select and use tools, skills and techniques, explaining their choices. To select new and reclaimed materials and construction kits to build their structures. To use simple finishing techniques suitable for the structure they are creating. To evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.	
Vocab			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, cylinder design, make, evaluate, user, purpose, ideas, design criteria, product, function	