Design

Progression in skills (KS1)	Year 1	Year 2	Progression in skills (KS2)	Year 3	Year 4	Year 5	Year 6
Design	Describe what they want to do using pictures and words Make lists of materials they will need Think of some ideas of their own Explain what they are making	Generate ideas through comparing existing products To design their product using pictures and words Say how the product will be useful to the user	Design	Plan their design, using diagrams and labels To have a design-criteria and establish a purpose/ audience for their product. Use what they know about the properties of materials to plan their ideas.	Create a detailed plan considering their target audience, design criteria and intended purpose Collect and use information to generate ideas Understand designs must meet a range of criteria. Include accurate measurements within the design.	Suggest some alternative designs and compare the benefits and drawbacks to inform the design process and outcome. Make up a prototype first. To be able to use computer-aided design to enhance their product. To include different view perspectives within one design e.g bird's eye view, third angle perspective.	Use a range of information to inform their design Use market research to inform plans Keep cost constraints in mind when selecting materials in design Use their knowledge of science and art when designing. When designing, showing the product from a range of angles including exploded diagrams.

Make

Progression in skills (KS1)	Year 1	Year 2	Progression in skills (KS2)	Year 3	Year 4	Year 5	Year 6
Make	Make a product which moves. To be able to make safe cuts and shape using scissors. To be make their own design.	To use non-standard units of measure in creation. To be able to make safe cuts into a range of shapes using scissors. Children to start to adapt and refine their projects from their design.	Make	Children to start to measure using centimetres in their creation. Children to use different and appropriate tools safely – sharper knives, Children to proactively adapt and refine their projects from their design. Children to pick and use appropriate resources and materials.	Children to make accurate measurements in their creation. Children to be able to pick choose and appropriate tools and use safely. To be able to adapt and refine their projects from their design when they face obstacles with teacher prompt.	To build projects using markings and measurements. Children to use a range of tools to get different effects in their creation. Children to adapt plans based on obstacles that arise in creation.	To a build successful project based on appearance, function and user. Children to continue to use a range of tools for different effects safely. Children to adjust projects accordingly when obstacles arise without prompt.

Evaluate

Progression in skills (KS1)	Year 1	Year 2	Progression in skills (KS2)	Year 3	Year 4	Year 5	Year 6
Evaluate	Children to be able to describe what they have made. Children to be able to say what they like about their product.	Children to describe what they have made and how they have made it. Children to say what they like about their product and what would they change next time. Children decide if their product is appropriate for their chosen user.	Evaluate	Children to explain why their product is or isn't appropriate for the intended user. Children to be able to discuss the skills they have used in their product creation. Children to evaluate their product based on their design criteria.	Children to evaluate the effectiveness of their product against the design criteria. Children to explain the drawbacks during the creation process and how they were able to overcome it. Children to explain in detail the product's suitability for its user.	Children to evaluate the quality and effectiveness of their design Children to evaluate how they could have prevented the drawbacks they faced during their creation. Children to suggest modifications and improvements for their product.	Children to self-assess and peer assess each other's work and produce a basic evaluation with guidance. Children to evaluate ways they overcame drawbacks and explain in detail what they would do differently in future products.

Technical Knowledge – Mechanisms

Progression in skills (KS1)	Year 1	Year 2	Progression in skills (KS2)	Year 3	Year 4	Year 5	Year 6
Technical knowledge	Make a product which moves using levers and sliders. Say why they have chosen moving parts. Know how some moving objects work.	Join materials together as part of a moving product. Explain how different parts move Make a moving model that uses wheels, and axles. Talk about how moving objects work.	Technical knowledge	Make a product which uses mechanical components. (Levers and linkages)		Make a product which uses pneumatics Create designs that include cams, gears or pulleys.	

Technical Knowledge – Electrical components

Progression in skills (KS1)	Year 1	Year 2	Progression in skills (KS2)	Year 3	Year 4	Year 5	Year 6
Technical knowledge			Technical knowledge		Make a simple circuit and add components to it Add electricity to create motion or make light. To know how to make a range of simple secure connections (twisting wires together, wrapping ends, taping over, connecting block)		Use a number of components in a circuit e.g. light, buzzer, motor Use different kinds of circuits in their product to improve it. E.g. series, parallel Incorporate a switch into their products Assess faults in their own electrical systems Test components in a simple series circuit Use computer programming to control a circuit. (Crumble, Microbits and TinkerCAD).

Technical Knowledge – Textiles

Progression in skills (KS1)	Year 1	Year 2	Progression in skills (KS2)	Year 3	Year 4	Year 5	Year 6
Technical knowledge		Understand how simple 3-D textile products are made, using a template to create two identical shapes. Join fabrics using different techniques with easy thread (large eye) needles e.g. running stitch, glue, stapling. Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.	Technical knowledge		Investigate a range of textile products that have a selection of stitches, joins, fabrics, finishing techniques, fastenings and purposes, linked to the product they will design, make and evaluate. Disassemble appropriate textiles products to gain an understanding of 3-D shape, patterns and seam allowances.		Be able to thread a needle (smaller eye than Y2) Develop skills of sewing textiles by joining right side together and making seams. Investigate how to sew and shape curved edges by snipping seams, tack or attach wadding or stiffening learn how to start and finish off a row of stitches To be able to use an

					Strengthen, stiffen and reinforce existing fabrics. Understand the need for patterns and seam allowances. Securely join two pieces of fabric together using a range of stitching techniques, running stitch (Y2), over-stitch and blanket stitch. Glue gun if necessary.		appropriate stitch learned for a given task. Pin a pattern on to fabric ensuring limited wastage, leave a seam allowance use different cutting techniques. Develop skills of computer-aided design (CAD) by using on-line pattern making software to generate pattern pieces.

Technical Knowledge – Structures

Progression in skills (KS1)	Year 1	Year 2	Progression in skills (KS2)	Year 3	Year 4	Year 5	Year 6
Technical knowledge	Make freestanding structures stronger, stiffer and more stable. Join some simple materials using glue, tape, blue tack, staples, paper clips Know a simple order of making a structure		Technical knowledge	Use more sophisticated methods for stiffening/ strengthening structures using triangulation. Use a 2D net to create a 3D structure. Use tools appropriate for cutting and scoring materials (rulers and scissors). Test a material's strength Use CAD to develop a product (TinkerCAD).		Stiffen, strengthen and reinforce a range of 3-D frameworks Know which materials are best suited to stiffen and reinforce by selecting them due to their properties Know which shapes are the strongest and will support the most weight in a structure Use a range of tools i.e. junior hacksaws, G-clamps, bench hooks, hand drills safely	

Cooking and Nutrition

Progression in skills (KS1)	Year 1	Year 2	Progression in skills (KS2)	Year 3	Year 4	Year 5	Year 6
Food and nutrition	Describe textures Wash hands & clean surfaces Describe differences between some food groups (i.e. Sweet, vegetable etc.) Discuss how fruit and vegetables are healthy Understand how to hold a knife safely. To cut through soft	Explain hygiene and keep a hygienic kitchen Describe properties of ingredients and importance of varied diet To cut through different ingredients. To be able to spread, grate a range of ingredients.	Food and nutrition	Use equipment safely Make product look attractive To reference how food and drink are needed for active/healthy bodies to build onto scientific knowledge. Grow in confidence using some of the following techniques: sieving, mixing, combining, kneading, rolling and	To be safe and hygienic within a kitchen setting. Think about presenting product in interesting/ attractive ways. Understand ingredients can be fresh, pre-cooked or processed Begin to understand about food being grown, reared or	To independently put safety and hygienic methods into practice. Present product well - interesting, attractive, fit for purpose. Begin to understand seasonality of foods. Understand food can be grown, reared or caught in the UK and the wider	Understand a recipe can be adapted by adding / substituting ingredients. Explain seasonality of foods Name some types of food that are grown, reared or caught in the UK or wider world Adapt recipes to change appearance, taste, texture or aroma. Prepare a dish

	ingredients.			baking Under supervision, to be able to use a relevant cooking method - i.e. Baking, frying, boiling...	caught in the UK or wider world To consider the different groups in the creation of dishes. Use some of the following techniques: peeling, crushing, chopping, slicing, grating, mixing, combining, shaping	world. Describe how recipes can be adapted to change appearance, taste, texture, aroma. Prepare and cook a seasonal dish safely and hygienically. Accurately weigh, measure and combine ingredients. Use range of techniques such as mixing, , kneading, rolling and baking.	that contributes a healthy varied diet. Prepare and cook a savoury dish safely and hygienically including using a hob as a heat source. Choose an appropriate technique in preparation of dishes from already learnt practice. Use a range of cooking techniques; fry/sauté, simmer/boil/bake