Year 5 Scheme of Work – Design Technology

Unit	Time (Wks)	Activities	Outcomes	Differentiation	Assessment	NC Links	Other Subject Link
Previous learning: Y3 - Use research to create ideas and refine them to develop design criteria; build and join strong frame structures and stiffen materials; apply their understanding of where and how kites need stiffening; evaluate product.				**Next learning:** KS3 - Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.			
5.4 Building Bridges	6-8	- Explore ways in which pillars and beams are used to span gaps. - Explore ways in which trusses can be used to strengthen bridges. - Explore ways in which arches are used to strengthen bridges. - Understand how suspension bridges are able to span long distances. - Develop criteria and design a prototype bridge for a purpose. - Analyse and evaluate products according to design criteria.	- Understand the impact better bridge design has had on daily life. - Investigate and explore the effectiveness of different beam/pillar designs. - Apply their knowledge of how to stiffen and strengthen structures. - Evaluate their models against established design criteria. - Build and test models to find a strong bridge design. - Build a model suspension bridge that will support a given weight. - Evaluate the designs of others and consider their views. - Write a design criteria according to a given brief. - Design a prototype model according to design criteria. - Work collaboratively to produce a prototype model according to an agreed design. - Devise tests to analyse a product according to design criteria. - Evaluate their product according to design criteria. - Consider the views of others and think of ways to improve their work.	- Modelling - Practical activities - Step-by-step guide	Continuous throughout. Final product	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. Evaluate their ideas and products against design criteria and consider the views of others to improve their work. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	Science – suspension, forces, loads

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Previous learning: Y2 – Use a template to shape a piece of fabric; develop design criteria; create a fabric face; stitch two pieces of fabric together using a running stitch; evaluate their product.				**Next learning:** KS3 – understand and use the properties of materials and the performance of structural elements to achieve functioning solutions; manufacturing and fashion.			
5.5 Fashion & Textiles	6-8	- Investigate and analyse items made using textiles: the materials used and how they are made. - Explore some ways in which textiles are joined and decorated. - Design an item made using textiles, and draw pattern pieces. - Use pattern pieces to measure, mark and cut fabric; sew design elements according to a design. - Join fabric pieces by hand sewing. - Sew hems on an item made using textiles; to add design details; decorate textile with fabric paint (use digital Islamic geometric pattern from Art unit). Evaluate my bag.	- Identify the materials used in the manufacture of some items made using textiles. - Identify ways in which materials are joined in some items made using textiles. - Understand the main stages in the production of cotton cloth. - Identify different sewing stitches on items made using textiles and their potential uses. - Understand that design criteria are used by fashion designers to develop designs. - Design an item made using textiles according to design criteria. - Draw pattern pieces, adding details such as seam allowances. - Use pattern pieces to mark fabric for cutting and sewing. - Cut fabric according to a pattern. - Join fabric pieces using a simple hand-sewing stitch. - Use simple stitches to sew hems on an item made using textiles. - Create a digital Islamic pattern to be used as a stencil. - Decorate textile using fabric paint. - Evaluate their own work.	- Modelling - Practical activities - Step-by-step guide	Continuous throughout. Final product	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. Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. 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.	Science – materials Art – pattern prints/stencils