Design and Technology Long Term Plan

	Y1	Y2	Y3	Y4	Y5	Y6
Autumn	**Where do I live?** *Mechanisms* *Sliders and levers* **Moving bus, canal boat, vehicle person on main street canal in Hyde** Generating, modelling and communicating ideas. Planning making, selecting tools and using finishing techniques. Exploring products; evaluating own product against original criteria. Exploring sliders and levers; understanding types of movement; technical vocabulary.	**What was Hyde like in the past?** *Structures* *Free standing structures* **Make local buildings and structures** Generating design ideas; developing modelling and explaining using talk, mock-ups and drawings. Planning making, selecting tools and new and recycled materials; using finishing techniques. Exploring existing freestanding structures; evaluating their own products against original criteria. Know about strengthening structures; knowledge of vocabulary.	**What makes a river?** *Electrical systems* *Simple circuits and switches* **Make a lighthouse** Use annotated sketches, cross-sectional and exploded diagrams to develop and communicate ideas. Select and use tools with some accuracy to cut, shape, join and finish. Use construction materials and electrical components according to their functional properties and aesthetic qualities. Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.	**How did life in Britain change when the Romans ruled?** *Textiles* *2-D shape to 3-D product* **Make an item of clothing or accessory** Generate design criteria for an appealing product for specific users. Produce annotated sketches, prototype, final product sketches and pattern pieces. Select fabrics and fastenings according to functional characteristics. Investigate a range of 3-D textile products. Test their product against the original criteria and with the intended user.	**Why are biomes important to the world?** **(Arctic / Antarctica / Polar regions)** *Electrical Systems* *More complex switches and circuits* **Design an electrical product for explorers** Develop a design specification for a functional product that responds automatically to changes in the environment. Formulate a step-by-step plan to making, listing tools, equipment, materials and components. Use a computer control program to enable an electrical product to work automatically in response to change in the environment. Test and evaluate the system to demonstrate its effectiveness for the intended user and purpose. Know and use technical vocabulary relevant to the project.	**What matters to the Vikings?** *Mechanisms* *Cams* **Viking Automats** Generate ideas through research and develop and communicate a simple design specification. Select use a range of tools and equipment to make products that are accurately assembled and well finished within the constraints of time, resources and cost. Compare the final product to the original design specification and test the quality of the design, manufacture and functionality with the user. Investigate famous manufacturing and engineering companies relevant to the project.
Spring	**How is a farm different to Hyde?** *Food technology* *Preparing fruit and vegetables* **Healthy food using vegetables grown on a farm. Food to plate.** Designing appealing products for a user, investigating fruit and vegetables and generating ideas; communicating through talk and drawings. Selecting a range of fruits and vegetables; using simple utensils and equipment. Tasting and evaluating user's preference; evaluating ideas and finished products against original criteria. Understand where ingredients come from	**Who is Rosa Parks and why is she remembered?** *Textiles* *Uses of everyday materials* **If Rosa Parks lived today, what would she wear?** **Design a part of her outfit.** Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups Select from and use a range of tools and equipment to perform practical tasks. Select from and use a wide range of materials and components, including materials and textiles, according to their characteristics	**What makes a mountain?** *Food technology* *Healthy and varied diet* **Healthy packed lunch to take on a hike (walk up Werneth Low to test weight)** Generate ideas and develop design criteria for an appealing product for a user and purpose. Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select from a range of ingredients to make appropriate food products. Carry out and record evaluations of a variety of ingredients and products. Know a range of appropriate ingredients, and whether they are grown, reared or caught.	*Food technology* *Healthy and varied diet* Spanish food **Make savoury Spanish dishes to eat together** Generate ideas and develop design criteria for an appealing product for a user and purpose. Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select from a range of ingredients to make appropriate food products. Carry out and record evaluations of a variety of ingredients and products. Know a range of appropriate ingredients, and whether they are grown, reared or caught.	**Why would you visit London?** *Structures* *Frame structures* **Design a skyscraper.** Formulate a pan with a step-by-step list of tasks and resources. Use tools to accurately measure, mark out, cut, shape and join materials to make frameworks. Use finishing techniques suitable for the product and critically evaluate their products against a range of criteria. Research key evets and individuals relevant to frame structures.	

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	and the basis of a healthy and varied diet.					
Summer	**How is Antarctica similar/different to the UK?** *Textiles* *Templates and joining techniques* **Make a puppet** Design a functional, appealing product for a chose user and purpose. Generate, develop and communicate ideas. Use a range of textiles, tools and equipment to perform practical tasks. Explore and evaluate existing textile products and their own ideas and products. Understand how 3-D textile products are made, using joining, templates and finishing to create two identical shapes.	**How has transport changed?** *Mechanisms* *Wheels and axles* **Create a vehicle.** Generate ideas and simple design criteria. Develop and communicate ideas through drawings and mock-ups. Select a range of tools and materials to perform practical tasks. Explore wheels and axles and evaluate their ideas and products against original criteria.	**Why would you visit Hyde? Fairtrade** *Structure* *Shell structures* **Make packaging for a Fairtrade product e.g. biscuits** Generate and develop realistic ideas and design criteria collaboratively and through analysis of existing products. Order the stage of making; selecting tools and using with some accuracy. Investigate and evaluate shell structures, and construct strong, stiff shell structures. Test and evaluate own products against design criteria and intended user and purpose.	**How can I be a good citizen of the world** *Mechanisms* *Levers and linkages* **Make a litter picker** Generate realistic ideas and use annotated sketches and prototypes to develop, model and communicate ideas. Select and use tools with some accuracy to cut, shape and join paper and card. Investigate and analyse their own and others' products with lever and linkage mechanisms. Understand and use lever and linkages, and fixed and loose pivots.	**Why are biomes important to the world? (Rainforests)** *Textiles* *Combining different fabric shapes.* **Create a textile product to sell in support of WWF/Save the Rainforest, bag, t-shirt, hat, pencil case.** Generate and communicate innovative ideas through research. Produce detailed lists of equipment and fabrics and formulate step-by-step plans for making. Investigate and analyse textile products linked to their final product to the original design specification. Know that a 3-D textile product can be made from a combination of pattern pieces, fabric shapes and different fabrics and that fabrics can be strengthened, stiffened and reinforced.	*Food technology* *Celebrating culture and seasonality* **Mexican food- Make savoury dishes to eat together** Generate and explore innovative ideas through research and discussion to develop a design brief. Write a step-by-step recipe, including a list of ingredients, equipment and utensils. Using appropriate utensils and equipment accurately, make, decorate and present a food product for the intended user and purpose. Evaluate a range of relevant products and ingredients and the final product with reference to the design brief and specification. Understand seasonality and the source of different food products