Design and Technology Overview - Year 1 to Year 6

	Autumn	Spring	Summer
1/2 cycle A	**Structures - Shade and Shelter – Autumn** This project teaches children about the purpose of shelters and their materials. Name and describe shelters. Design and build a play den as a group, design and make shelter prototypes and evaluate their completed product. **Knowledge and skills:** Designing, making and evaluating shelters and dens. **Significant person:** William Patterson and Oscar Karl Kerrison	**Mechanisms - Taxi** Children look at wheels, axles and chassis and how they work together to make a vehicle move. **Knowledge and skills:** Investigating wheels, axles and chassis. Teaching and learning about how they work - practise using the mechanism. Designing and then making a taxi. Evaluation. **Significant person:** Karl Benz	**Food - Chop, slice and mash** Make a supermarket sandwich according to specific design criteria. **Knowledge and skills:** tearing, chopping, slicing, grating, spreading, peeling, mashing **Significant person:** Mary Berry
1/2 cycle B	**Food - Remarkable recipes** Design and make a casserole – food preparation skills **Knowledge and skills:** Tearing, chopping, slicing, grating,, use a can opener, boiling **Significant person:** Cristeta Comerford	**Structures - Beach Hut** Beach huts – wooden structures, strengthening and joining wood. **Knowledge and skills:** Investigating beach huts. Woodwork - construction to box frames **Significant person:** Fredrick Percy Dolamore	**Textiles - Cut, stitch and join** Designing and making a bag tag. Significant designer - Cath Kidston. **Knowledge and skills:** Sewing pattern – **running stitch, embellishments.** **Significant person:** Cath Kidston **Mechanisms – push and pull** Design and make a greeting card with moving parts. **Knowledge and skills:** sliders, levers or linkages. It does not have to be all three.

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3/4 cycle A	**Food - Cook well, eat well** This project teaches children about food groups and the Eatwell guide. They learn about methods of cooking and explore these by cooking potatoes and ratatouille. The children choose and make a taco filling according to specific design criteria. **Knowledge and skills:** chopping, mashing, slicing, grating, using an oven, using a microwave. **Significant person:** Clare Smyth	**Structures – Making It Move** cam mechanisms - experiment with different shaped cams before designing, making and evaluating a child's automaton toy. **Knowledge and skills:** develop design criteria, explain how products benefit user, explore and use a range of mechanisms in models or products, plan materials needed for a task and explain why, suggest improvements for projects and use tools safely. **Significant person:** Al-Jazari	**Structures - Greenhouse** The children create a greenhouse structure using a variety of tools and techniques. Strengthening structures, using a glue gun and sheet materials to make greenhouse - wooden frames - safety. **Knowledge and skills:** Learning about greenhouse design. Learning about significant designers. Lessons on strengthening structures, using a glue gun and sheet materials to make greenhouse - wooden frames - using tools, cover safety. **Significant person:** Sir Joseph Paxton
3/4 cycle B	**Food - Fresh food, good food** Healthy snack with packaging design. Taste test 'healthy snacks'. Create a healthy breakfast snack – fruit kebab. **Knowledge and skills:** chopping, slicing, using a pan, stirring, melting, weighing, measuring, package design **Significant person:** Jamie Oliver	**Textiles - Functional and fancy fabrics** Designing and making patterned fabrics – Stitching a hem – William Morris. **Knowledge and skills:** Techniques for decorating fabric, including block printing, hemming and embroidery and use them to design and make a fabric sample Children may need to practise some stitches from previous years before moving on to stitching a hem. **Significant person:** William Morris	**Structures and mechanisms - Tomb builders** Look at simple machines, including wheels, axles, inclined planes, pulleys and levers. Explore how they helped ancient builders to lift and move heavy loads. Knowledge and skills: Explore and use a range of mechanisms (levers, axles, cams, gears and pulleys) in models or products. Discuss materials and properties of them. Identify what has worked well and what could be improved. **Significant person:** Howard Carter
5	**Structures and mechanisms - Moving Mechanisms** This project teaches children about pneumatic systems. They experiment with pneumatics before designing, making and evaluating a pneumatic machine that performs a useful function. **Knowledge and skills:** Understand that a pneumatic system uses compressed air to exert a force. Use pneumatic systems in their products. **Significant person:** Henry Ford	**Food - Eat The Seasons** Soup using seasonal vegetables. Use a soup maker. Taste test and evaluate seasonal vegetables. Look at different vegetable soup packaging for ingredients. Children are to learn about which vegetables are in season and the benefits of eating healthily. **Knowledge and skills:** peeling, chopping, dicing, slicing, grating, measuring, weighing, hot water - health and safety aspects **Significant person:** Nadiya Jamir Hussain	**Structures and mechanisms - Architecture** Looks at architectural style and how technology has developed over time. Use this knowledge to design a building with specific features using CAD – TinkerCad. **Knowledge and skills:** Explain how design of a product has been influenced by culture, build a framework using a range of materials to support mechanisms, use pattern pieces and computer-aided design packages to design a product and select and combine materials with precision. Build a framework using a range of materials to support mechanisms. **Significant person:** Phidias

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			Computer aided design - TinkerCad
6	Textiles - Make do and mend Investigating, repairing and recycling clothes. **Knowledge and skills:** Running stitch, whip stitch, blanket stitch, repairing clothes. **Significant person:** Vivienne Westwood	Structures - Engineer Learning about bridges and engineers. Designing and making a bridge prototype. Is there an option for tower or pulley system to be incorporated into the design? **Knowledge and skills:** Strengthening paper bridges. Triangles for strength. **Significant person:** Isambard Kingdom Brunel	Food - Food for life Pasta with a tomato sauce. Taste and evaluate different cold pasta salads - check ingredients. Children to design their own tomato based sauce. Which extra vegetables would they choose to put in? **Knowledge and skills:** peeling, chopping and dicing an onion, mashing, boiling pasta, simmering a sauce, health and safety aspects, measuring, weighing. **Significant person:** Hugh Fearnley-Whittingstall