

Design and Technology Curriculum - Examples of Character Building, Cultural Capital and Community Links						
	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
	Within each unit, key, current and diverse designers, engineers, architects, etc. are used to provide inspiration and to stimulate aspirations for the future; our opportunities challenge inequality (see, for example, data for sectors related to DT - Key facts - Royal Academy of Engineering (raeng.org.uk))					
Structure Focus (quick reference for historical structures)	Starter Structures (1.2 shared) - Developing a positive, resilient attitude towards developing technical knowledge. - Recognise the genuine connections between DT in school and the outside world through parent visits, demonstrating how the their knowledge of structures is vital in their workplace.	Swinging Structures (1.2 shared) - Increasing knowledge of well-known structures in the world from which lessons have been learnt by architects (e.g. The Leaning Tower of Pisa, Italy, the Millennium Bridge, London). - Making connections between events and increasing knowledge of British culture and history (e.g. linking architecture, such as the Houses of Parliament (built in 1840) with the timescale of significant figures, such as Florence Nightingale (1820-1910).	Frame Structures (2.6) - Gaining historical insights into the architects and designers who have shaped England; for example, noting when bridges were designed and drawing inspiration from well-known examples (Forth Bridge, Quebec Bridge and the Minato Bridge). - Making connections between historical developments (e.g. knowing that in about the same period that Ironbridge was built, William Sturgeon was an English physicist and inventor who also invented the first electromagnets, and invented the first practical English electric motor).	Shell Structures (2.7) - Learning to fulfil a number of criteria, understanding that a personally preferred method or approach may have to be adapted to meet the design brief fully. - Recognising that structures found in the natural world are often used to inspire structural designs. Link to a held view of the beauty and endurance of the ‘designed world’.	Arch Structures (3.4) - Understanding the contribution made by women such as British-Iraqi architect, Zaha Hadid. - Examining arch structures in British heritage through cathedral and church architecture, including those in the Lichfield Diocese.	Frame Structures (3.5) - Experiencing the need for precision and accuracy. - Examining iconic architecture such as the Louvre in Paris by Chinese-American architect Ming Pei. - Link to faith view of hard work to develop and hone talents and gifts.
Fabrics and skills	Sewing Stage One The intention of this progressive sewing section is to enable children to increase in their resilience and their confidence in their own increasing capabilities. We intend to provide opportunities for children to recognise and note their developing independence and technical skill - an expectation to be applied to other practical areas of their lives now and in the future (e.g., changing a bike inner-tube, following an unknown recipe, creating a recipe from left-over ingredients, sewing on a button, mending a fence, etc.). By viewing their progress in sewing, the children can view their own self-improvement and competencies, whilst continuously relating this to increasing proficiencies in other areas. The majority of the products will be used to fundraise for, support or encourage community members and groups.					
Autumn	What is Design and Technology? (1.1 shared) - Understanding how to make judgements on what works well and learning to accept failure as an important step towards innovation. - Learning how to apply resilience from other areas of learning, to persist and be willing to amend when needed. Lever Mechanisms (1.6) ‘I’m a be-lever’ - Considering the purpose of, and need for, products and distinguish the subject from arts and crafts (recognising some commonality).	What is Design and Technology? (1.1 shared) - Learning how tinkering leads to improvements. - Understanding how established ideas or a problem posted can spark new developments. Solid Structures (1.4) ‘Standing Strong’ - Finding out about some of the world’s bridges, recognising those locally, within the country and those further afield (e.g., Stretton Aqueduct in Staffordshire, Pontcysyllte Aqueduct in Great Britain and the Mahi Aqueduct in India).	What is Design and Technology? (2.1) - Recognising that changes in design happen over time and for different reasons (e.g. chair design which still fulfils a brief for an intended user); relating this to a deepening understanding of the differences between art and DT. - Recognising how increasing technical fluency requires resilience. Linked Levers (2.4) ‘Picking Up Great Ideas’ - Contributing to the community through community litter picking, recognising the personal benefits on active participation. - Taking inspiration from existing products, including an extendable grabber, a scissor-lift platform and an extendable wall bracket for a television, recognising that product design often begins with existing product evaluation. - Measuring for accuracy to waste-minimise.	What is Design and Technology? (2.1) - Examining the evolution of the design of houses and how users impact design. - Recognising the need to challenge ethnic and gender diversity in this sector (see data from Department of Culture, Media and Sports). Paper Circuits (2.3) ‘Bright Sparks!’ - Connecting learning with its use in business - how designs are turned into money-making, job-producing opportunities (e.g. Hallmark: A card is born). - Making connections with science units and understanding series circuits and parallel circuits in the home.	What is Design and Technology (Dyson Focus) (3.1) - Learning about the evolution of the design of televisions and some of the reasons for these changes. - Focusing on Dyson products as a way of understanding how designers deconstruct and innovate within the design process. - Furthering understanding the place of curiosity and resilience in the design process. Nutrition - Bolognaise (3.10 and 3.8) ‘Capable Future Chefs’ - Focused Unit - Investigating different dishes that Bolognese can be used in and different types of pasta to become innovative chef. - Creating a herb garden to complement bolognaise. - Further develop an eagerness to experiment and test out idea in order to become resilient, competent cooks of the future.	What is Design and Technology? (3.1) - Understanding the need for on-going evaluation and re-thinking. - Examining the key products of notable designers (e.g. arne Jacobsen, Philip Starcke and Margaret Calvert). - Understanding the need to promote diversity in the workforce, recognising and challenging the barriers faced historically and in the present day. Electric Motors (3.1) ‘Now We’re Motoring’ - Understanding the ways in which motors can be used in everyday products and recongising the necessity (e.g. cooling fans in machinery, engines, water purification plants, etc.). Relating this knowledge to job roles held by our community members. - Further understand the importance of innovation in making improvements to technology.
Spring	Frame Structures (1.3) ‘Keeping it Strong’ - Investigating chair structures and types and how safety is at the forefront of a designer’s thought process (linked to purpose of the product). Slider Mechanisms (1.5) ‘We Like to Move it!’ - Being a spotter of design—developing the ‘detective eyes of a designer’, discovering ways in which slider mechanisms are used, (e.g., cards and books) and their functions (i.e., engagement and participation in books, to make something appear in a greetings card).	Wheel and Axle Mechanism (1.7) ‘The Bog Baby has Wheels’ - Considering the impact of designing transport that is eco-friendly and beginning to develop simple knowledge about changing legislation (such as 3/5s cars produced in UK having to be electric by 2030). - Linking learning to a faith or secular belief in the importance of stewardship of the Earth’s resources.	Pneumatics (2.5) ‘A Flair for Air!’ - Understanding that other languages influence the English language (for example, ‘pneumatic’ comes from the Greek pneuma, meaning air or wind. Hydraulics comes from the Latin hydra, meaning water). - Considering the wide variety of products that use pneumatics in everyday life to understand the necessity for design.	App Control (2.2) ‘Coding Controllers’ - Understanding and expecting to use technical vocabulary associated with the field. - Recognising the way in which coding and algorithms are a vital part of many products in use in school and at home and developing a brave, tinkering approach to resilient coding. - Investigating app-controlled devices and considering potential future innovations.	Pulleys and Gears (3.6) ‘Getting into Gear!’ - Understanding the contribution of key historical figures, such as Archimedes (287–212 BCE), the Greek mathematician, physicist and engineer who designed a block-and-tackle system to move large ships. - Considering ways in which gears can be used in the world, such as in bicycles, to further develop a fascination for how things work. - Take inspiration from existing products: an aerial tramway (cable car) at Sugarloaf Mountain, Brazil, to understand how existing products impact future designs.	Nutrition - Bread (3.9 and 3.8) ‘Rise and Shine!’ - Developing an inclusive approach, understanding different dietary needs. - Considering hygiene and health and safety in the work place.
Summer	Nutrition - Portable snacks (1.8) ‘Snacks on the Go!’ - Developing the ability to become independent in their use of equipment, building the confidence to increase fluency through repetition or adaptation of skills. - Using equipment safely and hygienically.	Nutrition - Couscous Dish (1.9) ‘Couscous Chefs’ - Celebrating differences, considering how people have different tastes. - Appreciating how dishes which originated in countries such as Morocco, have enriched our diet. - Understanding that some foods are not available all year. - Recognising the need to use equipment safely and hygienically and that as skills increase, the range of available equipment and techniques will also widen.	Nutrition - Dips (2.9) ‘Delicious Dips’ - Considering shopping lists and cost to recognise limiting factors. - Considering dietary requirements to ensure inclusivity. - Using equipment safely and hygienically. - Knowing ways to access and follow a recipe, including the use of websites and apps.	Nutrition - Vegetable Soup (2.8) ‘Soup-er Success!’ - Making valuable contributions to the local community - creating a new soup for grandparents and carers. - Understanding shopping lists and costings - Considering dietary requirements and the need for inclusivity. - Using equipment safely and hygienically with increasing independence and fluency. - Following a recipe and adapting it within the restrictions of cost and seasonal availability.	Artificial Intelligence (3.2) ‘Making Sense of AI’ - Considering the current use of AI in the home and the future of smart homes. - Having a working understanding of the way in which many devices are underpinned by computer programming; developing self-learning skills through research and tinkering, to develop own knowledge of coding.	Cams (3.7) ‘Moving On Up!’ - Building resilience and patience, taking the time to overcome more challenging design or construction issues. - Relating woodwork techniques to household or garden tasks possible in the future.
	Food Throughout the Year (focus in Year Five and Year Six in shared unit 3.8) and through other year group links with curriculum areas (e.g. RE, geography and history)			- Appreciating seasonal dishes in terms of environmental impact, supporting local businesses and availability of fresh produce. - Developing awareness and appreciation of their own and others’ cultural events (e.g., Chinese New Year, Christmas, Diwali, Iftar, Hanukkah). - Considering dietary requirements and the needs of others (vegan, vegetarian, gluten free, etc.). - Being able to contribute to high levels of hygiene and health and safety in the home and the work place.		