DT Subject Rationale

Year Group	Unit	We teach this because…	We teach this now because…
Reception	Joining	We teach this in our reception to allow the children to practice the basic joining techniques which become a pinnacle skill that is revisited in every year. This also allows the children to develop their fine motor skills which supports in all other areas of the curriculum.	These skills are taught throughout the year. The reason we teach them all year is to ensure that these key skills are being revisited over multiple times. The reason we revisits the skills is because this allows the children to excel in these areas and the challenges can be increased depending on the child's ability.
Reception	Leavers	We teach this in our reception to allow the children to practice the basic joining techniques which become a pinnacle skill that is revisited in every year. This also allows the children to develop their fine motor skills which supports in all other areas of the curriculum.	These skills are taught throughout the year. The reason we teach them all year is to ensure that these key skills are being revisited over multiple times. The reason we revisits the skills is because this allows the children to excel in these areas and the challenges can be increased depending on the child's ability.
Reception	Food	We teach this in our reception to allow the children to practice the basic joining techniques which become a pinnacle skill that is revisited in every year. This also allows the children to develop their fine motor skills which supports in all other areas of the curriculum. Additionally, this allows our children, from such a young age, to develop an understanding of food around the world. This allows them to practice there gross motor skills in activities such as baking and sandwich making.	These skills are taught throughout the year. The reason we teach them all year is to ensure that these key skills are being revisited over multiple times. The reason we revisits the skills is because this allows the children to excel in these areas and the challenges can be increased depending on the child's ability.
Year 1	Freestanding structures	We teach this to allow the children to build upon fundamental joining knowledge learnt within EYFS. This begins the early stages of understanding how to join different materials to create a solid structure. This allows the children to explore different materials to evaluate products.	We teach this now as it links closely to building blocks in EYFS and early fundamental movement skills. This also allows a nice pre teach for the Year 2 curriculum when they begin to look at materials in science and the properties of different materials for further joining techniques.
Year 1	Sliders and Mechanisms	We teach this to begin work with fine motor skills. This allows children to link in knowledge learnt in EYFS. They do this to learn basic joining techniques on a smaller scale to make a final product.	We teach this now to develop skills learnt in EYFS and create a base knowledge for different joining techniques that will be expanded on each year throughout school.
Year 2	Puppets	We teach this to investigate permanent joining techniques. This also begins to build upon fine motor skills. The children look at different career/ real world applications of sewing. This allows the children to have choice of materials and joining techniques to serve a purpose on a final product.	We teach this now to create a base knowledge of sewing for KS2 when they recap the basics and advances of sewing. This allows the children to look at selecting materials and joining techniques to serve a purpose to a suitable product.
Year 2	Fruit boxes	We teach this to educate the children on healthy diets. This gives the children a chance to try lots of different fruits from around the globe and also look at basic needs of preparing food. This includes recap from science based upon food hygiene.	We teach this now as it builds upon hygiene learnt from EYFS with tooth brushing. We also teach it in year 2 to make sure the children have got the foundational knowledge of food and preparation to continue expanding their knowledge in KS2.
Year 2	Wheels and Axels	We teach this to begin the knowledge of moving products. This creates a foundation of knowledge for building further up school. Using previous knowledge from Y1 and EYFS, the children have to apply knowledge of joining techniques to create a moving model. This allows them to evaluate a product on the go.	We teach this now to recap and apply previous knowledge of joining techniques. This also is the foundation knowledge they need for further curriculum knowledge in later years.

Year 3	Mechanical systems leavers and linkages	We teach this to expand knowledge from Y1. This looks at exploring more difficult joining techniques with a moving product. The children are also given the chance to choose from a wider range of materials to evaluate which one will be more suitable for their product.	We teach this now to explore materials and joining techniques learnt in KS1 and then beginning to apply a more complex design criteria.
Year 3	Shell structures using (CAD)	We teach this to teach the children about precise measures. They have to build upon skills learnt in other areas of the curriculum such as maths by using a ruler to measure and draw to nearest cm and computing by designing and creating digital content on screen to combine them with materials.	We teach this now as the children can begin to use more complex spoken language to evaluate products and also create a starting knowledge in KS2 of using Computer Aided design.
Year 3	Healthy and varied diet	We teach this to recap knowledge around preparing food safely and hygienically. Within this topic we teach the children further details around the eatwell guide and also begin to use utensils and equipment successfully. The children also begin to carry out sensory evaluations of a variety of ingredients and products, record the evaluations using e.g. tables and simple graphs and evaluate the ongoing work and the final product with reference to the design criteria and the views of others.	We teach this now to build upon basic knowledge learnt in KS1. This also allows the children to create a foundation knowledge ready to expand on this knowledge in year 5. By the end of this topic, the children should be able to know how to use appropriate equipment and utensils to prepare and combine food, know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught and know and use relevant technical and sensory vocabulary appropriately.
Year 4	Pneumatics	We teach this because Teaching pneumatics introduces pupils to basic mechanical systems and the principles of air pressure and movement. Through designing and making pneumatic models (e.g. moving monsters or lifting devices), children begin to understand how everyday objects function, including toys, doors, and industrial machinery. This supports the curriculum aim of enabling pupils to "understand and apply the principles of mechanical systems" and "develop the creative, technical and practical expertise needed to perform everyday tasks confidently." Pneumatics also provides a practical context for exploring scientific concepts such as forces and air pressure, promoting cross-curricular links with science. The topic encourages experimentation, testing, and iterative design—key aspects of the D&T process—while fostering resilience and collaboration through group projects and shared problem-solving.	We teach this now as Pneumatics also provides a practical context for exploring scientific concepts such as forces and air pressure, promoting cross-curricular links with science. The topic encourages experimentation, testing, and iterative design—key aspects of the D&T process—while fostering resilience and collaboration through group projects and shared problem-solving
Year 4	Textiles	We teach this to build upon permanent joining techniques learnt in Year 2. This allows the children to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	We teach this now to practice the skills of sewing that were learnt in year 2 to apply them to a more complex product. This then allows the children to develop new styles of stiches ready to evaluate the technique and compare them to chose which one would be most suitable for a product.
Year 4	Electrical system	We teach this because electrical systems in Year 4 provides a purposeful and engaging way for pupils to explore how simple circuits are used in real-life products. This approach supports key aims of the National Curriculum for Design and Technology, particularly in enabling pupils to "understand and apply the principles of electricity in their products." By using images and examples of existing products—such as torches, doorbells, alarm systems, and toys—pupils are encouraged to think critically about how electrical components are used to solve everyday problems. This visual and contextual learning strategy allows children to make connections between abstract concepts and practical applications, fostering both technical understanding and creativity.	We teach this now as the children can use their previous knowledge of using electricals in DT based off year 3 CAD design. However, this also links with the LKS2 science curriculum of looking at circuits in science.
,Year 5	Celebrating culture	We teach this because Celebrating Culturestopic in Year 5 offers a meaningful opportunity for pupils to explore how design is influenced by cultural identity, traditions, and values around the world. This exposes pupils to a rich variety of culturally significant products, textiles, patterns, and functional items	We teach this now because this topic also enhances children's understanding of global citizenship by helping them recognise that good design is not culturally neutral, but often deeply

		from different communities globally, which encourages pupils to "develop a critical understanding of the impact of design and technology on daily life and the wider world." By engaging with visual examples of authentic cultural products, children are encouraged to reflect on diversity in design, consider the needs of different users, and appreciate how culture shapes both form and function.	rooted in tradition, geography, and community needs. This also will be one of the first few times where the children can ex
Year 5	Mechanical systems with pulleys and gears	We teach this as mechanical systems using pulleys and gears in Year 5 Design and Technology introduces pupils to fundamental engineering principles in an engaging and accessible way. This supports pupils in making real-world connections by analysing and evaluating everyday products that incorporate these mechanisms. The National Curriculum for Design and Technology, which states that pupils should "understand and use mechanical systems in their products," including gears and pulleys. By exploring familiar items—such as bicycles, cranes, clocks, and lifting mechanisms—pupils can visualise how motion and force are transferred and transformed in purposeful ways.	We teach this now as the topic promotes cross-curricular links with science (forces and motion) and maths (ratios, measurements), reinforcing the importance of STEM learning. Pupils are encouraged to work collaboratively, test ideas, and evaluate outcomes—skills that are central to the D&T design, make, and evaluate cycle.
Year 5	Frame structures	We teach this as frame structures offers a visually engaging and real-world context for pupils to explore how structures are designed, constructed, and used. By analysing everyday items presented in catalogues or online listings, pupils develop critical thinking, visual literacy, and an understanding of materials, joints, and stability. This approach supports cross-curricular links with literacy, maths, and art, while encouraging creativity and design thinking as pupils evaluate existing products and apply their knowledge to create their own frame-based solutions.	We teach this now to build upon freestanding structures knowledge from Year 1. This allows the children to look more concise at selecting the correct materials and joining techniques to build different types of structures.
Year 6	Mechanism with a message	We teach this to expand knowledge from previous years. This looks at exploring more difficult joining techniques with a moving product. The children are also given the chance to choose from a wider range of materials to evaluate which one will be more suitable for their product. This also builds upon products with different moving parts to ensure they know what a cam is and how it can be suitable for a product.	We teach this now as the topic strengthens cross-curricular links, particularly with Art and Design (visual presentation, illustration, and layout). It gives pupils an opportunity to apply their D&T knowledge in a way that combines both function and communication, encouraging more thoughtful and creative design choices.
Year 6	Using CAD with textiles	We teach this as it provides pupils with a modern, real-world context to explore how digital tools influence design and production. By analysing textile products in catalogues or online listings, pupils develop critical thinking and visual literacy while gaining inspiration for their own work. Using CAD software, they translate these observations into precise digital designs, building skills in patternmaking, measurement, and visual communication.	We teach this now to follow up on sewing skills learnt in Year 2 and Year 4. This also strengthens cross-curricular links with art, computing, maths, and literacy, while preparing pupils to be creative, digitally literate designers who can evaluate, innovate, and apply their ideas to practical textile outcomes.
Year 6	Alarming vehicles	We teach this because the alarming vehicles topic provides pupils with a real-world context to explore how mechanical and electrical systems combine to create functional designs. By analysing examples of vehicles and alarm systems in catalogues or online listings, pupils develop visual literacy and critical thinking while gaining inspiration for their own ideas. This approach allows them to apply knowledge of circuits, mechanisms, and materials in practical projects, while also strengthening links with science, maths, and literacy.	We teach this now as, ultimately, it equips pupils with creativity, problem-solving skills, and technical understanding, preparing them for more complex design challenges in secondary school.