Overview of Design and Technology at Sowe Valley Primary School

Vision (Intent)

At Sowe Valley, through the lens of our core values — *Belong, Believe, Become* — we aim to provide a high-quality Design and Technology curriculum that inspires creativity, critical thinking and practical skill development. Our intent is to equip pupils with the knowledge and confidence to become resourceful, innovative, and reflective designers who can respond thoughtfully to real-world problems.

- When designing and making, we ensure that pupils are taught to:
- **Use research and develop design criteria** to inform the creation of innovative, functional, and appealing products that are fit for purpose and tailored to the needs of specific individuals or groups.
- **Generate, develop, model, and communicate ideas** through a range of methods, including discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces, and computer-aided design.
- **Select from and use a wide range of tools and equipment** accurately to perform practical tasks such as cutting, shaping, joining, and finishing.
- **Select and use a variety of materials and components** — including construction materials, textiles, and ingredients — with attention to their functional properties and aesthetic qualities.
- **Investigate and analyse existing products**, understanding their purpose, design and effectiveness.
- **Evaluate ideas and final products** against their own design criteria, taking into account the views of others to improve their work.
- **Explore the impact of key events and individuals** in the history of design and technology, recognising their influence on the world around us.
- **Develop technical knowledge** to apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- **Understand and apply mechanical systems** in their products, including the use of gears, pulleys, cams, levers, and linkages.
- **Understand and apply electrical systems** in their designs, such as series circuits incorporating switches, bulbs, buzzers, and motors.

Through a structured approach, underpinned by carefully selected and adapted **Kapow Primary units**, we ensure that all pupils engage in purposeful design projects each term. With dedicated time given to every 10-hour unit, our curriculum fosters deep learning, ensuring that children not only *belong* as confident participants, but *believe* in their abilities and *become* capable and creative designers.

Immersion (Our Offer)

Current Practice:

At Sowe Valley, Design and Technology is a subject that empowers children to explore creativity, problem-solving, and practical skills in a meaningful and inclusive context. Rooted in our core values — **Belong, Believe, Become** — our D&T curriculum is designed to nurture confident, reflective learners who feel part of a learning community, believe in their abilities, and become skilled, thoughtful designers and makers.

Belong

We ensure all children feel a strong sense of inclusion and purpose within our D&T lessons. Through collaborative projects, peer feedback, and real-world connections, every pupil is encouraged to contribute and take pride in their work. Our curriculum supports cross-curricular links that reflect our broader learning themes, creating purposeful, relatable learning experiences that strengthen each child's connection to the wider school community.

Believe

We foster confidence and creativity by engaging children in a wide variety of carefully adapted and inspiring activities. Children learn to:

- Investigate and evaluate existing products
- Explore materials and mechanisms
- Develop their own ideas
- Design with purpose
- Make with accuracy
- Evaluate outcomes critically and constructively

Using the **Kapow Primary** scheme as a foundation, we tailor each unit to meet the specific needs of our learners and link to broader curriculum themes. This approach supports children in believing in their own design potential, while also learning to respond to feedback and improve their outcomes.

Become

We are committed to high expectations and purposeful learning. Each term, children complete a **10-hour focused D&T unit**, allowing for depth, reflection, and refinement. This dedicated time ensures that pupils can fully develop their ideas from initial concept to final product, and take ownership of the entire design process. As they progress, children become increasingly independent, resilient, and skilled — ready to tackle design challenges with confidence and creativity.

Further Development:

- Ensure knowledge mats reflect the adaptations that have been made to units of work.
- Continue to develop resources, ensuring they meet the needs of the units of work

Personalising the Curriculum to Sowe Valley (Implementation)

Reception	In Reception, Design and Technology is embedded within the areas of *Expressive Arts and Design*, *Physical Development*, and *Understanding the World*. Through carefully planned, purposeful play and adult-guided activities, our youngest learners begin to explore the early foundations of the design process in a practical, engaging, and imaginative way. Through seasonal projects, themed enhancements, and cross-curricular links (e.g. building homes for story characters, making healthy snacks, designing transport for a journey), children develop early problem-solving, creativity, and fine motor skills. In Reception, our focus is on building the confidence to *belong* as a designer, the curiosity to *believe* in new ideas, and the imagination to *become* a creative, independent thinker — laying the essential groundwork for Design and Technology throughout their primary journey.
Year 1	**Autumn Term – Textiles:** Children design, make and evaluate a puppet that represents themselves, linking to the theme Sowe Valley and Me. This project supports personal identity and belonging, as pupils explore basic joining techniques, and embellishment choices to reflect their own characteristics. **Spring Term – Food:** In this unit, children design, make and evaluate smoothies, learning about ingredients, taste combinations, and healthy food choices. They begin to understand the importance of planning, preparation, and evaluating outcomes based on purpose and audience. **Summer Term – Structures:** Linked to their history learning on The Great Fire of London, pupils design, make and evaluate a model of a London monument. This project introduces them to basic structures, joining methods, and stability, while encouraging creativity and historical understanding.
Year 2	**Autumn Term – Structures:** Children design, make and evaluate Santa's Chair, developing their understanding of stability, strength, and structure. They explore how materials can be shaped and joined to create a functional and festive product, fostering imagination and technical awareness. **Spring Term – Mechanisms:** Linked to their historical theme Town and Country, pupils design, make and evaluate a moving picture based on the story of Lady Godiva, using levers and sliders to create interactive storytelling elements. This project enhances their understanding of simple mechanisms and narrative design. **Summer Term – Mechanisms:** As part of their Seaside topic, children design, make and evaluate a fairground wheel, applying their knowledge of rotating mechanisms and construction techniques. This unit promotes teamwork, spatial awareness, and mechanical thinking.
Year 3	**Autumn Term – Food:** Pupils explore the concept of eating seasonally, learning about where food comes

	- Enhance food units by growing own salad leaves and vegetables in advance of the relevant units of work - Develop learning journeys for each unit of work - Secure links with Ernesford Grange to ensure that use of their enhanced facilities support relevant units of work – especially cooking - Link a range of designers/ craftspeople that reflect our community to each unit to enhance learning to inspire children to 'Become'.		from, the benefits of seasonal eating, and how to prepare a fruit tart using seasonal ingredients. This unit develops food preparation skills and encourages healthy lifestyle choices. **Spring Term – Digital World:** In this innovative unit, children design, make and evaluate wearable technology that incorporates a flashing LED panel, combining creativity with digital design. They explore how technology can be integrated into everyday items to serve a purpose, while learning about sustainable design and user needs. **Summer Term – Structures:** Linked to their history topic on Romans, children design, make and evaluate a model Roman Fort. This unit introduces them to more complex structural design, encouraging accuracy, stability, and thoughtful material selection to reflect historical purpose and function.
		Year 4	**Autumn Term – Electrical Systems:** Linked to their science learning on electricity, children design, make and evaluate torches. They explore simple circuits, switches, and casings, applying technical knowledge to create a functional product with a clear purpose and user in mind. **Spring Term – Food:** In this unit, pupils adapt a biscuit recipe, exploring flavour, texture and presentation. The project is linked to a social purpose — raising money for Twin My Toilet — allowing children to design for a real audience, consider cost and packaging, and reflect on how D&T can be used to make a positive difference. **Summer Term – Mechanical Systems:** As part of their London theme, children design, make and evaluate a moving London bus or taxi, learning about axles, wheels and chassis. This engaging unit develops their understanding of mechanical systems while combining creativity with cultural and geographical context.
		Year 5	**Autumn Term – Food:** Linked to their *Ancient Greeks* topic, pupils design, make and evaluate a **Greek salad**, exploring traditional ingredients, seasonality, and nutrition. They adapt recipes, consider cultural influences, and reflect on taste, presentation, and purpose. **Spring Term – Electrical Systems:** Inspired by their *space* theme, children design, make and evaluate **doodlers** — moving drawing alien robots that incorporate simple circuits and motors. This project encourages exploration of how electrical systems can power and control movement in creative, hands-on ways. **Summer Term – Mechanical Systems:** Linked to their learning about the *Tudors*, pupils design, make and evaluate **automata toys**, using cams and levers to create motion. They explore historical toy design while applying mechanical knowledge and creative storytelling.
		Year 6	**Autumn Term – Textiles:** Linked to their *World War II* topic, pupils design, make and evaluate **waistcoats** inspired by wartime uniform styles. Alongside this historical context, they personalise their garments to **reflect their own identity and**

			personality, *combining design criteria with creative flair and technical sewing skills.* ***Spring Term – Structures:*** *As part of their Ancient Egypt theme, children design, make and evaluate a* ***shaduf*** *— a traditional water-lifting device. This project deepens their understanding of structural engineering and lever mechanisms, while embedding historical learning through practical application.* ***Summer Term – Digital World:*** *Pupils combine their knowledge of digital design and 3D modelling to* ***create a product using Tinkercad****, developing a* ***3D CAD model that incorporates more than one object****. This unit challenges children to think spatially, work with precision, and understand the relevance of digital technologies in modern design.*