



Hillside Primary School

Design and Technology Curriculum Intent

At Hillside Primary School, our Design and Technology (DT) curriculum is designed to place the needs and aspirations of our pupils at the heart of their learning. Our bespoke curriculum is ambitious and inclusive, empowering every child to be a designer and engineer, fostering the technical skills and creative confidence to help them "Be the BEST they can be". We deliver a high-quality DT curriculum that equips pupils with Substantive Knowledge (technical principles, materials, and health and safety) and Disciplinary Knowledge (the iterative process of design, make, and evaluate) essential for achieving and exceeding the expected standard.

Our Design & Technology curriculum intent is underpinned by four key attitudes for learning, which ensure our pupils develop the character and resilience needed to thrive in the modern world:

- **Believe**
- **Engage**
- **Succeed**
- **Try**

BELIEVE: Building Confidence & Belonging

We foster an environment where children believe in their unique potential by designing products with a clear purpose and user in mind. From Year 1, pupils begin to believe in their ability to solve problems, moving from simple junk modelling to mastering vocabulary such as 'Prototype', 'Mechanism', 'Reinforcement', and 'Sustainability'. We believe that vocabulary is the gateway to high achievement, and through pre-teaching and scaffolded SEND adaptations, we ensure all pupils—regardless of background—believe they can access Age Related Expectations (ARE) and beyond. Pupils develop a sense of belonging by exploring how design meets the needs of diverse communities, such as designing reusable shopping bags or inclusive playhouses.

ENGAGE: Curiosity & Connection

We spark curiosity by tracking how innovations and technical discoveries have changed lives, from simple sliders and levers to complex electrical systems and CAD (Computer-Aided Design). Pupils engage as active researchers and designers, moving from asking simple

questions about existing products in Key Stage 1 to conducting surveys, interviews, and web-based research to inform their design specifications in Key Stage 2. Our curriculum draws on our locality and real-world connections, whether designing a model fire engine for the Great Fire of London or creating seasonal bread products that celebrate our community's culture.

SUCCEED: Precision & Mastery

Success in Design and Technology is rooted in the mastery of technical skills and a precise understanding of the design process. Pupils move from simple sequencing and joining techniques to mastering complex mechanical systems, such as cams, pulleys, and gears, and structural reinforcement. Mastery is shown when pupils can critically evaluate their own products and the work of famous engineers, identifying strengths and areas for development against a design brief. Pupils succeed when they can select and use tools with accuracy—such as junior hacksaws, syringes for pneumatics, or complex electrical components—to create reliable, functional products.

TRY: Resilience & Hard Thinking

We cultivate a culture where children are not afraid to "try" different interpretations and embrace the iterative nature of design. Pupils embrace "hard thinking" to solve complex problems, such as troubleshooting an electrical board game circuit or programming a product to respond automatically to the environment. They develop resilience by understanding that design involves trial and error, learning to modify their work continually to match a specification. Whether they are trying out different fabric joining techniques or experimenting with ingredients to promote a healthy diet, pupils build the character and "grit" needed to thrive as innovators in the modern world.

Hillside DT 'Big Ideas': Substantive Concepts

Our curriculum is anchored by six 'Big Ideas' that act as the "connective tissue" across year groups, helping pupils build mental schemas and retain crucial knowledge.

Big Idea	Essential Knowledge
Mechanisms	Understanding how sliders, levers, linkages, pneumatics, and cams create movement.
Structures	Knowing how to make freestanding, shell, and frame structures stronger, stiffer, and more stable.
Food & Nutrition	Understanding healthy diets, seasonality, and how to prepare ingredients safely and hygienically.
Textiles	Mastering joining techniques, 2D to 3D shape conversion, and the use of templates.
Electrical Systems	Designing and making functional products using simple and complex series circuits and switches.
Digital Design (CAD)	Navigating software to model and communicate ideas for packaging and textile products.

The Design & Technology Disciplinary Progress

Year	Autumn	Spring	Summer
Y1	Mechanisms: Sliders & Levers (Moving book character)	Structures: Freestanding Structures (Bridge)	Food: Fruit & Veg (Smoothie/Soup)
Y2	Structures: Shell Structures (Gift boxes)	Mechanisms: Wheels & Axles (Fire Engine)	Textiles: Templates & Joining (Puppets)
Y3	Mechanisms: Pneumatics (Jack-in-the-box)	Textiles: 2D to 3D (Shopping Bag)	Food: Healthy Diet (Pizza/Crumble)
Y4	Mechanisms: Levers & Linkages (Story books)	Structures: CAD Shell Structures (Packaging)	Electrical: Simple Circuits (Torches)
Y5	Mechanisms: Cams (Toys with movement)	Food: Culture & Seasonality (Bread)	Textiles: Combining Fabric Shapes
Y6	Structures: Frame Structures (Shelters)	Electrical: Complex Circuits (Board Game)	Textiles: CAD in Textiles