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| **Substantive knowledge**  Our curriculum enables pupils to:   * Understand concepts, themes and genres * Acquire and apply knowledge and skill * Develop vocabulary | | | **Disciplinary knowledge**  Our curriculum supports pupils to:   * Evaluate past and present design and technology * Develop a critical understanding of its impact on daily life and the wider world * Use skills relevant to the design brief * Evaluate the effectiveness of their own and other’s work | |
| **KS2 Tier 1 -  *all children will access KS2 Tier 1 at least once; skills will be developed through different focused tasks in Cycle A and Cycle B. Different focused individuals and events will be taught in Cycles A and B.*** | | | | |
| **Key themes**  **Key vocabulary** | **Structures** | **Mechanical Systems** | | **Food** |
| **Tier 1** | Accessing Prior Learning:  **Can you describe different ways to make a structure stronger, stiffer and more stable?** | Accessing Prior Learning:  **Can you describe how to use different mechanisms (levers, sliders, wheels and axles) correctly?** | | Accessing Prior Learning:  **Can you describe the principles of a healthy and varied diet?** |
| Acquiring & Attempting Subject Knowledge:  Make   * Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately * Select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities * Choose suitable techniques to construct products or to repair items * Strengthen materials using suitable techniques   Technical knowledge   * Apply their understanding of how to strengthen, stiffen and reinforce more complex structures | Acquiring & Attempting Subject Knowledge:  Make   * Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately * Select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities * Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears)   • Convert rotary motion to linear using cams  Technical knowledge   * Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] | | Acquiring & Attempting Subject Knowledge:   * Understand and apply the principles of a healthy and varied diet * Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques * Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed * Prepare ingredients hygienically using appropriate utensils   • Measure ingredients to the nearest gram accurately  • Follow a recipe  • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking) |
|  | Across all of DT  Design   * Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups * Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design   Evaluate   * Investigate and analyse a range of existing products * Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work | | | |
| **Focus careers** | * Builder * Architect * Bricklayer * Quantity Surveyor   Civil Engineer | * Electrician * Mechanic | | * Chef * Caterer * Nutritionist   Dietician |
| **Cycle A: Key individuals** | Isambard Kingdom Brunel  Antoni Gaudi  (La Sagrada Familia, Casa Milla, Park Guell)  Norman Foster (Gerkin)  Dame Zaha Hadid  (London Aquatics Centre, Guangzhou Opera House) | James Watt  Karl Benz | | Ainsley Harriott  Prue Leith |
| **Cycle B: Key individuals** | Fazlur Rahman Khan  Renzo Piano (The Shard)  Adrian Smith (Burj Khalifa)  Santiago Calatrava  (The Transit Hub for the World Trade Centre)  Daniel Burnham (Flat Iron) | George Stephenson  Frank Whittle | | Michel Roux Jr.  Elena Reygadas |
|  | Applying Essential Knowledge:  **Can you design, make and evaluate a bridge/ pavilion/castle, using appropriate tools and by strengthening the materials that you use?** | Applying Essential Knowledge:  **Can you design, make and evaluate a pneumatic toy, using appropriate tools?** | | Applying Essential Knowledge:  **Can you design, make and evaluate a savoury dish using seasonal ingredients?**  **Can you name ingredients that are grown, reared, caught and processed?** |
| Additional Vocabulary | 2D shapes, 3D shapes, abutment, cladding, compression, engineering, façade, feature, frame structure, function, recyclable, scoring, stable, strong, tab, tension, texture, theme, weak | aesthetic, air resistance, chassis, design, design criteria, engineering, exploded-diagram, function, graphics, input, kinetic energy, motion, net, output, pivot, pneumatic, prototype, slider, system, structure, template, thumbnail sketch | | adapt, balance, bitter, carbohydrate, climate, collaboration, cross-contamination, exported, fats, flavour, imported, nutrients, protein, prototype, quality, quantity, salty, seasonal, sensory, sour, sweet, umami, unit of measurement, vegan, vegetarian |
| Impact evidence:   * Pupil knowledge * Sketch books * Class floor books * Displays * Finished pieces | | | | |