|  |  |
| --- | --- |
| **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 camsTechnical 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 DTDesign* 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 BrunelAntoni Gaudi (La Sagrada Familia, Casa Milla, Park Guell)Norman Foster (Gerkin) Dame Zaha Hadid (London Aquatics Centre, Guangzhou Opera House) | James WattKarl Benz | Ainsley HarriottPrue 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 StephensonFrank 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
 |