The Vision for Design & Technology

Design and Technology is an important part of our curriculum. We believe that when learning about design and technology, children should learn to be designers. This means our pupils will have:

- Significant levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes.
- An excellent attitude to learning and independent working.
- The ability to use time efficiently and work constructively and productively with others.
- The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- A thorough knowledge of which tools, equipment and materials to use to make their products.
- The ability to apply mathematical knowledge.
- The ability to manage risks exceptionally well to manufacture products safely and hygienically.

Second order concepts:

These second order concepts will be explored and developed throughout the D&T curriculum as pupils move through the school:

Responsibility: working safely, how design can solve problems, choosing the right materials, responsibilities to customers to ensure quality / reliable products, healthy eating, quality ingredients
Similarity and difference: making comparisons, noting differences and drawing conclusions
Cause and consequence: identifying how things work, how an action can cause change/movement
Significance: significant designers and designs, real world examples of effective and successful products
Written and oral expression: Using terminology, evaluating, creating accurate designs, labelling and annotating, explaining process-es, presenting

Domains of knowledge & Key concepts:

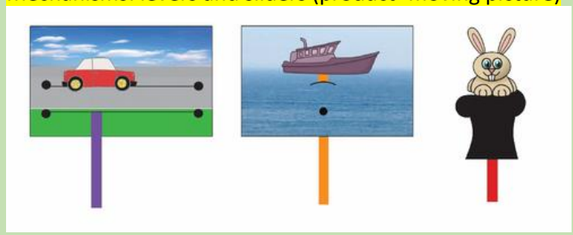
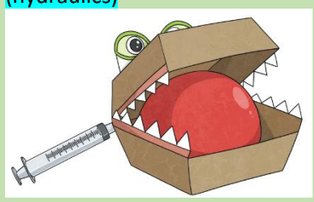
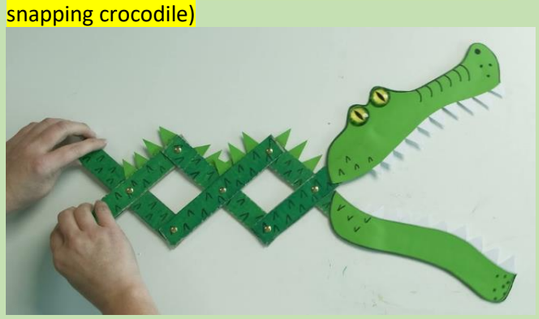
Domains of Knowledge	**Key concepts**
Mechanisms A mechanism is a device which takes on type of motion or force, and produces a different one. The role of a mechanism is to make a job easier to do. Some common mechanisms are slides, levers, linkages, gears, pulleys and cams. Others include pneumatics and hydraulics.	Research (including key events and individuals) Technical knowledge Design Make Evaluate
Textiles Textiles are used to manufacture clothes as well as to provide structure to frameworks. They can be cut and shaped to fit complicated structures. Modern textiles have 'super properties', such as fire resistance and temperature regulation.	Research (including key events and individuals) Technical knowledge Design Make Evaluate

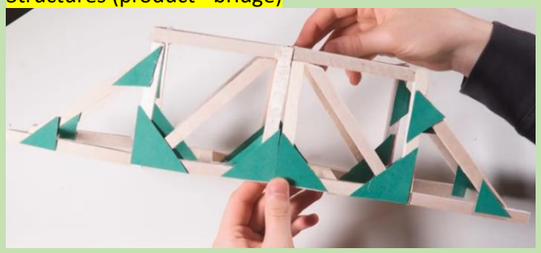
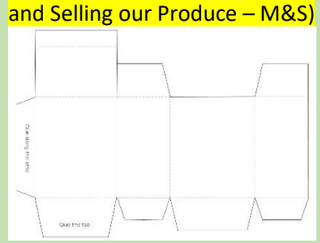
Structures *A structure is a framework or set of interconnecting parts of a complex building. They can be assembled from nets, or an open framework of rods. They can be frees-standing or supported and can be made from one or a composite of materials.*	Research (including key events and individuals) Technical knowledge Design Make Evaluate
Electric and digital (KS2 only) Learn how electronics and digital technologies are used when designing and creating products. They will gain the technical knowledge needed to programme devises and to make use of electric circuits including switches to power and control a product.	Research (including key events and individuals) Technical knowledge Design Make Evaluate
Cooking and nutrition *Learn how to prepare food using the principles of nutrition and healthy eating. Key aspects include; practical food preparation, cooking skills and aesthetics.*	Research (including key events and individuals) Technical knowledge Design Make Evaluate

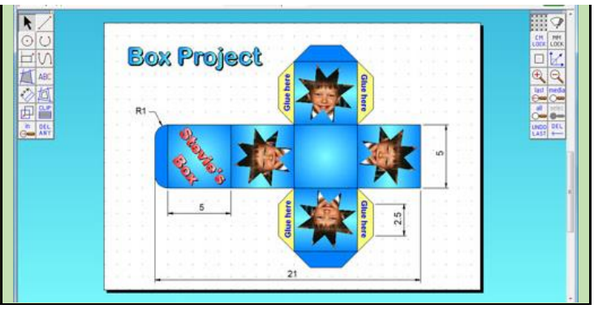
End Points:

1. Develop further knowledge and skills to enable them to design and make purposeful and quality products in different contexts
2. Be able to research how existing products work and use this to develop designs and products to meet a design brief
3. Be able to produce more detailed, annotated designs and to test and refine their ideas
4. Be able to select and use a wider range of tools and materials according to their function and properties
5. Develop the technical knowledge required to make their products work effectively
6. Be able to evaluate the effectiveness and quality of their products and use this to improve their work
7. Develop an understanding of a healthy and varied diet and be able to prepare and cook a range of dishes

Art and D and T LTP (2023-24)

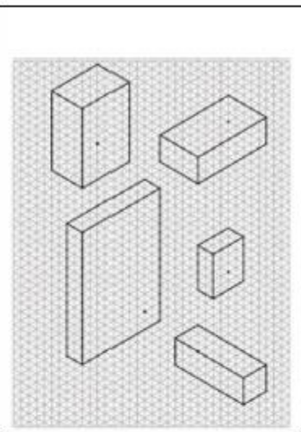
Year	Autumn term		Spring Term		Summer Term	
-	Autumn 1 (6 lessons)	Autumn 2 (6 lessons)	Spring 1 (6 lessons)	Spring 2 (6 lessons)	Summer 1 (6 lessons)	Summer 2 (6 lessons)
Year 1	Art	D&T Free standing structures (product – chair for a bear) **Key individual Eileen Gray 1878-1976** 	Art	D&T Food: Selecting and preparing fruit and vegetables (product - fruit kebab) 	Art	D&T Mechanisms: levers and sliders (product -moving picture) 
Year 2	Art	D&T Textiles: Template and joining (product – glove puppet) 	Art	D&T Mechanisms: wheels, axles and chassis (product - moving vehicle toy) Key individual- Frank Hornby (famous toy maker)  	Art	D&T Food: Following a recipe (product – Vegetable Soup) 
Year 3	Art	D&T Mechanisms: pneumatics systems (product – a pneumatic toy for a one-year-old) Key individual - Joseph Bramah (hydraulics)  Paper plates, balloon, balloon pump	Art	D&T Mechanical systems - Levers and linkages (product - snapping crocodile) 	Art	D&T Food: Healthy eating/seasonality (product – Tart using British ingredients) 

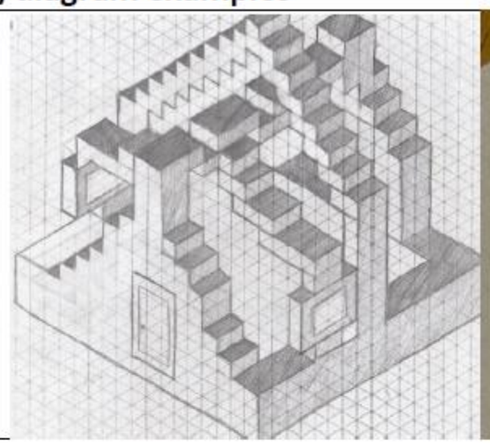
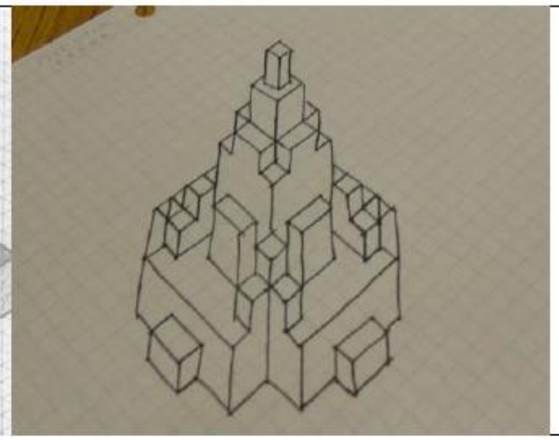
						
Year 4	Art	D&T Textiles: 2-D shape to 3-D product (product – pencil case (sewing buttons)) key individual - Heribert Beaur (strap fastener) 	Art	D&T Structures (product - bridge) 	Art	D&T Electric and digital – simple circuit components (product – torch for survival in the woods) 
Year 5	Art	D&T Mechanical Systems: Pulleys, gears, and cams?	Art	D&T Food: Improving a recipe to make healthier (product – Bolognese sauce) Key individual - Jamie Oliver (healthy school meals)   (The eatwell plate ^)	Art	D&T Textiles: 3D upcycling clothing (product – upcycling old clothes into new products Eg: T-shirt to cushion case) 
Year 6	Art	D&T Food: 3 course meal in teams (Product: 3 course meal) 	Art	D&T Electric and digital - coding/robotics (product –Robot Doodler) Key individual - Alan Turing (father of computing/coding/robotics) 	Art	D&T Structure/Digital - CAD and marketing (Product: Packaging and Selling our Produce – M&S) 

				Already part of computing curriculum?		

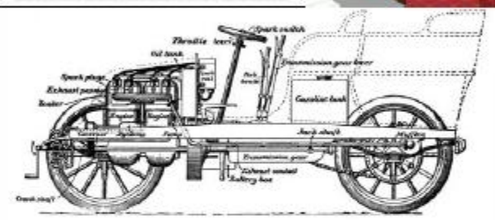
Drawing/diagram examples

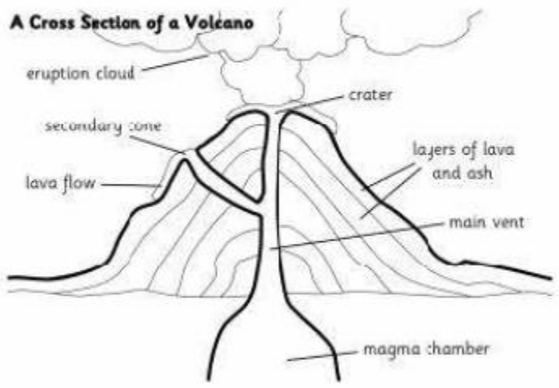
A grid used to support 3D drawing skills.

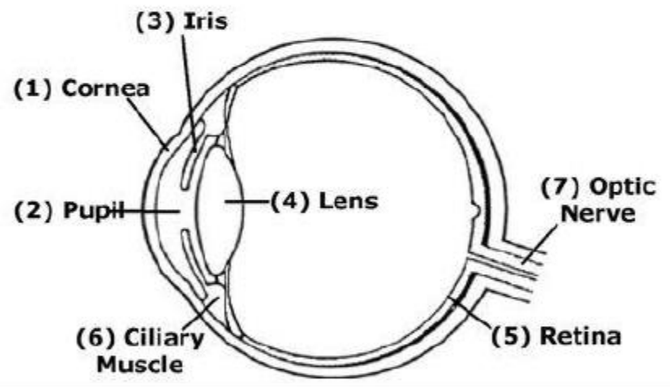


Cross-sectional diagrams







Exploded diagrams