Middleton Parish Church School Topic Map: Design Technology

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Topic 1	**Food** **Focus 1.2** **Preparing fruit and vegetables** **Link to Science** – understand that plants have leaves, stems, roots, flowers and fruits; understand the importance of growing plants and how seasons affect growth.	**Structures** **Focus 1.2** **Freestanding structures** Local area-Walking tour. **Geography** – use simple fieldwork and observational skills to study the geography of their school and its grounds and the key physical features of its surrounding environment. • **Spoken language** – participate in discussion about various structures, taking turns and listening to what others say. Ask relevant questions to extend their knowledge and understanding. Build technical vocabulary.	**Food** **Focus 3.4** **Healthy and varied diet** Children investigate a range of food products e.g. the content of their lunchboxes over a week, a selection of foods provided for them, food from a visit to a local shop. Link to the principles of a varied and healthy diet using *The eatwell plate* e.g. *What ingredients have been used?* **Link to Science** – using and developing skills of observing and questioning. Humans get nutrition from what they eat. Discuss changes of state if heat is used.	**Links to electrical circuits in science** **Electrical systems** **Focus 3.4** **Simple programming and control** **Science** – apply knowledge and understanding of circuits, switches, conductors and insulators.	**Food** **Focus 5.6** **Celebrating culture and seasonality** Relate to African food Cultures/Celebrating Diversity e.g Simple Cous Cous with chopped vegetables or a sandwich with African ingredients.	**Electrical systems** **Focus 5.6** **Monitoring and control** Investigate sensors such as light dependent resistors (LDRs) and a range of switches such as push-to-make, push-to-break, toggle, micro and reed switches. To gain an understanding of how they are operated by the user and how they work, ask the children to use each component to control a bulb in a simple circuit for a Christmas card or toy.
Topic 2	**Mechanisms** **Focus 1.2** **Sliders and Levers** **Spoken language** –cards at Christmas, ask relevant questions to extend their knowledge and understanding. Build technical and directional vocabulary. Use spoken language to develop understanding through imagining and exploring ideas. • **Art and design** – use colour, pattern, line, shape. • **Computing** – digital graphics and text could be incorporated into final products as the background or moving parts.	**Textiles** **Focus 3.4** **2-D shape to 3-D product** Making related to holiday topic • **Science** – physical properties of fabrics. • **Spoken language** – asking and answering questions to develop understanding. Through discussion, participate actively initiating and responding to comments. • **Mathematics** – nets of shapes and accurate measurements mm/cm. • **History** – investigating textiles and textile products from age being studied.	**Structures** **Focus 3.4** **Shell structures using computer-aided design (CAD)** Link to Egyptian art and jewellery. Casket shell-mystery box, keep safe box. **Science** – discuss the properties and suitability of materials for particular purposes. • **Mathematics** – compare and sort common 2-D and 3-D shapes in everyday objects. Recognise 3-D shapes in different orientations and describe them.	**Mechanical systems** **Focus 3.4** **Pneumatics** Links to What makes us shake? Device to move card scenery of an earthquake machine. **Science** – identify and compare the suitability of a variety of everyday materials for particular uses	**Textiles** **Focus 5.6** **Combining different fabric shapes** **Links to Art- collage** **History** – significant person/people in their locality linked to textiles and products e.g. William Morris, Amanda Wakeley.	**Mechanical systems** **Focus 5.6** **Pulleys or Gears** Designing a toy Links- **Mathematics** – understand ratios. Apply understanding and skill to carry out accurate measuring using standard units i.e. cm/mm. • **Science** – apply knowledge and understanding of circuits, switches, conductors and insulators. Recognise that some mechanisms, including pulleys and gears, allow a smaller force to have a greater effect.

Topic 3	**Textiles** **Focus 1.2** **Templates and joining techniques** **Links to Art and design** – use colour, pattern, texture, and shape as appropriate	**Mechanisms** **Focus 1.2** **Wheels and axles** **Science** – working scientifically: ask simple questions and observe closely. Explore use of everyday materials. • **Mathematics** – number of wheels, more than, less than, equal. • **Spoken Language** – use of technical vocabulary. Ask relevant questions to extend understanding and build vocabulary and knowledge.	**Structures** **Focus 3.4** **Shell structures** Made after computer designs	**Mechanical systems** **Focus 5.6** **Cams** • **Computing** – use search technologies for research purposes and be discerning when evaluating digital content. • **Science** – forces and movement: explore the effects of simple machines on movement.	**Structures** **Focus 5.6** **Frame structures** **Link to What makes people leave their homes** **Tents and shelters outside** **Science** – compare and group together everyday materials on the basis of their properties. • **Mathematics** – identify 3-D shapes, including cubes and other cuboids, from 2-D representations.	**Textiles** **Focus 5.6** **Using computer-aided design (CAD) in textiles** **Links to textiles** **Textiles in Manchester and Middleton. Computing** – children express themselves and develop ideas using a range of information and communication technology resources.