**St Michael’s C of E Primary School - Our Design and Technology Vision**



**Intent:**

Through an exciting and rigorous design and technology curriculum pupils are inspired by engineers, designers, chefs and architects to use their knowledge, skills and creativity to produce a range of structures, mechanisms, textiles, electrical systems and food products. At St Michael’s our Design and Technology curriculum teaches children to evaluate, design, and make products for a given purpose. Children consider the user’s needs and wants build on the knowledge and skills learnt in previous year groups. Using their prior knowledge helps pupils to solve real life, relevant problems, drawing on skills learnt in other lessons such as mathematics, science, computing and art to support them. Children work alone and in groups to take risks and problem solve, characteristics which enable them to become resourceful, innovative and enterprising citizens.

**Implementation:**

*What did do we teach? What does this look like?*

At St Michaels we teach the National Curriculum by following the clear cycle of evaluating existing products and applications, which leads to designing, making and evaluating their own, whilst considering the user, function and purpose of a product. A clear knowledge and skills progression document ensures that learning is sequenced appropriately in order to maximise learning.

Pupils have three design and technology projects a year; one on food and two projects based on structures, electronics, mechanisms and textiles. We invested in the *Projects on a Page* scheme of work to support and guide teachers to plan and deliver high quality lessons. Pupils experience a unit of work focussing on structures, mechanisms, textiles and electrical systems every two years, and have one food project each year. They learn appropriate technical knowledge, vocabulary and skills each year, building on prior learning.

During DT cross-curricular links are made. Pupils draw on their scientific knowledge of properties of materials for projects involving textiles and structures and their knowledge of circuits in electrical systems. They apply mathematical knowledge when measuring and calculating quantities. English skills, such as reading and writing, are used in research, planning, and evaluations, and speaking and listening skills are essential when working with others.

Design and technology is further enhanced visits to places such as museums and food establishments, and by having visitors in school.

**Impact:**

*What are the outcomes at St Michael’s?*

As part of each project, pupils are given the opportunity to create a final product. This enables them to combine and demonstrate their knowledge and skills. Analysis of pupils’ work including prototypes and work on particular skills, together with interviewing pupils about their present and prior learning (pupil voice) indicates that pupils learn exceptionally well at St Michael’s, and most importantly, they relish the challenges and opportunities that Design and Technology provides. Children become creative thinkers, problem solvers and learn to take appropriate risks. Through the evaluation of past and present technology and innovation, they develop a critical understanding of its place in society and its impact on daily life and the wider world. In cooking children apply the principles of healthy eating and learn basic cookery skills. Regular Art, Design and Technology Showcases, open to parents and carers provide a platform for pupils to demonstrate and celebrate their learning.

We assess the impact of our design and technology curriculum in a number of ways:

* Assessing knowledge, skills and understanding of technical language before and after the unit is taught
* Interviewing children about their learning (pupil voice).
* Taking images and videos of pupils learning
* Moderation staff meetings where there are opportunities to evaluate standards in pupil’s books and discuss the work for each class
* Annual reporting of attainment across the curriculum
* Termly Class subject swaps by Curriculum Teams to evaluate learning
* Analysis of pupils’ achievement against assessment criteria on OnTrak

Teacher assessment is used to inform future planning in relation to adaptations for support.

By the time children leave our school they will have:

* An excellent attitude to learning and, hopefully, a passion for Design and Technology.
* Excellent collaboration and teamwork skills.
* A good understanding of the evaluating, designing, making cycle and the ability to modify and improve work as it develops
* The ability to carry out thorough research, show initiative and ask questions to develop detailed knowledge of the user’s needs and apply this when making ethical design decisions
* Excellent knowledge of which tools, materials, techniques and equipment are needed to make specific products.
* The ability to manage risks to use tools and techniques safely and effectively.
* A secure understanding of the importance of maintaining high standards of hygiene when preparing food.

**D&T Long Term Plan:**

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| **Year 1:** | **Structures:**  **(Freestanding Structures)**  **Building Playground Equipment** | **Mechanisms:**  **(Sliders and Levers)**  **Easter Greeting Card** | **Food Project:**  **(Preparing Fruit and Vegetables)**  **Fruit Kebab** |
| **Year 2:** | **Textiles:**  **(Templates and Joining Techniques)**  **Making a Puppet** | **Mechanisms:**  **(Wheels and Axles)**  **Moving Vehicle** | **Food Project:**  **(Preparing Fruit and Vegetables)**  **Fruit Salad** |
| **Year 3:** | **Textiles:**  **(2D Shape to 3D Product)**  **Making a Bag** | **Structures:**  **(Shell Structures)**  **Package for Clay Model** | **Food Project:**  **(Healthy and Varied Diet)**  **Healthy Sandwich/Wrap** |
| **Year 4:** | **Mechanisms:**  **(Levers and Linkages)**  **Pop Up Book** | **Electrical Systems:**  **(Simple circuits and switches)**  **Making a Torch** | **Food Project:**  **(Healthy and Varied Diet)**  **Soup** |
| **Year 5:** | **Structures:**  **(Frame Structures)**  **Tent** | **Electrical Systems:**  **(More Complex Switches and Circuits)**  **Buzz Wire Game** | **Food Project:**  **(Celebrating Culture and Seasonality)**  **Bread** |
| **Year 6:** | **Textiles:**  **(Combining Different Fabric Shapes)**  **Slippers** | **Mechanical Systems:**  **(Cams)**  **Moving Toy** | **Food Project:**  **(Celebrating Culture and Seasonality)**  **Pizza for Reception Buddy** |