

Bishop Lonsdale Church of England Primary School and Nursery

**Design and Technology**

**Intent**

Design and Technology is taught across all Key Stages at Bishop Lonsdale. Children are encouraged to use their problem-solving skills, think creatively and develop their own production ideas. Alongside developing a product or solution, our children also expand their technical knowledge, vocabulary and skills whilst using tools; and manufacturing using different materials. Using purposeful and meaningful stimulus from Curriculum Maestro children undergo the following stages of product development through all units of work.

Design

Children will explore existing products on the market, evaluate their effectiveness and identify areas of improvement. Children identify a purpose for their product and a target market. They then design and modify existing products to suit their brief. Our children use a variety of methods to plan and design their product, these include: Computer Aided Design (CAD); technical drawings and prototyping.

Make

Based off their chosen design, the children will manufacture their product independently, in pairs or in small groups. Children are taught the specific skills that they will need to create a successful outcome. Our children will learn about: joins, sawing techniques, moving parts, safety procedures, including electrical components within a product and many more. Our children will use a wide range of tools and materials and work safely, using protective measures.

Evaluate

Upon completion, our children will peer and self-assess their product against the initial production criteria. Children will identify areas of strength and weakness in their design and their end product. Within this, our children will evaluate the effectiveness of the materials chosen and any environmental impacts which their product might have on the environment.

Cooking and Nutrition

Children will engage in one unit of Cooking and Nutrition each year, developing their understanding of living a healthy lifestyle and their food preparation skills. They will analyse current industry practices and discuss any improvements they would like to see be made. Our children will hone their food preparation and cooking skills, whilst making a variety of healthy meals and snacks. All allergy and dietary requirements will be catered for during these sessions.

**Implementation**

Early Years Foundation Stage

In the Early Years Foundation Stage, children will be developing the foundations of design and technology skills both formally and informally. Children will participate in structured activities which encompass construction and model making. Children will have to use their critical thinking skills to decipher the best method to combine and join a variety of materials whilst discussing material properties and textures. Children will be provided with a purpose for their models and the opportunities to plan or record their final designs. With support, children will be developing the foundations of evaluation and learning through trial and error.

During continuous provision, children will have opportunities to develop their own skill through the construction activities available. Paper and pencils are always provided to give children the opportunity to plan/record their designs. Children will also begin with their learning about food preparation and hygiene.

Key Stage 1

Children enter Key Stage 1 with the foundational skills developed in EYFS and these will be further developed in Year 1. Children will learn about axels, wheels, fastenings and fixtures. Children will explore current examples already on the market and use these as inspiration to create their own moving models. Children will then go on to learn about food hygiene and preparation such as chopping and slicing. In Year 2, children will further this knowledge with the addition of learning surrounding food sourcing. They will also use their knowledge of joining and fastenings to build structures, looking at strength and stability. Children will also be introduced to textiles in Year 2. Children will learn how to join pieces of fabric together using fundamental stitches and start to learn about applique techniques.

Lower Key Stage 2

Children in Year 3 will be exposed to recipes, how to use them and developing their own version of a recipe. Children will use their previous learning to explore linkages, looking at how parts move within a machine and creating those on a small-scale model. Following the structures unit in year 2, children will then use this foundation to then build a greenhouse. In Year 4, children will look at food preservation. They will explore existing packaging solutions and use this to create their own, suitable for food preservation. This includes looking at food rules and regulations. Children will then return to their textile knowledge. They will explore significant designers and learn all about the world of home furnishings. Finally, children will learn about ancient practices to move heavy loads, looking at pulleys, axels and wheels.

Upper Key Stage 2

In Year 5, children will learn about pneumatics and pneumatic systems. They will use this knowledge to build a model with a pneumatic system within it. Children will then learn about seasonality and how produce is affected by the weather during farming. Finally, children will be introduced to Computer Aided Design systems. They will be exploring architectural design and the importance of significant features. In Year 6, children will learn about how food is processed for supermarkets and the impact that food processing can have on diet and health. Children will be learning about bridges, and the importance of structural systems to retain strength. Children will be using this knowledge to participate in a variety of bridge-related challenges. Finally, children in Year 6 will consolidate all that they have learnt in textiles to combine materials, using old materials recycling and repurposing textiles.

**Impact**

From teaching Design and Technology at Bishop Lonsdale, children will gain an understanding of how our world is made. They will be able to think critically and evaluate existing products, using this to consider a variety of factors when designing and making their own products. Children will be able to design and make a product for a specific purpose, fulfilling a design criteria. They will have extensive knowledge around the design, make and evaluation process of production and will be able to use technical and subject specific knowledge for all stages of product development. Children will understand the principle of a healthy and balanced diet and can prepare healthy meals.