

Design and Technology



Curriculum Intent

Design and Technology prepare children to deal with tomorrow's rapidly changing world. It encourages children to become independent, creative problem solvers and thinkers as individuals and part of a team. It enables them to identify needs and opportunities and to respond to them by developing a range of ideas and by making products and systems. Through the study of Design and Technology, they combine practical skills with an understanding of aesthetic, social and environmental issues as well as functions and industry. This allows them to reflect and evaluate past and present technology, its uses and impacts.

It is the intent of St Bede's Primary School for Design and Technology to be taught in all year groups through at least one topic per term. Design and Technology topics are planned cross curricular, linking to other subjects being taught, and are based on the National Curriculum 2014 guidelines.

We intend pupils to:

- To develop creative, technical and practical expertise needed to perform everyday tasks confidently.
- To ensure the learning of Design and Technology skills is progressive.
- To build and apply a repertoire of knowledge, understanding of skills in order to design and make high quality prototypes and products for a wide range of users.
- To develop evaluation skills and test ideas for their products and also the work of others.
- To develop the pupil's understanding of the principles of nutrition and learn how to cook.

Curriculum Implementation

The teaching and implementation of the Design and Technology Curriculum at St Bede's Primary School is based on the National Curriculum and is taught on a weekly basis for one half term each term. Our school uses the objectives from the curriculum as a basis for the planning of Design and Technology, which is cross-curricula linked to the termly topics to enhance the learning. The planning is progressive and begins with basic skills and techniques which are practised and applied in many contexts. These skills gradually increase in demand and complexity throughout the primary years. Children will design products with a purpose in mind and an intended user. Food technology is implemented across the school with children developing an understanding of where food comes from, the importance of a varied and healthy balance diet and how to prepare this.

Design and Technology is a crucial part of school life and learning, and it is for this reason that as a school we are dedicated to the teaching and delivery of a high quality Design and Technology curriculum.

Design and Technology also embeds our St Bede's learning behaviours. It is an inspiring, rigorous and practical subject, requiring creativity, resourcefulness and imagination. Pupils design and make products that solve real and relevant problems within a variety of contexts. It is cross-curricular and draws upon subject knowledge and skills within Mathematics, Science, History, Geography, Computing and Art. Children learn to take risks and be reflective, innovative, enterprising and resilient. Through the evaluation of past and present technology they can reflect upon the impact of design and Technology in everyday life and the wider world.

Early Years Foundation Stage

Pupils will explore and use a variety of media and materials through a combination of child initiated and adult directed activities.

Pupils will have the opportunities to learn to:

- Use different media and materials to express their own ideas.
- Use what they have learned about media and materials in original ways, thinking about the form, function and purpose.
- Make plans to construct with a purpose in mind using a variety of materials.
- Develop skills to use simple tools and techniques appropriately, effectively and safely.
- Select appropriate resources for a product and adapt their work where necessary.
- Cook and prepare basic foods under observation and instruction, adhering to good health and hygiene routines.

Key Stage 1

Through a variety of creative and practical activities pupils should be taught the knowledge, understanding and skills needed to engage in an interactive process of designing and making.

When designing and making pupils will be taught to:

Design

- Design purposeful, functional, appealing products for themselves and others based on a given criteria.

Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and where appropriate information and communication technology.

Make

- Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining, finishing etc.
- Select and use a wide range of materials including construction materials, textiles, ingredients etc. according to their characteristics.

Evaluate

- Explore and evaluate a range of existing products.
- Evaluate their ideas and products against their design criteria.

Technical Knowledge

- Build structures, exploring how they can make them stronger, stiffer and more stable.
- Explore how they can use mechanisms e.g. levers, sliders, wheels, axles etc. in their products.

Cooking and Nutrition

As part of their work with food , pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

- Use the basic principles of a healthy diet to prepare dishes.
- Understand where food comes from.

Key Stage2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding of skills needed to engage in an interactive process of designing and making. They should work in a range of relevant contexts.

When designing and making pupils will be taught to:

Design

- 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.

Make

- Select from and use a wider range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining, finishing, accurately.
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

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.
- Understand how key events and individuals in design and technology have helped shape the world.

Technical Knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Understand and use mechanical systems in their products e.g. Gears, pulleys, cams, levers, linkages etc.
- Understand and use electrical systems in their products e.g. series circuits incorporating switches, bulbs, buzzers, motors etc.
- Apply their understanding of computing to program, monitor and control their products.

Cooking and Nutrition

- Understand and apply principles of a healthy and varied diet.
- Prepare and cook a variety of predominantly savoury dishes using a range of techniques.
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Impact

Assessment of children's learning in Design and Technology is an ongoing monitoring of children's understanding, knowledge and skills by the class teacher throughout lessons. This is done through observations of the children working, discussions with them as they progress through different stages of the task, marking their workbooks and the evaluation of the end product. The teachers make progress judgments against the learning objectives and staged success criteria.

At the end of a unit, children review their own and each other's work, focussing upon an evaluation of the finished product and how effectively it meets the learning objective.

Due to the practical nature of Design and Technology, evidence of work undertaken by the children can be in the form of teacher's notes or a photographic evidence. Samples of the design process through to the end product are also evidenced within their workbook.

At the end of the year, the class teacher makes a summary judgement about the work of each pupil in relation to the skills they have developed in-line with the National Curriculum in England 2014 and these are reported to parents as part of the child's annual school report. We use this as the basis for assessing the progress of the child and we pass this information on to the next teacher at the end of the year.

The monitoring of the standards of children's work and of the quality of teaching through monitoring planning, lessons and pupil voice in Design and Technology is the responsibility of the Design and Technology Subject Lead and Head Teacher. The Design and Technology Lead also supports colleagues in the teaching of the subject, being informed about current developments, and providing a strategic lead and direction for the subject in the school. Pupils and staff also have opportunities informally and more formally to make suggestions e.g. through questionnaires and in curriculum staff meeting time. The coordinator meets termly with the Design and Technology governor to discuss development priorities included in the school improvement plan which is reported to the full governing body.