



Blessed Robert Widmerpool Catholic Voluntary Academy

Design Technology Policy

“For we are God's handiwork, created in Christ Jesus to do good works, which God prepared in advance for us to do.”

Ephesians 2:10

INTENT

Our Design and Technology curriculum provides a broad, balanced and inspiring education that celebrates each child's God-given talents and creativity. Through engaging, hands-on learning, pupils use imagination and problem-solving skills to design and make purposeful products that address real and relevant problems, considering their own and others' needs, wants and values.

Design and Technology is an inspiring, rigorous and practical subject. Pupils learn to take risks, explore ideas, experiment with materials and reflect on their work through the iterative process of designing, making and evaluating. The emphasis is not only on the final product, but on developing resilience, independence and pride in progress. Children draw upon knowledge from mathematics, science, engineering, computing and art, while also considering aesthetic, social, ethical and environmental factors.

Rooted in our Catholic faith and Catholic Social Teaching, the curriculum promotes the dignity of each individual and encourages pupils to use their talents for the common good. They are taught to see design as a way of serving others and caring for God's creation, fostering stewardship, sustainability and responsibility.

We are committed to diversity, equality and inclusion. Pupils learn about designers and innovators from a wide range of cultures and backgrounds and explore how design and technology both reflect and shape society. Cross-curricular links enrich learning and deepen understanding of the wider world.

Cooking is an essential part of our curriculum. As a vital life skill and expression of creativity, it enables pupils to prepare healthy, affordable meals and develop an understanding of nutrition and food safety.

Our programme ensures that pupils meet the end of Key Stage attainment targets of the National Curriculum, while developing confidence as creative, reflective and enterprising individuals who are well prepared to contribute positively to an ever-changing world.

IMPLEMENTATION

The D&T curriculum is broadly categorised within four main stages per topic: design, make, evaluate and technical knowledge. Each stage of the design process is underpinned by technical knowledge. The curriculum has a clear progression of skills and knowledge within these stages, including technical knowledge.

Through the school's curriculum, children respond to design briefs and scenarios that require the children to 'make something, for someone for some purpose' that require the consideration of the needs of others, developing their skills in the key areas of:

- Structures
- Mechanisms / Mechanical Systems
- Electrical systems
- Digital World
- Textiles
- Cooking and Nutrition

The curriculum is a spiral curriculum, with key areas revisited on a 1/2 year cycle with increasing complexity, allowing pupils to revisit and build on their previous learning. This allows for planned repetition to allow knowledge to be committed to memory.

Aims

- Develop imaginative thinking
- Enable children to talk about how things work, and to draw and model their ideas
- Encourage children to select and use appropriate tools and techniques for making a product, whilst following safe procedures
- Engage children in an iterative design process
- Explore attitudes towards the made world and how we live and work within it
- Develop an understanding of technological processes, products, their manufacture and their contribution to our society
- Foster enjoyment, satisfaction and purpose in designing and making

Learning and Teaching

Children are encouraged to apply their knowledge and understanding when developing ideas, planning and making products and then evaluating them. This is done through a mixture of whole-class teaching and individual/group activities/whole school events. Within lessons, children are given the opportunity both to work on their own and to collaborate with others, listening to other children's ideas and treating these with respect. Children critically evaluate existing products, their own work and that of others. They have the opportunity to use a wide range of materials and resources, including ICT.

Catholic Social Teaching

Design Technology incorporates innovative creativity and risk-taking leading to a high level of resourcefulness enabling learners to become channels of divine inspiration. Design Technology challenges students to engage with issues of inclusion, stewardship, the dignity of the human person and ecology.

Regular Recall and Retrieval

Regular recall of key knowledge taught in previous lessons and previous year groups occurs at the start of sessions to enhance the children's long-term memory of key D&T knowledge and concepts. Recorded 'Quick Quizzes' occur fortnightly. Each topic ends with a formal assessment of key knowledge and a self-assessment objective grid for children and teacher to identify attainment and progress.

In all classes there are children of differing ability. Suitable learning opportunities are provided for all children using a low threshold/high ceiling approach so challenge is available and expected provided for all alongside:

- Setting common tasks that are open-ended and can have a variety of results
- Setting tasks of increasing difficulty where not all children complete all tasks
- Providing a range of challenges through the provision of different resources
- Using additional adults to support the work of individual children or small groups

Curriculum Planning

The curriculum framework and topic cycle grid provides an overview of what children will be learning throughout the year and provides a guide for long term planning in each key stage. This framework is continually reviewed in

order to provide a curriculum that is rich in creativity. A themed, experienced based approach enables children to make connections and link ideas and areas of learning.

A wide range of visits, visitors and partnerships enhances the broad and rich curriculum.

The school scheme of work for design technology provides opportunities for children of all abilities to develop their skills and knowledge in each unit and planned progression ensures that the children are increasingly challenged as they move through the school.

Curriculum planning in design technology is carried out in three phases (long-term, medium-term and short-term). The long-term plan maps the design and technology topics studied in each term during each key stage.

Medium-term plans, give details of each unit of work for each term.

Short term plans list the specific learning objectives of each lesson.

Planning reflects a commitment to taking learning outside and provides high quality outdoor learning opportunities to inspire all children. Taking a Forest School approach brings learning to life!

Forest School

A comprehensive Forest School program (for EYFS) and OPAL play for Y1- Y6 enriches the D&T curriculum. Here, children apply their skills in an outdoor context.

Knowledge Organisers

Knowledge organisers are provided for each topic to provide class teachers with key objectives, previous knowledge and key vocabulary identified. These are used at the teacher's discretion to aid teaching and learning of D&T.

Foundation Stage

DT in Foundation Stage is an integral part of the children's learning during the year. The design aspects are related to objectives set out in the Early Learning Goals. This learning forms the foundations for later work in craft design and technology. These early experiences include asking questions about how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction material safely and with increasing control.

A range of experiences are provided that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children's interest and curiosity.

IMPACT

The impact of the curriculum is constantly monitored through formative assessment.

After being taught the D&T curriculum, children leave school equipped with a range of skills to enable them to success in their secondary education and be innovative, resourceful members of society.

The overall expected impact is that children will:

- Understand the functional and aesthetic properties of a range of materials and resources
- Understand how to use and combine tools to carry out different processes for shaping, decorating and manufacturing products
- Build and apply a repertoire of skills, knowledge and understanding to produce high quality, innovative outcomes (including models, prototypes, CAD and products to fulfil the needs of users)
- Understand and apply the principles of healthy eating, diets and recipes including key processed, food groups and cooking equipment

- Have an appreciation for key individuals, inventions and events in history and of today that impact our world
- Recognise where our decisions can impact the wider world in terms of community, social and environmental issues
- Self-evaluate and reflect on learning at different stages and identify areas to improve
- Meet the end of Key Stage expectations outlined in the National Curriculum for D&T
- Meet the end of some Key Stage expectations outlined in the National Curriculum for Computing

When designing and making in KS1, children are taught to:

Design

- design purposeful, functional, appealing products for themselves and other users
- based on design 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 [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Key Stage 2

Through a variety of creative and practical activities, children are taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They will work in a range of relevant contexts (for example, the home, school, leisure, culture, enterprise, industry and the wider environment).

When designing and making in KS2, children are 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 for example, cutting, shaping, joining and 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 [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

Cooking and Nutrition

As part of their work with food, pupils are taught how to cook and apply the principles of nutrition and healthy eating.

In Key stage 1, children are taught to:

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

In Key stage 2, children are taught to:

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

Contribution of Design Technology to Other Curriculum Areas

English

Craft, design and technology contribute to the teaching of English by providing valuable opportunities to reinforce what the children have been doing during English lessons. Discussion, drama and role-play are important ways for the children to develop an understanding that people have different views about craft design and technology. The evaluation of products requires children to articulate their ideas and to compare and contrast their views with those of other people. Through discussion children learn to justify their own views and clarify their design ideas.

Computing

Computing is used to support craft design and technology teaching. Children use software to enhance their skills in designing and making, and use draw-and-paint programs to model ideas and make repeating patterns. They use databases to provide a range of information sources and the internet to gain access to images of people and environments.

Personal, Social and Health Education (PSHE) and Citizenship

Craft design and technology contributes to the teaching of personal, social and health education and citizenship. Children are encouraged to develop a sense of responsibility in following safe procedures when making things. They also learn about health and healthy diets. Their work encourages them to be responsible and to set targets to meet deadlines. They also learn through their understanding of personal hygiene and how to prevent disease from spreading when working with food.

Forest School

The school's Forest School programme enhance a variety of skills linked closely with to D&T. See Forest School Progression Grid.

Spiritual, Moral, Social and Cultural Development

The teaching of craft design and technology offers opportunities to support the social development of children through the way they are expected to work with each other in lessons. Groupings allow children to work together, and give them the chance to discuss their ideas and feelings about their own work and the work of others. Through their collaborative and co-operative work across a range of activities and experiences in design and technology, the children develop respect for the abilities of other children and a better understanding of themselves. They also develop a respect for the environment, for their own health and safety and for that of others. They develop their cultural awareness and understanding, and they learn to appreciate the value of differences and similarities. A variety of experiences teaches them to appreciate that all people are equally important, and that the needs of individuals are not the same as the needs of groups.

Special Educational Needs

Design Technology is an important part of the curriculum. A minority of children have particular learning and assessment requirements that could create barriers to learning. When planning, teachers provide rich learning opportunities, responding to children's diverse learning needs which are matched to the specific needs of individuals and groups of children

Provision made enables all children to participate effectively in a wide range of activities.

Assessment and Recording

Children's work in DT is assessed by making informal judgements as they are observed during each lesson. Formative assessment takes place constantly leading to adaptations made during the lesson to support and challenge learning. At the end of a unit of work, the teacher makes a summary judgement about the work of each pupil in relation to the National Curriculum level of attainment. This assessment of a child's progress is passed to the pupils next teacher in a transfer of information meeting.

Resources

A wide range of resources are used to support the teaching of craft design and technology across the school. Classrooms have a range of basic resources which is kept in a central design and technology store. A member of the curriculum team takes responsibility for regular review of resources, so that priorities can be identified.

Health and Safety

The general teaching requirement for health and safety applies. Children are taught how to follow proper procedures for food, safety and hygiene.

Monitoring and Review

The monitoring of the standards of children's work and of the quality of learning and teaching is the responsibility of the School Leadership Team, supported by the curriculum team. The role of the curriculum team involves supporting colleagues, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The curriculum team informs the School Leadership Team of their evaluation of the strengths and weaknesses in the subject and indicates areas for further improvement.

A member of the curriculum team has the responsibility to review evidence of the children's work, update development plans and work alongside teachers to support and evaluate learning and teaching across the school. As part of this process good practice is identified and shared.

Staff training will ensure this process of monitoring and review is effective, so maintaining high standards in learning and teaching.

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