With God, all things are possible

St. Margaret's Anfield Church of England Primary School

Jesus said, "Love one another as I have loved you" John 15:12. Therefore, by faith and work, we will be the change you want to see.

Policy for Design Technology.

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Introduction

This policy outlines the teaching and learning of design and technology. It reflects the views of all teaching staff at St Margaret's Primary School. We believe that the development of Design and Technology capability is important in preparing all pupils for citizenship in an ever increasing technological world. The ability to use technological skills is a vital life skill in modern society. We also believe that using these skills in a purposeful way provides the opportunity to extend and enhance teaching and learning experiences in the National Curriculum as a whole. Design and Technology can motivate pupils and promote self-esteem and confidence in all pupils, including those with Special Educational Needs (SEN).

Definition

According to the National Curriculum (2014), Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

The Nature of Design & Technology

Design and Technology is a PRACTICAL SUBJECT and should always involve the children in designing and making things that work. Children should be given the opportunity to develop their design and technology capabilities through

- 'Iterative' designing and making of products in a variety of contexts
- practical tasks which allow them to develop their knowledge, understanding and skills
- activities in which they investigate and evaluate processes and products

Aims and Purposes of Design and Technology

Design and technology offers opportunities for children to:

- Communicate their ideas and thoughts in a variety of ways
- Understand and apply the principles of nutrition and learn cooking skills.
- Develop 'iterative' designing, making skills and life skills;
- Develop knowledge and understanding;
- Develop their capability to create high quality products through combining their designing and making skills with knowledge and understanding;
- Nurture creativity and innovation through designing and making;

- Design, make and evaluate their own and pre-made products within a variety of contexts and with different users in mind.
- Develop an understanding of technological processes, products, and their manufacture, and their contribution to our society.

Design and Technology Objectives

In Design and Technology, children acquire and apply knowledge and understanding of:

- Cooking and Nutrition
- Textiles
- Electrical and mechanical components
- Use of materials
- Construction
- Health and safety.

Children:

- develop designing skills, including generating and developing ideas, clarifying a task, creating design proposals, communicating ideas, planning and evaluating;
- acquire and refine the practical skills associated with making, including working with materials and components, tools and processes, e.g. planning, measuring and marking out, cutting and shaping, joining and combining, finishing, and evaluating;
- apply scientific skills, e.g. predicting and fair testing;
- apply mathematical skills, e.g. measuring to an appropriate number of decimal places, drawing and interpreting tables, graphs and bar charts;
- apply ICT skills, e.g. making things happen by the use of control, handling information through the use of a database or spreadsheet;
- apply art skills, e.g. investigating texture and colour or recording visual information.

Organisation

The Design and Technology scheme of work reflects the changes in the National Curriculum from 2014.

The curriculum will provide children with the opportunity to develop their design and technology capabilities through focused, practical tasks in which they learn and practice particular skills and acquire knowledge.

The children will be engaged in activities to investigate, disassemble and evaluate simple processes and products.

Teachers are responsible for the classroom organisation of Design and Technology activities, which will allow for differentiation of task by resource and outcome.

The focus for each year group can be as follows.

Y1/Y2
Sliders and Levers
Freestanding Structures
Preparing Fruit and Vegetables
Templates and Joining
Wheels and Axels

Y3/4
2D shape to 3D product
Healthy and Varied Diet
Levers and linkages
Shells structures
Simple circuits and switches

Y5/6
Celebrating Culture and Seasonality
Combining different fabric shapes
Frame Structures
More Complex Circuits
Pulleys or Gears

Language and communication

Children:

- develop language skills through questioning, describing and explaining, presenting their own ideas using different kinds of writing suitable for different audiences and through discussion, e.g. of their ideas, of existing products, and of their work and that of others;

- use technological, scientific and mathematical language including appropriate technical vocabulary and drawing, e.g. diagrams and charts, to communicate ideas and findings;

- develop drawing skills, e.g. sketching and formal drawing, and practise specific skills in relation to symbols and conventions;

- seek information and data, and determine what is valuable and what can be used in their work, e.g. nutritional information, research results, trend analysis;

- read non-fiction texts and extract information e.g. from reference books, CD-ROM's and the Internet;

- use correct and precise language.

Values and attitudes

Children:

- work both independently and with others, listening to others' ideas and treating these with respect;
- can be creative, flexible and show perseverance;
- critically evaluate existing products, their own work and that of others;
- develop a respect for the environment and for their own health and safety and that of others;
- recognise the strengths and limitations of a range of technologies and appreciate which are appropriate for particular situations;
- develop their cultural awareness and understanding and appreciate the value of differences and similarities;
- develop an understanding that all people are equal regardless of age, race, gender or ability and that there needs to be alternative solutions to meet the needs of individuals and groups of people;
- find enjoyment, satisfaction and purpose through designing and making; apply value judgements of an aesthetic, economic, environmental, moral, scientific development; creative development and knowledge and understanding of the world.

Progression in Design and Technology at Key Stages 1 and 2

Features of Progression

Progression in Design and Technology can be characterised by:

- an increase in knowledge, skills and understanding;
- moving from familiar to unfamiliar concepts;
- meeting needs which demand more complex or difficult solutions;
- an increase in a child's own understanding of their learning.

Building on Children's Previous Experience

Many children will have attended nursery and reception classes where they will have had opportunities to find out and learn about the world they live in. These experiences are likely to have included:

- asking questions about how things work, e.g. everyday objects, people, the environment;
- talking about what they are doing and what they have discovered;
- learning about a variety of customs and cultures;
- responding to drawings and pictures and drawing their own;
- investigating and using a variety of construction kits, materials, tools and products;
- using a range of materials to express ideas;

- exploring colour, shape, texture and form;
- selecting their own resources and tools for specific tasks/activities;
- developing making skills, e.g. cutting, folding, mixing, joining, and building for a variety of purposes;
- handling appropriate tools and construction materials safely and with increasing control.

At the early stages of developing capability, children should be able to:

- generate and develop ideas through talking about what their design has
- to do, handling materials and, where appropriate, drawing;
- increasingly take account of people's needs and wants;
- reflect more on their ideas;
- draw what they have made;
- recognise and begin to select suitable tools and materials;
- apply their previous knowledge and experience;
- suggest achievable ways forward and begin to suggest improvements to their own models.

As children make progress, they should:

- become more involved in finding out information useful to their designing and use their experience of products and applications as the stimulus for ideas;
- use 2D and 3D models to try out and develop ideas as they become more reflective about their designs;
- suggest an increasing number of achievable ways forward and develop simple plans which take into account the resources available;
- start combining and shaping materials to create products which meet their intentions;
- use tools safely and with increasing accuracy.

As children make further progress, they should:

- use a variety of information sources for their research, and set criteria for their designs, which increasingly take account of the views and preferences of the intended user;
- become more familiar with techniques, eg brainstorming and product analysis to generate ideas, and have a clearer sense of priorities in their design proposals;
- use a range of modelling techniques and be able to justify the decisions they make;
- plan and evaluate in a more considered manner, and show a greater awareness of constraints and the implications of their designs;
- draw upon a greater range of techniques and skills to create quality products for identified purposes;
- become increasingly competent at matching how they work to the materials and the task.

Expectations

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Broad issues of progression can be expressed as expectations for each key stage. The following expectations are set out in Maintaining breadth and balance at key stages 1 and 2.

By the end of key stage 1, most children will be able to:

- use a range of materials to design and make simple products;
- select materials, tools and techniques and explain their choices;
- understand simple mechanisms and structures;
- measure, assemble, join and combine materials in a variety of ways using basic tools safely;
- investigate and evaluate simple products, commenting on the main features.

By the end of key stage 2, most children will be able to:

- use knowledge and understanding of a range of materials, components and techniques to design and make quality products;
- evaluate work as it develops and, if necessary, suggest alternatives;
- produce designs and plans which list the stages involved in making a product, and list tools and materials used;
- accurately measure, mark, cut, join and combine a variety of materials,
- working safely and recognising hazards to themselves and others;
- understand the use of electrical and mechanical systems and more complex
- structures;
- evaluate what is or is not working well in a product.

Equal opportunities

We believe that it is important for all children to experience the range of design and technology activities. We will use opportunities within design and technology to challenge stereotypes.
All children will be encouraged and supported to develop design and technological capability through a range of materials. We recognise the importance of identifying the specific difficulties that individual children might have in teaching and organisational strategies can be adopted.

Health and Safety

The school agrees to abide by statutory health and safety guidelines as outlined by the LEA. Regular checks will be undertaken to ensure compliance with legal requirements.

In general, teachers will always teach the safe use of tools and equipment and insist on good practice. Children will be taught to return tools to the technology cupboard when not in use.

Cool melt glue guns will be used by Key Stage 2 children under supervision only when there is no other appropriate joinery technique.

Food-hygiene and safety

Food will be bought and used on the day it is needed. Teachers and adult support staff will oversee that cupboards, table tops, cooker etc. are clean and in working order. Appropriate clothing will be worn by adults and children when necessary (aprons, disposable gloves etc) and they are always to follow strict hygiene principles. Hands are to be washed using anti-bacterial hand-wash before the preparation of any foods.

Cross curricular themes and P.H.S.E

Design and Technology involves children drawing upon knowledge and skills from other curriculum areas in particular from other curriculum areas in particular from SCIENCE, HISTORY, GEOGRAPHY, ART, MATHEMATICS and ENGLISH.

In Design and Technology children will be encouraged to work in their peer groups so that they develop skills of co-operation, discussion and social interaction.

Health and safety issues remain vital areas for discussion in all projects.

Resource Management

The school:

- is committed to reviewing the position and use of technology resources;
- will ensure the efficient deployment of existing resources;
- is committed to updating and renewing their replacement when necessary, considering further purchasing to meet future needs.

Role of the co-ordinator

- lead the development of design and technology on the school
- provide guidance to individual members of staff
- keep up to date with local and national developments in design and technology and disseminate relevant information
- regularly update staff on new tools, materials etc.
- review and monitor the success and progress of the planned units of work
- order stock linked to the planned units of work at the end of each term
- be responsible for the organisation and maintenance of design and technology resources.

Assessment

- The class teacher will assess each project against the National Curriculum level descriptors
- The class teacher will report individual progress to parents at the end of each academic year
- The class teacher will present evidence of children's development collecting photographic and practical work of each project undertaken.
- The class teacher will complete an evaluation sheet every half term, providing feed back to the Design and Technology Co-ordinator.