Together in God's love, we learn, inspire and grow

DT Policy

This policy has been adopted by the governing body
of
St Andrews' C of E Primary School.
It will be reviewed annually or as required.

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Signed: P.Dwan Deputy Head

At St Andrews we believe Design and Technology prepares children to take part in the development of today's rapidly changing world. Creative thinking encourages children to make positive changes to their quality of life. The subject encourages children to become independent and creative problem-solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond by developing ideas and eventually 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 industrial practices. This allows them to reflect on and evaluate present and past Design and Technology, its uses and its impacts. Design and Technology helps all children to become discriminating and informed consumers and potential innovators.

National Curriculum Aims

The national curriculum for Design Technology aims to ensure that all pupils:

- to develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making (evaluation);
- to enable children to talk about how things work, and to draw and model their ideas;
- to encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures;
- to develop an understanding of technological processes, products, and their manufacture, and their contribution to our society;
- to foster enjoyment, satisfaction and purpose in designing and making.

When planning and teaching DT lessons at St Andrew's, we ensure that children are experiencing one of the 4 themes as stated in the National Curriculum. These include:

- Developing, Planning and communicating ideas
- Materials and Textiles
- Cooking
- Mechanics and construction

Links to St. Andrews' whole school curriculum intent:

Whole School Curriculum intent

Our UNIQUE curriculum is designed to recognise and have a solid understanding of children's prior learning, providing knowledge and learning experiences which build resilience and critical thinking.
Central to this is excellent skills in Reading – the essential key to the whole curriculum.
We provide opportunities to engage learning in a fun and nurturing way and every child is recognised as a unique individual.
We plan and provide a clearly mapped out curriculum which results in good quality outcomes.
We model and promote positive attitudes to learning which reflect the values of our Christian school, enabling children to take responsibility for their lives. Children leave St Andrew's with a sense of belonging to an outward looking community where opportunities and aspirations are unlimited.
At St Andrew's we ensure that equality is embedded in all that we do.

DT Intent

Understanding - All St Andrew's children are encouraged to design, create their own unique mediums. Design Technology is planned to ensure prior learning, knowledge, skills and vocabulary are revisited and developed in each lesson. Our teachers track and use children's prior learning, ensuring progression of knowledge and skills through the KSV documentation and through summative assessment opportunities in all lessons. Retrieval tasks, knowledge organisers and working walls are used in every lesson to revisit and embed key vocabulary, knowledge and skills.

Nurturing - Every child at St Andrew's C of E Primary School, is to leave with a strong core of Design Technology knowledge, learnt and secured through a range of different experiences. Each unit will be explored in an investigative approach, and the knowledge 4 developed appropriately as they move through the school. Our principal aim is to develop the children's knowledge, skills and understanding, whilst encouraging all learners to see themselves as designers. We recognise the fact that we have children of differing designing ability in all our classes and so we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. Within an DT lesson, children have opportunities to explore and use a variety of familiar and unfamiliar mediums. We encourage the children and promote a learning environment where the children feel confident to try out new techniques with the knowledge that it is OK to find things difficult, but to never give up. DT is a subjective subject and everyone will have a different opinion on the end outcome.

Individual - We teach Design Technology to all children in a way that suits all individual needs. Design Technolgy forms part of the school curriculum policy to provide a broad and balanced education for all children. Through our Design Technology teaching, we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. We incorporate high order questions, to extend the most able children in Design Technology and allow for all St Andrew's designers to succeed in an individual way. Research suggests D&T is one of primary-aged children's favourite subjects. Projects on a Page maximises their enjoyment by providing scope for teachers to meet children's needs and interests through creative and motivating projects within a range of contexts.

Quality - When planning and teaching Design Technology lessons at St Andrew's, we adopt the 'Project on a Page' scheme of work which aims:
All children will use their creativity and professional judgment to plan and teach successful D&T projects each term.
To help schools cover the National Curriculum requirements.
To provide helpful sketches, diagrams, tips and techniques that will make teaching D&T easier and more rewarding.
To ensure that all the D&T taught in your school enables children to design, make and evaluate functional products with users and purposes in mind.

Unlimited aspirations - Every pupil is a St Andrew's designer and will leave with a strong core of Design Technology knowledge, learnt and secured through a range of different experiences. Each unit will be explored in an investigative approach, and the knowledge developed appropriately as they move through the school. Studying Design Technology stimulates curiosity, fosters creativity and equips children with transferable skills they need in life beyond school.

Equality - We recognise the fact that we have children of differing scientific ability in all our classes and so we provide suitable learning opportunities for ALL children by matching the challenge of the task to the ability of the child. We create an environment where children do not fear speaking out and giving their opinion. As their confidence grows, they look for patterns, use logical reasoning, suggest solutions and try out different approaches to problems. Projects on a Page ensures that D&T makes a high-quality contribution to a broad and balanced primary curriculum, helping to raise standards in English and mathematics. Research suggests D&T is one of primary-aged children's favourite subjects. Projects on a Page maximises their enjoyment by providing scope for teachers to meet children's needs and interests through creative and motivating projects within a range of contexts.

Long term planning and curriculum design:

The DT curriculum is coherently planned and sequenced through the clearly defined National Curriculum. Knowledge skills and vocabulary are mapped out and matched to the desired outcomes in the DT scheme that we use 'Projects On A Page.'

DT Implementation

DT at St Andrew's …

Teaching and Learning including Planning and Organisation

The school uses a variety of teaching and learning styles in DT lessons. Our principal aim is to develop the children's knowledge, skills and understanding in design technology. We do this best through a mixture of whole-class teaching and individual/group activities. Teachers draw attention to good examples of individual performance as models for the other children. They encourage children to evaluate their own ideas and methods, and the work of others, and say what they think and feel about them. We give children the opportunity within lessons to work on their own and collaborate with others, on projects in two and three dimensions and on different scales. Children also have the opportunity to use a wide range of materials and resources.

The scheme of work 'Project On A Page' enables class teachers to plan exciting and progressive DT lessons. Lessons may be taught as a discrete subject or may form part of a wider topic approach. DT time is managed effectively and creatively. DT is taught for three half terms per year and art is taught during the other three terms.

Projects on a Page is based on the six essentials of good practice in D&T. These need to be in place in teachers' planning to ensure children's learning is genuinely design and technological in nature. They are consistent with the National Curriculum requirements and should be applied whenever children are designing and making products:

- **User** – children should have a clear idea of who they are designing and making products for, considering their needs, wants, interests or preferences. The user could be themselves, an imaginary character, another person, client, consumer or a specific target audience.
- **Purpose** – children should know what the products they design and make are for. Each product should perform a clearly defined task that can be evaluated in use.
- **Functionality** – children should design and make products that function in some way to be successful. Products often combine aesthetic qualities with functional characteristics. In D&T, it is insufficient for children to design and make products which are purely

aesthetic.

• **Design Decisions** – when designing and making, children need opportunities to make informed decisions such as selecting materials, components and techniques and deciding what form the products will take, how they will work, what task they will perform and who they are for.

• **Innovation** – when designing and making, children need some scope to be original with their thinking. Projects that encourage innovation lead to a range of design ideas and products being developed, characterised by engaging, open-ended starting points for children's learning.

• **Authenticity** – children should design and make products that are believable, real and meaningful to themselves i.e. not replicas or reproductions or models which do not provide opportunities for children to make design decisions with clear users and purposes in mind.

The six essentials are embedded into the Project Planners, each of which has suggestions for users and purposes, and a list of authentic products that children could design and make. Each Planner has a star diagram that enables you to evaluate the overall potential of the project to ensure each of the D&T essentials has been addressed. Different projects will have a different profile. Schools may wish to evaluate projects in long-term planning to ensure each essential is adequately addressed over the course of a year or key stage.

All planning is linked to the following National Curriculum subject content:

Key stage 1

Pupils should be taught:

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be 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, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should 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 [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.

DT language

DT lessons provide opportunities for pupils to communicate and develop their key vocabulary through:

- Prior assessment of key vocabulary for the programme of study. Prior assessment is carried out at the beginning of every unit, and again at the end of the unit to measure progress. Understanding of key art vocabulary is assessed through observation by the Class Teacher.
- Essential vocabulary at the beginning of every lesson and insisting on its use throughout

- Modelling by class teachers of key DT vocabulary
- Plenaries which give a further opportunity to assess understanding through pupil explanations.

Design Technology Books

Each child, from Year 1 to Year 6, has their DT book which moves through the year groups with them. Children are encouraged to develop the habit of using their DT books for:

•Recording, exploring and storing visual and other information e.g. notes and selected materials which can readily be retrieved and used as reference.
•Working out ideas, plans and designs.
• Reference – as they develop ideas for their work.
• Looking back at and reflecting on their work, reviewing and identifying their progress.
•As an ongoing record of their learning and achievement, which they can use to further develop their ideas, skills and understanding.

Design Technology in EYFS

As with all other areas of learning, the teaching and learning of DT in our Reception class, takes place both indoors and outdoors through a wide range of practical and hands on activities. The staff use their knowledge and expertise to plan for a high-quality learning environment which provides children with lots of opportunities to explore different aspects of DT indirectly through activities that encourage the children to explore and create. The children have a wide range of structured play resources available to them throughout the year – this is known as continuous provision. As the year progresses, children in Reception record their outcomes in books which prepares them for the learning in Year 1.

Sequence of Lessons at St.Andrew's

All units of work with follow the same sequence of lessons which is set out below.

- **Lesson one**- Investigate and evaluative activities
- **Lesson two**- focused tasks – e.g: looking at examples of levers
- **Lesson three/four**- design product
- **Lesson five/six-** make product
- **Lesson seven-** evaluate product

St Andrews's Lesson Structure:

1) **Prior assessment:** assessment through teacher observation, based on the prior knowledge the children have from previous learning.

2) **Recap** previous learning and vocabulary.

3) **Introduce new knowledge and/or skill**: introduce the main skill or concept for the lesson.

4) **Apply the new knowledge and/or skill :** There's a mixture of short tasks, explanation, demonstration, evaluations or practical activities.

5) **Develop the new knowledge and/or skill:** deepen understanding of the skill or concepts through a task based on 1 of the 6 themes that children should be familiar with across the primary school.

6) **Plenary:** Recap and reinforce learning, address misconceptions, celebrate success.

In both Key Stage 1 and 2, on average, children have at least 2 recorded pieces of work in their DT book each half term. This may include photographs, designs, writing evaluations, producing final outcomes etc.

How the DT curriculum meets the needs of all pupils, particularly disadvantaged pupils and SEND pupils:

We have designed our curriculum to meet the needs of all our pupils in line with the school key priorities.

All class teachers know who their disadvantaged and SEND pupils are and can target them for specific questioning, support and resources in lessons. Learning opportunities within DT lessons cater for all needs and are kinesthetic, visual and auditory. Pupils can also be targeted for TA support and there are also opportunities for children of different abilities to work together. SENCO offers advice and support which enables teachers to plan activities that meet the needs of all children.

DT Impact

Overview of DT assessment procedures, including the expectations of teachersusing both formative and summative assessment:

Formative assessment: We assess children's work formatively in DT through observations and marking. These assessments inform the class teacher's planning for future lessons.

Summative assessment: At the end of a unit of work (half termly) the class teacher makes a judgement about the children's achievements, and this information is then recorded and fed back to the DT Subject Leader. The DT Subject Leader carries out a termly overview of the progress of DT.

At the start of the year, key objectives are identified that will be assessed in each unit and opportunities for assessment are planned for. Wherever possible, children are the first to assess their learning.

Both formative and summative assessment may take the form of a practical activity, a concept map or a written assessment. The teacher uses these assessments to inform reports to parents and the next class teacher at the end of the year, and to carry out termly teacher assessment at the end of each unit of work.

Monitoring arrangements

Design Technology Book Scrutiny: These are done termly by the DT lead and a member of SLT. There is a clear focus during the book scrutiny and feedback is given to class teachers in written form. Subject leader feeds back to SLT and arranges for training for staff where necessary.

Lesson Observations/drop in: The DT lead and if possible a member of SLT do this termly, feeding back to class teachers and SLT.

Medium Term Planning: Medium Term Planning is provided for the Subject Lead at the beginning of each half term. This planning is adapted and developed throughout the half term and updated where necessary at the end of each unit of work.

Pupil Voice: DT lead speaks to a wide variety of children across all year groups, termly to measure the children's understanding of artists being taught, their attitude and their level of enjoyment.

How the subject lead keeps their own subject knowledge up to date, and how they ensure staff subject knowledge is also up to date;

We aim to develop and enhance our subject lead's personal interest and passion in DT through:

1. networking opportunities through LDST, Sefton and Madcos,
2. engagement with the curriculum lead

We aim to ensure all staff's Design Technology knowledge is up to date through:

1. staff meetings - twice yearly
2. provision of effective resources
3. engagement with subject lead