TWEEDDALE PRIMARY SCHOOL

POLICY FOR

DESIGN & TECHNOLOGY

Review of the Policy

This policy provides guidance on teaching and learning at Tweeddale Primary School. It reflects the views of teaching staff and was agreed by the Local Governing Body on **10/03/21** .

The policy will be reviewed by the Head Teacher annually and by the governing body in **March 2024** or earlier if required. The implementation of the policy is the responsibility of the staff and will be monitored by the Head Teacher, Senior Management and individual curriculum coordinators.

Signed……. Date…….
Headteacher

Signed…….. Date…….
Chair of Governors

Design and Technology Policy

Introduction

This document is a statement of the aims, principles and strategies for the teaching and learning of Design and Technology at Tweeddale Primary School. Design and Technology prepares pupils to participate in tomorrow's rapidly changing technologies. They learn to think and intervene creatively to improve quality of life. The subject calls for pupils to become autonomous and creative problem solvers, as individuals and as members of a team. Through Design and Technology all pupils can become discriminating and informed users of products and become innovators.

'Design and Technology is about making things that people want and work well. Creating these things is hugely exciting, it is an inventive fun activity.'
James Dyson – inventor.

Aims and Objectives

The National Curriculum for design and technology aims to ensure that all pupils:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- Critique, evaluate and test their ideas and products and the work of others
- Understand and apply the principles of nutrition and learn how to cook.

Objectives

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. Regardless of gender, ethnic origin or ability, we specifically aim to ensure that all pupils:

• develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
• critique, evaluate and test their ideas and products and the work of others
• understand and apply the principles of nutrition and learn how to cook.

The Foundation Stage
We encourage the development of skills, knowledge and understanding that help Foundation children make sense of their world as an integral part of the school's work. This learning forms the foundations for later work in 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. We provide a range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children's interest and curiosity.

Key stages 1 & 2
The main changes to Design Technology include:
• The focus of mouldable materials is now a major part of the curriculum in both key stages
• There is an increased emphasis on computing in the DT curriculum
• Textiles plays a major part across the school
• In DT a greater time is given to developing ideas and prototypes.
• The design cycle has become more explicit and more emphasis is now placed on regular evaluations.
• Production of food for consumption

Organisation
Resources are organised in the D and T cupboard upstairs. The Design and Technology co-ordinator will:

1. Lead the development of Design and Technology in the school;
2. Be responsible for the location, management and access to material and equipment;
3. Manage the budget for the subject area and order resources;
4. Oversee the planning to ensure progression and continuity is taking place;
5. Provide guidance to individual members of staff and/or arrange for inset training;

Teachers will be responsible for:

1. Planning appropriately for the needs of all learners;
2. Preparing materials
3. Demonstrating their own skills
4. Open- ended discussion to overcome difficulties;

5. Supervising groups and individuals;

There is a selection of class-based and centrally-stored materials and tools to ensure that all children have the necessary resources to access the subject and to make informed choices. The DT budget covers the costs of materials and the replacement of tools, although we do occasionally ask children to bring some materials from home if they can. The school will provide resources to any children who are unable to do this so as to allow all children to have the same opportunities.

Planning

We carry out the curriculum planning in Design and Technology in three phases: long-term, medium-term and short-term. The long-term plan maps out the units covered in each term during the key stage. We plan the activities in Design and Technology so that they build on the prior learning of the children. We give children of all abilities the opportunity to develop their skills, knowledge and understanding, and we also build planned progression into the scheme of work, so that the children are increasingly challenged as they move through the school. DT will be taught on designated DT days each half term. This allows for strong links to be made between the different processes of the project.

Assessment

Work in Design and Technology may be assessed through judgements of recorded work but a large proportion of assessment is involved with practical application and language development involving discussion, description and explanation skills. Evidence may be seen in DT project books, on 2-D displays and most commonly through 3-D models and photographs of children's work. These will be saved on the drive.

Information on a child's progress in Design and Technology will be communicated to parents in a written report at the end of each academic year.

Key stage 1 &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 and school, gardens and playgrounds, the local community, industry and the wider environment].

At the end of Key Stage 1 most pupils will be able 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

By the end of key stage 2, most children will be able 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 designs.

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

Food Hygiene and Safety Issues

We enable pupils to have access to the full range of activities involved in learning Design and Technology. Where children are to participate in activities outside the classroom, for example in a museum or on a factory

trip, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.
Teachers teach the safe use of tools and equipment and insist on good practice prior to starting the making part of a task. However, safety issues do arise when teaching this subject. These include:
• The use of electrical equipment such as glue guns
• The handling of food stuffs
• The use of cooking appliances, including ovens and hobs
• Contact with sharp objects including wood,
It is the duty of all staff to:
• Recognise and assess the hazards and risks to themselves and others when working with food and other materials
• Take action to control these risks and hazards
Teachers should be aware of the following:
• Children must not use cooking appliances unless under direct supervision from a responsible adult. The portable oven may be used in an area away from the children or with a barrier between at the teacher's discretion
• Saws and other sharp objects (nails, needles, craft knives, etc) must be used under direct supervision. The teacher will make a judgement on the undertaking of activities involving sharp and/or potentially dangerous equipment depending on the age/ability of the children in his/her class. Some activities may be undertaken by an adult or in a small group or one to one situation as appropriate
• Perishable foodstuff must be stored sensibly and refrigerated if necessary. Care must be taken to ensure food is not used after the given sell by date
• Teachers and adult support staff must oversee that cupboards, table

Monitoring and Reviewing
The Design and Technology co-ordinator is responsible for monitoring the standards of children's work and the quality and breadth of teaching. The coordinator supports colleagues in the teaching of Design and Technology by informing them of current developments in the subject and by providing a strategic lead and direction for the subject in school.
The co-ordinator is also responsible for evaluating strengths and weaknesses in the subject and identifying areas for improvement and development. Subject Leader needs to review medium term plans, monitor children's work and observe teaching in the subject.

Links to Other Curriculum Areas

English

Design and Technology contributes to the teaching of English in our school by providing valuable opportunities to reinforce what the children have been doing during their English lessons. Discussion, drama and role-play are important ways that we employ for the children to develop an understanding of the fact that people have different views about 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.

Mathematics

In Design and Technology there are many opportunities for children to apply their mathematical skills through choosing and using appropriate ways of calculating measurements and distances. They learn how to check the results of calculations for reasonableness, and learn how to use an appropriate degree of accuracy for different contexts. Children learn to measure and use equipment correctly. They apply their knowledge of fractions and percentages to describe quantities and calculate proportions.
The children will carry out investigations and in doing so they will learn to read and interpret scales, collect and present data, and draw their own conclusions. They will learn about size and shape, and make practical use of their mathematical knowledge, in order to be creative and practical in their designs and modelling.

Personal, Social and Health Education (PSHE) and Citizenship

Design and Technology contributes to the teaching of PSHE and Citizenship. We encourage the children 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, and they also learn, through their understanding of personal hygiene, how to prevent disease from spreading when working with food.

Spiritual, Moral, Social and Cultural Development

The teaching of Design and Technology offers opportunities to support the social development of our children through the way we expect them to work with each other in lessons. Our 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 cooperative 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.

Design and Technology and Computing

Computing enhances the teaching of Design and Technology, wherever appropriate, in all key stages. Children may use software to enhance their skills in designing and making things. The children also use computing to collect information and to present their designs through a range of design and presentation software.

Health and Safety

Teachers will carry out a risk assessment before each activity, considering their tools, materials and equipment being used. Before undertaking practical tasks, children should be taught to use tools correctly in order to ensure safety.

Agreed at the Governing Body meeting dated
Signed _____