

Lowton West Primary School



Design and Technology Policy

Policy reviewed by H Olson

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Ratified by Governing Body:

Mr B. Cunliffe (Chair of Governors)

Mrs J. Westhead (Headteacher)

Review date: Oct 2021

LOWTON WEST PRIMARY SCHOOL
DESIGN AND TECHNOLOGY POLICY



Aiming High Together

School Vision

To inspire, achieve and succeed, we will aim high and build dreams and futures together.

Mission Statement

- 1.1 Providing the highest quality education, care and support for the whole school community.
- 1.2 **Our mission statement is based on RESPECT:**
- 1.3 **R = Recognising the needs of the individual child**
- 1.4 **E = Ensuring a unique and engaging curriculum**
- 1.5 **S = Supporting each other to learn and achieve**
- 1.6 **P = Passionate about providing the highest quality education**
- 1.7 **E = Encouraging creativity, self – expression and imagination**
- 1.8 **C = Creating confident, resilient, life – long learners**
- 1.9 **T = The voice of everybody is heard**

All the above statements help us to understand how we can all make a positive contribution to the school and the wider community.

We will do this through our core values:

- Respect
- Resilience
- Kindness
- Confidence

We also, at Lowton West Primary School, strive to develop and uphold British Values. The five British values that the Government has identified for schools to focus on are:

- Democracy
- The Rule of Law
- Individual liberty and mutual respect and tolerance of those with different faiths and beliefs
- Developing personal and social responsibility
- Respect for British Institutions

There are more details on how our school demonstrates and develops these British Values in our British Values Policy and on our website.

Design and Technology Curriculum Statement



Aiming High Together

Intent

At Lowton West, we believe Design and Technology is an inspiring, rigorous and practical subject which allows children to be creative and imaginative when working as individuals or as part of a team. At Lowton West, we give all children the opportunity to design and make a variety of products that solve real and relevant problems within a variety of contexts, considering their own needs and the needs of others', their wants and values. We aim to provide all children with a broad range of subject knowledge in both Key Stage 1 and Key Stage 2 and draw on disciplines such as mathematics, science, engineering, computing and art. Evaluating and reflecting on past and present design and technology, gives children an understanding of its uses, impact and effect on daily life and the wider world. Designers at Lowton West are innovators with a desire to produce high-quality products.

Implementation

Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in an iterative process of designing and making. The children work in a range of relevant contexts. For example: home and school (gardens and playground), culture, enterprise, industry and the wider community.

When designing and making, the children are taught to:

Design

- Use research and develop the design criteria to inform the design of innovative functional, appealing products that are fit for purpose, aid at particular individuals or groups
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross - sectional diagrams, prototypes, pattern pieces and computer - aided design

Make

- Select from and use a wider range of tools and equipment to perform practical tasks accurately. For example: cutting, shaping, joining and finishing
- 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
- Understand and use electrical systems in their products
- Apply their understanding of computing to program, monitor and control their products

Impact

At Lowton West, we develop the creative and practical expertise needed to perform everyday tasks. We ensure that all children learn to take risks as designers that will enable them to become resilient and participate successfully in an increasingly technological world.

In Key Stage 1, all children will begin to build a repertoire of knowledge that will further progress and be applied across Key Stage 2 when designing and making high- quality prototypes and products for a wide range of users. During the design process, designers at Lowton West have the opportunity to critique, evaluate and test their ideas and products as well as the work of others to enable them to understand the most suitable materials to use and consider any further developments and improvements for future products. As well as understanding and applying the principles of nutrition, children at Lowton West will learn how to cook; through designing and making a range of products and through using equipment that is age appropriate for both key stages.

Legal framework

This policy has due regard to statutory guidance including, but not limited to, the following:
DfE 'National curriculum in England: Design and Technology programmes of study' (September 2013)

DfE (2017) 'Statutory framework for the Early Years Foundation Stage'
'Development Matters in the EYFS'

Roles and responsibilities

The Design and Technology Leader is responsible for:

- Preparing policy documents, curriculum plans and schemes of work for the subject.
- Reviewing changes to the national curriculum, making other staff members aware of any changes and advising on their implementation.
- Monitoring the learning and teaching of design technology, providing support for staff where necessary.
- Ensuring the continuity and progression from year group to year group.
- Encouraging staff to provide effective learning opportunities for pupils.
- Helping to develop colleagues' expertise in the subject.
- Organising the deployment of resources and carrying out an annual audit of all design technology resources.
- Liaising with teachers across all phases and year groups.
- Communicating developments in the subject to all teaching staff.
- Leading staff meetings and providing staff members with the appropriate training.
- Organising, providing and monitoring CPD opportunities in the subject.
- Ensuring common standards are met for recording and assessment.
- Advising on the contribution of design technology to other curriculum areas, including cross-curricular and extra-curricular activities.
- Collating assessment data and setting new priorities for the development of design technology in subsequent years.
- Helping staff to plan future lessons and assessments and advising teachers on teaching methods they may wish to explore.
- Encouraging staff and pupils to be creative.

Teaching staff will be responsible for:

- Adhering to and acting in accordance with this policy.
- Ensuring progression of pupils' designing skills, with due regard to the national curriculum.
- Planning lessons effectively, ensuring a range of teaching methods are used to cover the content of the national curriculum.
- Liaising with the design technology subject leader about key topics, resources and supporting individual pupils.
- Monitoring the progress of pupils in their class and reporting this on an annual basis.
- Plan and deliver interesting and engaging lessons that adhere to the national curriculum.

- Provide equality of opportunity through their teaching approaches and methods.
- Keep up-to-date assessment records.
- Ensure pupils' development of skills and knowledge progresses through their learning and understanding of D&T.
- Set pupils suitable targets based on prior attainment.
- Maintain an enthusiastic approach to D&T.
- Undertaking any training that is necessary in order to effectively teach the subject.

Early Years Provision

Activities and experiences for pupils will be based on the seven areas of learning and development, as outlined in the DfE's 'Statutory framework for the Early Years Foundation Stage'. Provision for Early Years' pupils focuses on four specific areas:

- Literacy
- Maths
- Understanding the world
- Expressive arts and design

All activities will adhere to the objectives set out in the framework.

In particular, design technology will plan for children to experience creative opportunities and develop key skills as well as developing fine motor skills and learning how to plan, design and produce a finished product.

The National Curriculum

The school aims to assist pupils in achieving attainment targets set out in the national curriculum. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills, and processes specified in the national curriculum. Pupils will learn a broad range of subject knowledge and draw on disciplines such as maths, science, engineering, computing and art.

In accordance with the national curriculum, the school 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 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.

By the end of KS1, 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 and mock-ups and, where appropriate, ICT.

Make

- Select from and use a range of tools and equipment to perform practical tasks, e.g. 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, e.g. levers, sliders, wheels and axles, in their products.

Through a variety of creative and practical activities, pupils will be taught the knowledge, understanding and skills needed through a variety of creative and practical activities. They should

work in a range of relevant contexts, e.g. the home, school, leisure, enterprise, industry and the wider environment.

By the end of KS2, pupils 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 design.

Make

- Select from and use a wider range of tools and equipment to perform practical tasks accurately, e.g. cutting, shaping, joining and finishing.
- 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 D&T 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, and linkages.
- Understand and use electrical systems in their products, e.g. 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 will be taught how to cook and apply the principles of nutrition and healthy eating. 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.

By the end of KS1, pupils will be able to:

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

By the end of KS2, pupils will be able 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.

Cross-curricular links

Design and Technology contributes to the teaching of a number of other subjects in school.

English

D&T offers the opportunity to reinforce what pupils have been learning during English lessons. Discussion, drama and role-play are important methods that the school employs to help pupils develop an understanding of people's different views and opinions of D&T and society. Evaluating products requires pupils to articulate and formulate their ideas to compare their views with other pupils'; through discussion, pupils will learn to justify their own views and clarify their design ideas.

Maths

D&T will assist pupils in learning about shape and size and will make use of what they have already learned in maths lessons. Pupils will carry out investigations – by doing this, they will learn to read and interpret scales, collect and present data, as well as draw their own conclusions.

PSHCE

D&T lessons will be used to teach pupils how to discuss their own work and the work of others; in addition, pupils will be taught about health and hygiene, including diets, and how to prevent disease from spreading when working with food.

Spiritual, moral, social and cultural (SMSC) development

Teaching D&T offers opportunities to support the social development of pupils through the way they are expected to work with each other in lessons. D&T helps pupils to develop a respect for other pupils' abilities. Working in groups encourages collaboration and gives pupils the opportunity to learn from each other and share ideas and feelings.

Computing

Computing enhances the teaching of D&T and provides pupils with additional equipment, extending the possibilities for developing, sharing and recording their work.

Utilising ICT also benefits pupils by helping them collect information and present their designs and ideas through a range of design and presentation software.

Health and Hygiene

In order to maximise their learning experience, pupils are allowed full access to a wide range of materials in D&T lessons; however, health and safety concerns are inherent with D&T, including storing materials and tools, and the use of equipment.

Personal Protection Equipment (PPE); such as gloves, head protection, eye protection and hearing protection is made available to all pupils and teachers.

The risks of each task will be assessed by the **classroom teacher** and **D&T subject leader** before lessons and relevant PPE will be compulsory based on their decisions.

Equipment will be checked before the start of every lesson by the **classroom teacher**.

Pupils will be supervised at all times during D&T lessons.

All tools, such as glue guns, will be checked annually by the **D&T subject leader** and replaced accordingly. It is also the duty of staff to recognise and assess the hazards and risks associated when working with food and other materials.

All pupils will be taught how to use all equipment properly by the classroom teacher before doing so; similarly, pupils will also be fully briefed on the importance of how to correctly use equipment and tools.

Pupils are only allowed to use a lower temperature glue gun under close supervision. Glue guns will be considered alongside all viable alternatives such as adhesive tapes, blue tack and other fasteners, to ensure the most suitable materials are used for each project.

Perishable food will be stored sensibly and refrigerated if necessary. Care must be taken by teachers and teaching assistants to ensure food is not used after the given sell by date

If any cooking or food preparation is taking place in the classroom, all surfaces will be cleaned before and after use.

TAs may take a maximum of **ten** pupils to cook in the canteen.

Teachers and TAs will oversee that all cupboards, table tops and cookers are clean and in working order.

Correspondence will be sent to parents **one week** before cooking lessons to ensure pupils' allergies are taken into account.

Teaching and Learning

The school uses a variety of teaching and learning styles in D&T lessons, the main aim of these lessons is to develop pupils' knowledge, skills and understanding. Teachers will ensure pupils apply their knowledge and understanding when developing ideas, planning and making products, and then evaluating them.

The school aims to do this through a mixture of whole-class teaching, group work, and individual activities. Pupils are given the opportunity to work on their own and collaborate with others, listening to their classmates' ideas and treating these with respect.

Principles for effective teaching include:

- Setting tasks in the context of pupils' prior knowledge.
- Promoting active learning.
- Inspiring, exciting and motivating pupils to know more.

Strategies for effective teaching include:

- Ensuring the teaching methods used suit the purpose and needs of pupils.
- Providing a meaningful context and clear purpose when assigning tasks.
- Investigating, disassembly and evaluative activities.
- Using focussed practical tasks to help pupils make and evaluate products.
- Ensuring tasks are built on skills and understanding.

Planning

All relevant staff members are briefed on the school's planning procedures and requirements as part of staff training. Throughout Lowton West Primary School, design and technology is taught as a discrete lesson and as part of cross-curricular themes when appropriate.

Teachers will use the key learning content in the DfE's statutory guidance 'National curriculum in England: design and technology programmes of study'. Lesson plans will demonstrate a balance of interactive elements used in teaching, ensuring that all pupils engage with their learning. Long-term planning will be used to outline the units to be taught within each year group. Medium-term planning will be used to outline the vocabulary and skills that will be taught in each unit of work, as well as highlighting the opportunities for assessment.

Medium-term plans will identify learning objectives, main learning activities and differentiation and will be shared with and monitored by the design technology subject leader to ensure there is progression between years. Short-term planning will be used flexibly to reflect the objective of the lesson, the success criteria and the aim of the next lesson. Short-term planning is the responsibility of the teacher. This is achieved by building on their medium-term planning, taking into account pupils' needs and identifying the method in which topics could be taught. All lessons will have clear learning objectives, which are shared and reviewed with pupils. Lessons will follow the clear progression of skills across key stage one and two to fully embed children's learning.

Equal Opportunities

At Lowton West Primary school, we are committed to providing a teaching environment which ensures all children are provided with the same learning opportunities regardless of social class, gender, culture, race, special educational need or disability. Teachers use a range of strategies to ensure inclusion and also to maintain a positive ethos where children demonstrate positive attitudes towards others.

Support for specific individuals is well considered and planned for, with consideration given to how greater depth and further challenge can be provided for and demonstrated by children who require further challenge.

Assessment and reporting

Pupils will be assessed and their progression recorded in line with the school's Assessment Policy. Throughout the year, teachers will plan on-going creative assessment opportunities in order to gauge whether pupils have achieved the key learning objectives, working in line with the school's progression of skills documents. Pupils' D&T work may be assessed throughout the design process and by teachers judging recorded work. Teachers will also assess pupils':

- Talking to pupils and asking questions
- Discussing pupils' work with them
- Marking work against the learning objectives
- Observing practical tasks and activities
- Knowledge of tools, materials and equipment.

- Ability to record and communicate their design ideas in a clear manner.
- Ability to explain what they have created and how.
- Ability to use tools and materials safely and effectively.
- Ability to evaluate their work and the work of others.

In terms of summative assessments, the results of end-of-year assessments will be passed to relevant members of staff, such as the pupil's future teacher, in order to demonstrate where learners are at a given point in time. Parents will be provided with a written report about their child's progress during the summer term every year. These will include information on the pupil's attitude towards design technology, understanding of D&T terminology and the knowledge levels they have achieved. Verbal reports will be provided at Parents' Evenings during the school year. The majority of assessments will be conducted through observations and discussion.

Monitoring and Review

This policy will be reviewed on an annual basis by the design technology subject leader. The design technology subject leader will monitor teaching and learning in the subject at Lowton West Primary School, ensuring that the content of the national curriculum is covered across all phases of pupils' education. Any changes made to this policy will be communicated to all teaching staff.