Ludgershall Castle Primary School

Design and Technology Policy

Our shared vision for Ludgershall Castle Primary School is of a happy, vibrant learning community, improving together. We are working with pupils, parents and the wider community to create the supportive atmosphere of trust and mutual support in which we all thrive.

'Learn, Have Fun, Succeed' are carefully chosen words that encapsulate the aims of our school.

- ☆ We want learning and teaching to be fun for all
- ☆ We 'have a go' and try our best; we celebrate our successes
- ☆ We want to care for and respect everyone in our school; everybody matters
- ☆ We want school to be a safe place for everybody
- ☆ We know that learning is for life
- ☆ We all want to be good citizens

Vision

At Ludgershall Castle Primary School, design and technology provides the children with the opportunity to explore materials, investigate the ways in which materials can be joined and most importantly to use materials to create something new and unique. We aim to make our design and technology projects purposeful, fun and successful to reflect our school motto LEARN, HAVE FUN, SUCCEED. Design and technology projects are combined with other subjects to create cross curricular links around the termly topic.

National Curriculum

At Ludgershall Castle Primary School we base learning on the National Curriculum.

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.
Attainment targets
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.

Our Intent

We aim to provide a rich environment in which we encourage and value creativity. We want children to experience a wide range of activities that they respond enthusiastically to, using various knowledge and skills learnt in other subjects, for example science, and from previous learning in addition to newly learnt subject specific skills. We are committed to providing a teaching environment conducive to learning where each child is valued, respected and challenged regardless of ability, race, gender, religion, social background, culture or disability.

Our Implementation

At Ludgershall Castle Primary School, we follow a topic based curriculum approach and use the design and technology programmes of study, as set out in the National Curriculum, to plan meaningful activities. In addition, we use learning ladders at each key stage, to ensure progression of skills and continuity in learning from Year 1 to Year 6. In Early Years, the teachers plan activities based on the Early Learning Goals. Furthermore, we have ensured continuity, progression and repetition of skills, through a planned progression of topics, throughout the year groups. This ensures knowledge and skills are built on in a systematic way to make learning more meaningful.

We aim to ensure that from Early Years to Year 6 at Ludgershall Castle Primary School design & technology will provide an opportunity for all children to:

- plan, design, make and evaluate their ideas and products.
- be challenged to think critically and use problem solving skills.
- use their Literacy, maths, science, art and in some cases computing skills.
- build and apply a repertoire of knowledge, understanding and skills.
- use their imagination and work creatively.
- work independently and collaboratively.

Design and technology is taught for six weeks (half term) each term; it alternates with art and design.

Design and Technology in Early Years Foundation Stage

In Early Years, the Early learning Goals are used to plan, activities that provide opportunities in design and technology.

Design and Technology in Key Stage 1

Through a variety of creative and practical activities, pupils are taught the knowledge, understanding and skills needed to engage in the 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.

Cooking and nutrition in Key Stage 1

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. 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.

Pupils in Key Stage 1 should be taught to:

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

Design and Technology KS1

At Ludgershall Castle Primary School, we use learning ladders to ensure the development and progression of skills and knowledge within the National Curriculum.

Design, make, evaluate and improve (For all topics below)	Design appealing products that have a clear purpose and function for an intended user based on design criteria	
	Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups	
	Make products, refining the design as work progresses	
	Select from and use a wide range of materials and components according to their characteristics	
	Use software to design	
	Explore and evaluate a range of existing products	
	Evaluate their ideas and products against design criteria	
Take inspiration from design throughout history	Explore objects and designs to identify likes and dislikes of the designs	
	Suggest improvements to existing designs	
	Explore how products have been created	
Food	Use the basic principles of a healthy and varied diet	
	Understand where food comes from	
	Cut, peel or grate ingredients safely and hygienically	
	Measure or weigh using measuring cups or electronic scales	
	Assemble or cook ingredients	
Materials	Cut materials safely using tools provided	
	Measure and mark out to the nearest centimetre	
	Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling)	
	Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen)	
Textiles	Shape textiles using templates	
	Join textiles using running stitch	
	Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing)	
Electricals and electronics	Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage)	
Computing	Model designs using software	
Construction	Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products	
Mechanics	Create products using levers, wheels and winding mechanisms	

Design and Technology in 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.

Cooking and Nutrition in Key stage 2

♣ 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

Design and Technology LKS2

At Ludgershall Castle Primary School, we use learning ladders to ensure the development and progression of skills and knowledge within the National Curriculum.

Design, make, evaluate and improve (For all topics below)	Design with purpose by identifying opportunities to research and design	
	Make products by working efficiently (such as by carefully selecting materials, textiles and ingredients according to their functional characteristics)	
	Refine work and techniques as work progresses, continually evaluating the product design	
	Use software to design and represent product designs	
	Investigate and analyse a range of existing products	
	Evaluate their ideas and products against their own design criteria	
Take inspiration from design throughout history	Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs	
	Improve upon existing designs, giving reasons for choices	
	Disassemble products to understand how they work	
Food	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	
	Prepare ingredients hygienically using appropriate utensils	
	Measure ingredients to the nearest gram accurately	
	Follow a recipe	
	Assemble or cook ingredients (controlling the temperature of the oven or hob, if L)	
Materials	Cut materials accurately and safely by selecting appropriate tools	
	Measure and mark out to the nearest millimetre	
	Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs)	
	Select appropriate joining techniques	
Textiles	Understand the need for a seam allowance	
	Join textiles with appropriate stitching	
	Select the most appropriate techniques to decorate textiles	
Electricals and electronics	Create series and parallel circuits	
Computing	Control and monitor models using software designed for this purpose	
Construction	Choose suitable techniques to construct products or to repair items	
	Strengthen materials using suitable techniques	
Mechanics	Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears)	

Design and Technology UKS2

Design, make, evaluate and improve (For all topics below)	Use research to design with the user in mind, motivated by the service a product will offer	
	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	
	Make products through stages of prototypes, making continual refinements	
	Ensure products have a high quality finish, using art skills where appropriate	
	Use prototypes, cross-sectional diagrams and computer aided designs to represent designs	
	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	
Take inspiration from design throughout history	Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices	
	Create innovative designs that improve upon existing products	
	Evaluate the design of products so as to suggest improvements to the user experience	
Food	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	
	Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms)	
	Measure accurately and calculate ratios of ingredients to scale up or down from a recipe	
	Demonstrate a range of baking and cooking techniques	
	Create and refine recipes, including ingredients, methods, cooking times and temperatures	
Materials	Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape)	
	Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper)	
Textiles	Create objects (such as a cushion) that employ a seam allowance	
	Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration)	
	Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion)	
Electricals and electronics	Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips)	
Computing	Write code to control and monitor models or products	
Construction	Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding)	
Mechanics	Convert rotary motion to linear using cams	
	Use innovative combinations of electronics (or computing) and mechanics in product designs	

Cross Curricular Links

The design and technology curriculum is delivered through a topic based approach. The main links are with science, history, art and design and English, but these links very much depend on the topic.

Resources

Most of the equipment that is required to teach design and technology is stored safely in the art room. Times are allocated as required. Equipment is clearly labelled so that it is easily accessed.

Health and Safety

Whilst Health and Safety considerations & risk assessment remain the primary responsibility of the teacher in charge, the children should be taught to;

- Reduce risks through responsible behaviour and use good practice to avoid hazardous situations developing.
- Abide by simple safety rules when using tools or equipment.
- Consider and recognise hazards in their proposed ways of working, and take action to minimise them.
- Assess the risk of hurt or damage posed by evaluating their own and other designer's products and suggest remedial action.
- Store tools and materials with due regard, and organise their working environment / practices in a safe way.

Areas for special concern include;

- The use of hot-melt glue guns and power saws. These both require pupils to wear adequate eye protection (goggles) and to be aware of what to do in the event of a minor injury. In KS2, children must be very closely supervised when using a hot glue gun and children in KS1 should not use them and should use an alternative.

Assessment and Recording

The National Curriculum states that 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. We assess pupils using our Knowledge Organisers each term and this is then inputted onto our school tracking document.

Our assessment informs our planning and it is good practice for our staff to make assessments and keep notes which they find useful. Significant achievement or weakness may be noted and may serve as a basis for planning future challenges and

form part of the annual report to parents. Feedback to pupils about their own progress in Design and Technology aims to help children learn by being positive and constructive. Feedback is always given whilst a task is being carried out through discussion. Formative assessment is also used to guide the progress of individual pupils in design and technology. It involves identifying each child's progress and whether they have achieved the skills on our Knowledge Organisers and recalled the 'Sticky Knowledge' accurately in an end of unit quiz. Formative assessment is mostly carried out informally by teachers in the course of their teaching through small group discussions in the context of a practical task, specific tasks for individual pupils, and individual discussions in which children are encouraged to appraise their own work and progress through peer and self-assessment. Subject Ambassadors will accompany the Subject Leader on learning walks and will find out the views and opinions of a sample of children. Information will then be shared and acted upon if appropriate.

Our Impact

We want children to end year 6 being 'secondary school ready' by having the confidence to express themselves, have refined skills all aspects of design and technology. The children will be excited about the projects and keen to discuss ideas. They will be critical thinkers and explain, using subject specific vocabulary, how they could improve and develop their products. They will have good knowledge

Management and Responsibility

The delivery of the Design and Technology Curriculum will be overseen by the subject leader whose main roles and responsibilities include:

- ☆ Contributing to any requirements of the school improvement plan which are linked to Design and Technology
- ☆ Monitoring the delivery of Design and Technology throughout the school and advising on any action or development needed
- ☆ Identifying appropriate training and publishing any CPD opportunities to staff
- ☆ Supporting colleagues in their planning, implementation and assessment
- ☆ Keeping up to date and being informed about any developments within the subject
- ☆ Creating and maintaining an up to date Subject Leaders Folder
- ☆ Creating links within the cluster and wider community
- ☆ Promoting enthusiasm for the subject of design and technology and to demonstrate good practice
- ☆ Supporting and guiding staff by encouraging the sharing of ideas, successes and achievements
- ☆ Keeping under review the written policy document for design and technology
- ☆ Collecting evidence of activities around the school through displays, pictures etc
- ☆ Being aware of national and local developments in Design and Technology through reading relevant materials and attending courses

Policy Review and Evaluation

This policy is embedded in our school's aims and vision and was agreed and adopted by the Governing Body in Spring 2025 and will be reviewed in Spring 2028.