



St Luke's C of E (Aided) Primary School

Design and Technology Policy

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Rationale

It is a primary aim of our school that every member of the school community feels valued and respected, is given the opportunities to thrive and flourish and that each person is treated fairly and well which is demonstrated through our school vision.

Our Vision

Through our Christian values we will **aspire** to be more like Jesus; **believe** all as having equal worth and dignity in God's eyes and help all our children to **achieve** their God-given potential knowing that,

'we can do all things through Christ who strengthens us'

Philippians 4:13.

The school's Design & Technology policy, driven by our vision, motto and core values is a key factor in the success of our school Mission which states:

Our mission will be driven by our vision, motto and values so that together, **we can do all things through Christ who strengthens us.** We will:

- Foster a secure, happy, and nurturing Christian environment where all can **aspire, believe and achieve.**
- Offer a well-disciplined school in which high expectations encourages **friendship** and **forgiveness.**
- Establish effective links between home and school that enables parents and teachers to work together for the benefit of their child so that they can **achieve** their God-given potential.

Spirituality In the Design and Technology Curriculum

At St Luke's our curriculum reflects our Theologically Rooted Vision. In every area we provide opportunities to ensure that the curriculum and extra-curricular opportunities meet the spiritual needs of all learners. In Design and Technology opportunities for spiritual development may be seen through activities which allow pupils to **encounter** ideas, **reflect** on their experience and have opportunities to **respond** to what they have learned such as:

- Explore what inspired inventors and designers of different eras
- Explore how design and technology are used to solve problems – successes and f
- Consider Big Questions of design and technology past, present, and future

Spirituality in Design and Technology will be monitored through lesson observation, book trawl, pupil voice and learner action.

Our Vision

Where every child engages in a varied range of high quality design experiences using creativity, imagination and transferable skills to design and make products that solve real and relevant problems, developing a critical understanding of its impact on daily life and the wider world.

Purpose of Study

"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."

National Curriculum 2014

Aims

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.

Progression

To ensure progression from Foundation through to Year 6, to meet national expectations, we have developed a scheme of work that is based on the subject content in the National Curriculum for Design and Technology. The expectations for each unit are based on the Age-Related Expectations (AREs) in our Learner Profile for Design and Technology.

The scheme of work ensures that each pupil is taught a broad and balanced curriculum where key skills, knowledge and understanding are introduced, developed and extended in order to fulfil our vision. Both within and across each phase, there are opportunities to revisit and build upon prior knowledge and learning.

Teaching and Learning

Design and Technology is taught as a discrete subject with links to topics where possible. Teachers are responsible for ensuring coverage of the Learner Profile Statements and the assessment of pupils' progress (see Assessment section below). There are opportunities for teachers to choose whether to teach weekly sessions or blocks of lessons according to each year groups and needs. Pupils are encouraged to consolidate their learning of key skills through independent learning activities and cross-curricular links.

A Curriculum Overview identifies the units of work to be covered each term and the corresponding aims and objectives to be taught. Assessment Outcomes and related vocabulary are identified on the Design and Technology Learner Profile, Design and Technology Assessment Grid and Vocabulary Progression document. Short term plans are completed and used to focus on teaching Key skills and knowledge each lesson. Planning is completed by each teacher and shared on the designated platform. Planning should be available so that it can be monitored by the Subject Team, on a regular basis.

The school uses a variety of teaching styles in Design and Technology lessons. We do this through a balance of direct teaching, modelling, group activities and individual tasks. Teachers share learning objectives (WillBBA) with pupils to encourage them to be reflective learners at all stages. Teachers share the success criteria (WILF) to support pupils in achieving the desired outcome. Attention is drawn to good examples (WAGOLs) of individual performance as models for the other pupils. Planned opportunities ensure that pupils are encouraged to evaluate their own ideas and methods; the work of others and to say what they think and feel about them.

We recognise the fact that we have pupils of differing ability in our classes, and so we provide suitable learning opportunities for all pupils by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies including scaffolding, modelling, peer support and adult support.

Inclusion

Teaching follows the guidelines of the whole school policies for equal opportunities, SEND and EAL. Planning ensures that all abilities and learning styles are catered for; all staff are responsible for both supporting and challenging pupils. Teaching is generally in mixed ability groups enabling peer support and independence within the groups.

Monitoring

At St Luke's there is a yearly monitoring plan for all subject areas, linked to the School Improvement Plan (SIP). Monitoring can take the form of work trawls, learning walks, planning trawls, pupil interviews and observations. Feedback from this monitoring, informs further developments within the subject.

Assessment, Recording and Reporting

In the Foundation Stage, class teachers are expected to use their professional judgement to make assessments based on their knowledge and understanding of what the child knows, understands and can do through informal day-to-day observations. In Key Stages One and Two, teacher assessments are made against the Learner Profile for Design and Technology both within lessons and at the end of a unit of work. Teachers will complete the standardised summative record sheet for Design and Technology at the end of each term.

These assessments are reported to parents/carers twice a year, in a Mid-Year Report and an End of Year Report.

Marking and Feedback

Children use the 'smiley-face' system of marking their own work in relation to the 'Can I?' statement for that session provided by the teacher in the WILF. Staff will mark in response to the same statement and provide steps for improvement and progression where necessary.

Resourcing

Resources for Design and Technology are kept in a central store, located at the top of staircase 2. Resources are kept in labelled boxes enabling members of staff to locate equipment quickly and safely. It is the responsibility of all staff to ensure that resources are returned to the appropriate place and any resources damaged or low in stock reported to the subject team. There is a yearly budget for Creative Arts and staff are expected to indicate resource requirements at the beginning of the year.

Health and Safety

Health and Safety for Design and Technology follows the whole school policy and the appropriate risk assessments are completed when necessary. (Refer to the Health and Safety Policy and Procedures and appropriate risk assessments documents.)

Each member of staff is responsible for the activities and health and safety of their pupils.

Appendices

Appendix 1

DESIGN & TECHNOLOGY LEARNER PROFILE					
		YEARS 1 & 2	YEARS 3 & 4	YEARS 5 & 6	CHALLENGE
To design, make, evaluate and improve (DMET)	Food	a. I can understand where food comes from and can sort products into meat and plant sub-groups.	a. I know where a range of ingredients are grown, reared, caught or processed.	a. I understand seasonality and can identify different foods produced in each season.	a. I can research products to a given criteria e.g. which biscuits are healthiest, dietary needs.
		b. I can use a food wheel and the basic principles of a healthy and varied diet to plan dishes.	b. I can plan and prepare a variety of healthy dishes (predominantly savoury) using a range of cooking techniques and ingredients.	b. I understand that cooking alters the flavour & texture of foods & use this knowledge in my designs.	b. I understand the importance of nutrition, a balanced diet and about the characteristics of a broad range of ingredients in choosing and preparing food.
		c. I can add my own ideas to design purposeful, functional, appealing products based on given design criteria.	c. I can use research and develop design criteria to inform the design of functional, appealing products that are fit for purpose.	c. I can incorporate the views of intended users & for the intended purpose.	c. I can design innovative products showing an awareness of commercial appeal.
	Other areas	d. I can generate ideas based on my investigations of products.	d. I can recognise that my designs have to meet a range of different needs and users.	d. I can generate ideas by collecting and using information.	
		e. I can use models, pictures and words to describe my designs.	e. I can use words, labelled sketches and models to communicate the details of my designs and can clarify when asked.	e. I can communicate alternative ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, pattern pieces and prototypes, showing that I am aware of constraints.	e. I can use prototypes, pattern pieces, cross-sectional diagrams and computer aided designs to represent designs.
		f. I can describe how my product works, recognise what I have done well and suggest things I could improve.	f. I can reflect on the design and make process and my products and identify some improvements.	f. I can reflect on my designs as they develop, drawing on previous experience.	f. I can check my work as it develops, solve technical problems and show some creativity as I modify my approach.
To take inspiration from design throughout history (H)	a. I can identify the work of famous chefs and the tools they use.	a. I can name some great/famous chefs and generate ideas from their cooking/recipes.	a. I can improve my own cooking technique by watching famous chefs.	a. I can use the work of a famous chef and reproduce/modify the recipe.	
	b. I can say what I like about existing products and can suggest improvements.	b. I can identify some of the great designers in all of the areas of study to generate ideas for designs.	b. I can combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.	b. I can analyse the work of others, including iconic designs, to inform work.	
	c. I can explore how products have been created.	c. I can disassemble products to understand how they work.	c. I understand how key events and individuals in history (in design and technology) have helped shape the world.	c. I understand developments in design and technology and the responsibilities of designers, including environmental responsibilities.	
To master practical skills: FOOD (F)	a. I can prepare food safely & hygienically & can describe what this means.	a. I can work in a safe & hygienic way e.g. tying hair back, wiping work surfaces, not mixing up utensils.	a. I can apply the rules for basic food hygiene & other safe practices e.g. oven safety, food storage.	a. I can use my knowledge of micro-organisms to prepare & store food properly.	
	b. I have experienced using a simple recipe to make a food product.	b. I can weigh & measure my ingredients accurately.	b. I can measure accurately and calculate ratios of ingredients to scale up or down from a recipe.	b. I can modify recipes for a purpose e.g. quantities.	
	c. I can use a mixing bowl to prepare a mixture and other simple tools e.g. whisk, rolling pin etc.	c. I can select and am beginning to use the appropriate equipment to prepare foods in a variety of ways e.g. sieve, grater, knife, potato peeler, whisk, juicer.	c. I can prepare foods in a variety of ways e.g. chopping, peeling, grating, coring, sieving etc.	c. I can prepare one item of food using a variety of techniques e.g. a tomato can be sliced, peeled, pureed, stuffed, cut as a decorative garnish.	
	d. I can use knives safely to cut food (with help).	d. I understand that some foods may not be eaten raw as it is unsafe.			
	e. I know a range of cooking techniques e.g. baking, steaming, roasting, boiling.	e. I can change the nature of the raw ingredients by cooking or chilling.	e. I can demonstrate a range of baking and cooking techniques (controlling the temperature of the oven or hob).	e. I can create and refine recipes including ingredients, methods, cooking times and temperatures.	
	f. I can describe the properties of food by taste, smell, texture & consistency.	f. I can present my food product to impress the consumer.	f. I can use a selection of ingredients to meet an identified need e.g. lunchtime snack, healthy sandwich, low gluten.		

To master practical skills: TEXTILES (T)	a. I can use pre-prepared patterns/templates to help me measure, mark out and cut fabric.	a. I can use patterns either self-generated or templates.	a. I can mark out using my own patterns & templates.	
	b. I can use scissors precisely when cutting out.	b. I can use sharp scissors accurately to cut textiles.		
	c. I can join textiles using glue, staples, tying & a simple stitch.	c. I can join fabrics using running stitch, back stitch and over stitch.	c. I can use different ways to join materials e.g. glue, pins, press-studs, various various stitches, buttons.	c. I can use embroidery & other stitches to join and finish fabric work.
	d. I know that textiles have different properties e.g. touch, insulation, texture & waterproof.	d. I can make a textile product using appropriate materials that have a good finish & can do the job it was made for.	d. I can use my art textile skills such as stitching to create a product that is sturdy & fit for purpose.	d. I can experiment with a range of materials until I find the right mix of affordability, appeal & appropriateness for the job.
To master practical skills: STRUCTURES (S)	a. I am beginning to use a range of materials to make products such as wood, plastic, metal, clay, card, paper.	a. I can use the most appropriate malleable material suitable for the purpose of my product.		a. I can measure & select materials with cost & workability in mind.
	b. I have explored using a range of tools and know what they are called and used for.	b. I can make holes with a punch/drill accurately and safely.	b. I can cut accurately and safely using tools e.g. craft knife, saw.	b. I can use a range of tools accurately and safely to drill, screw, glue, cut and nail.
	c. I can measure & mark out materials accurately.	c. I can measure using cm to cut, score and fold.	c. I can measure using mm to cut, score and fold with precision.	c. I can make very careful & precise measurements so that joins, holes & openings are in exactly the right place.
	d. I can demonstrate a range of cutting and shaping techniques such as tearing, cutting, folding.	d. I can use scoring & folding to shape materials accurately.	d. I can use my hands & other tools to mould materials into accurate shapes that will do the intended job well.	d. I can hide some joints for aesthetic effect.
	e. I can demonstrate a range of joining techniques such as gluing, hinges or combining materials to strengthen.	e. I can use cutting and shaping techniques within the perimeter of the material such as slots and cut-outs.	e. I can select appropriate joining techniques.	e. I can make joints that are flexible to allow for dismantling or folding.
	f. I know how to make my structures stronger by folding or joining.	f. I can make my structures stronger by folding, joining or by its shape.	f. I can use techniques for reinforcing & strengthening structures.	
	g. I can finish off my work so that it looks neat & tidy.	g. I can apply a high quality finish e.g. carving, paint, glaze, varnish or other finishes.	g. I ensure that edges are finished by sometimes adding other materials e.g. edging strips.	a. My product is carefully finished & is well received by the intended user.
To master practical skills: MECHANICS (M)	a. I have explored how levers, sliders, wheels, axles and winding mechanisms work e.g. through the use of construction kits.	a. I can make a product using levers, sliders, wheels, axles or winding mechanisms.	a. I can use simple mechanisms e.g. cogs, cams, pulleys, levers & cranks.	a. I can use cogs & gears to change direction & speed (construction kits).
				b. I can select the most appropriate mechanism to make my product.
To master practical skills: ELECTRONICS (E)		a. I have made a product that uses electrical components e.g. switches, bulbs & motors.	a. I have made a product that uses electrical circuits.	a. I can create circuits using electronics kits that employ a number of components such as LEDs, resistors, transistors and chips.
To master practical skills: COMPUTING (C)	a. I can model designs using software.	a. I can control and monitor models using software designed for this purpose	a. I can write code to control and monitor models or products.	