



Design and Technology Policy

Reviewed Autumn 2019

Our Vision:

Jesus said: 'I have come that they may have life and have it to the full.'

Promoting *life-long learning*
Developing *life-giving relationships*
Exploring *life-enhancing faith*
Inspiring *life-enriching aspiration*

"One machine can do the work of fifty ordinary men. No machine can do the work of one extraordinary man."

Elbert Hubbard

This policy outlines the purpose and management of the design and technology taught in our school. The implementation of the policy is the responsibility of all teaching staff and is monitored by the Design and Technology leader.

Threshold Concepts

These are the key aspects of Design and technology chosen to build conceptual understanding within the subject and are repeated many times over the course of the primary curriculum and beyond.

- **Master practical skills** :This concept involves developing the skills needed to make high quality products
- **Design, make, evaluate and improve**:This concept involves developing the process of design thinking and seeing design as a process.
- **Take inspiration from design throughout history**: This concept involves appreciating the design process that has influenced the products we use in everyday life.

Aims of Great Design Technologists

At Hanley St Luke's we aim to foster:

- Significant levels of originality and the willingness to take creative risks to produce innovative ideas and prototypes.
- An excellent attitude to learning and independent working.
- The ability to use time efficiently and work constructively and productively with others.
- The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- A thorough knowledge of which tools, equipment and materials to use to make their products.
- The ability to apply mathematical knowledge.
- The ability to manage risks exceptionally well to manufacture products safely and hygienically.
- A passion for the subject and knowledge of , up – to date technological innovations in materials, products and systems

Teaching and Learning Strategies

Design and technology is taught in FS, KS1 and KS2 as either discrete planned activities or an integral part of topic work, where appropriate, but the skills covered are chosen to be challenging and progressive not merely 'topic activities'. They will have a clear Design and Technology focus, building on prior learning in line with our subject progression of skills. Every opportunity is taken to link and apply wider curriculum learning, particularly drawing on maths, English, science and computing as appropriate. There are further opportunities to apply skills for project design throughout the academic year tied into seasonal events such as the Christmas Fair or Father's Day etc. We link with local High Schools for transition work in Years 5 and 6 which often has a Design and Technology focus which further supports our pupils' learning and widens their experiences.

As teachers we consider:

- Design and technology opportunities arising within the curriculum and how they can link with other subject areas and bodies of knowledge;
- How we present the teaching of new skills to the children, i.e. group based, class taught or at an individual level;
- The role of design and technology in the teaching and learning process throughout the curriculum;
- How to encourage children to produce work of quality;
- How to encourage the safe, economic and appropriate use of materials, tools and equipment;

Pupils will be given opportunities to:

- Develop realistic outcomes to assignments.
- Take increasing responsibility for their own work.
- Critically evaluate their work and the work of others and suggest improvements.
- Work individually and in teams, groups, partners or pairs.
- Work with a range of materials and learn to use them appropriately.
- Use a variety of tools safely and correctly.
- Communicate ideas in a variety of ways.
- Develop skills and apply knowledge and experience when working on an assignment.
- Develop the ability to solve problems.
- Research and record relevant information where appropriate.
- Examine and evaluate design features in simple products including their historical development.

Skills Progression within the subject:

	Food	Materials	Textiles	Electricals and Computing	Construction	Mechanics	Design, make, evaluate and improve	To take inspiration from design throughout history
Year 1 and 2	Cut, peel or grate ingredients safely and hygienically. Measure or weigh using measuring cups or electronic scales. Assemble or cook ingredients	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).	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).	Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage). Model designs using software	Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products	Create products using levers, wheels and winding mechanisms.	Design products that have a clear purpose and an intended user. Make products, refining the design as work progresses. Use software to design.	Explore objects and designs to identify likes and dislikes of the designs. Suggest improvements to existing designs. Explore how products have been created.
Year 3 and 4	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 cooking).	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.	Understand the need for a seam allowance. Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles.	Create series and parallel circuits Control and monitor models using software designed for this purpose.	Choose suitable techniques to construct products or to repair items.	Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanism s, pulleys and gears).	Design with purpose by identifying opportunities to design. Make products by working efficiently (such as by carefully selecting materials). Refine work and techniques as work progresses, continually evaluating the product design. Use software to design and represent product designs.	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.
Year 5 and 6	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.	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).	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).	Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). Write code to control and monitor models or products.	Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).	Convert rotary motion to linear using cams. Use innovative combinations of electronics (or computing) and mechanics in product designs	Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). Make products through stages of prototypes, making continual refinements. Ensure products have a high quality finish, using art skills where appropriate.	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.

Assessment

Teachers regularly use Assessment for Learning, which includes observations, discussion and questioning of the children during their participation in Design and Technology lessons. Success Criteria is included within all planning, and allows teachers to monitor the effectiveness of their teaching and the learning taking place.

Photographs are used as a means of recording evidence of pupils achievements, along with any work produced.

The Design and Technology lead also regularly monitor work to ensure continuity, coverage and progression throughout the school and Key Stages.

Self-assessment and peer assessment is used regularly to support the children's assessment for learning.

Displays are an integral part of Hanley St Luke's and help to create a creative and welcoming learning environment.

Resources

The school has a range of resources and each class teacher is responsible for these. We have a range of teacher and children's reference books. An art and design technology resource area is available and all staff have a responsibility to ensure it is maintained in good order. The coordinators order stock in liaison with the needs of each year group.

Equal Opportunities

The full range of activities in technology will be made available to all children, irrespective of race, gender or physical disabilities. Any children who are identified as having special needs are given the help they require. Where children have a degree of physical, sensory or behavioural difficulties in the making of products they should be encouraged to participate in such activities with help from others. A range of approaches will be used and incorporated into our D&T activities. This will allow all children to develop their potential according to age and ability.

Role of the Subject Leader

The subject leader works closely with the Art and Science subject leader and with the whole staff to develop a cohesive design and technology experience throughout the school. The co-ordinator will also:

- Support colleagues in their development and understanding of detailed work plans and implementation of schemes of work and in assessment and record keeping.
- Take responsibility for the purchase and organisation of resources for D&T
- Keep up to date with developments in D&T.
- Monitor delivery throughout the school.

Health and Safety

A set of safety guidelines for design and technology are given out to each teacher, a copy of this is also available to view on the school policy website.

This policy statement will be reviewed and modified as and when necessary.

Subject Leader- L Rhodes

