St James CE Primary School, Haslingden

DESIGN AND TECHNOLOGY POLICY	
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Growing in God's Love, Learning as we go.

ENDURANCE FORGIVENESS PEACE
FRIENDSHIP TRUST KOINONIA
THANKFULNESS

Mission statement

To provide a high quality of education for all our children within a Christian environment.

Vision:

We are a safe, loving, supportive, Christian family which values each child's individuality and uniqueness created in the image of God. We nurture the talents given by God to inspire pupils to achieve and succeed, and foster a sense of awe and wonder of God's world:

- Form foundations of lifelong faith through Gospel values and sincere, meaningful prayer.
- Guide Pupils to determine their own personal moral values, and a respect and understanding of other races, religions and ways of life.
- Develop future citizens who cherish the world in which they live and their responsibilities within it.
- A curriculum which has a breadth of experience and equality of opportunity for all.

Design and Technology Curriculum Intent.

In design and technology, our children learn how to: take risks, work safely with tools and materials, become resourceful, innovative, enterprising and capable citizens. They use their creativity, imagination and social interaction skills to design and make products that solve real-life problems. They understand the processes involved through planning, making, evaluation and refinement.

Why teach Design and Technology?

> "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." (Primary National Curriculum 2014)

Design and technology prepares children to take part in the development of tomorrow's rapidly changing world. Creative thinking encourages children to make positive changes to their quality of life. The subject encourages children to become autonomous and creative problem-solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond by developing ideas and eventually making products and systems.

Through the study of design and technology they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts. Design and technology helps all children to become discriminating and informed consumers and potential innovators.

Lancashire Guiding Principles for Primary Design & Technology states that design and technology should be taught a minimum of:

- Key Stage 1 – 36 hours annually
  Key Stage 2 – 36 hours annually

Entitlement

All pupils are entitled to have access to the design and technology curriculum regardless of ability race, gender, cultural background or any physical or sensory disability.

Design and Technology Aims

The aims of design and technology are:

- To develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making.
- To enable children to talk about how things work, and to draw and model their ideas.
- To develop their capability to create high quality products through combining their designing and making skills with knowledge and understanding.
- To encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures.
- Use and explore a range of materials, resources and equipment.
- To explore attitudes towards the made world and how we live and work within it.
- To develop an understanding of technological processes, products, and their manufacture, and their contribution to our society.
- Use the internet to explore ideas and already made products.
- To foster enjoyment, satisfaction and purpose in designing and making.

Planning of Design and Technology

Design and technology is a foundation subject in the National Curriculum. To assist in short term planning our school uses the school curriculum map as a starting point to plan.

We carry out the curriculum planning in design and technology in two phases; medium-term and short-term.

Our medium-term plans give details of each unit of work for each term. They identify learning objectives and outcomes for each unit, and ensure an appropriate balance and distribution of work across each term.

Class teachers complete a weekly or short term plan for each design and technology lesson. These list the specific learning objectives for each lesson and detail how the lessons are to be taught. The class teacher keeps these individual plans so the class teacher and subject leader can discuss them on an informal basis.

The activities in design and technology are planned so that they build upon 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.

Teaching of Design and Technology

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 co-operative 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.

Teaching Time (36 hours annually KS1, 36 hours annually KS2)

The teaching of Design and Technology in each year group is arranged by the teaching staff. The unit may be carried out in a block of afternoons in a week, weekly sessions for a half term or alternate weeks with art as the teaching staff see fit.

The school uses a variety of teaching and learning styles in design and technology lessons. The principal aim is to develop children's knowledge, skills and understanding in design and technology.

Teachers ensure that the children apply their knowledge and understanding when developing ideas, planning and making products and then evaluating them. We do this through a mixture of whole-class teaching and individual/group activities.

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the attainment targets.

Key Stage 1

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 wide range of tools and equipment to perform practical tasks
- 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 in their products

Cooking and nutrition

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

Key Stage 2

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
- select 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

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

Cooking and nutrition

- 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

Assessment

Pupils' achievements can be assessed in a variety of ways. These include direct observation, discussion and questioning of pupils as well as by evaluation of the finished product itself. Teachers should collect evidence of individual, group or class work for assessment purposes, chosen from the following formats: Pupils' annotated sketches / plans / drawings; photos / videos of pupils 'at work'; specific assessment assignments to evaluate a particular capability; photos / videos of part or completely finished work (products); children's own written / verbal evaluations of their tasks / activities; appraisal / evaluation of the finished article. These types of records can be used to accumulate a snapshot of current D&T practice within the subject portfolio for the whole school.

Health & 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 safe use of hot-melt glue guns and saws.
- Close supervision when the children are using glue-guns, saws, hammers, kitchen knives etc.
- To be aware of what to do in the event of a minor injury.
- Food Technology lessons require that hygiene is given the utmost priority. Activities involving the use of cookers / ovens / microwaves require a high level of supervision with appropriate safety / protective clothing being available.
- Fabric work that involves scissors, sharp cutting tools, pins and needles requires careful resource management. Children should be taught simple storage strategies for dealing with sharp objects that are 'not in use'.
- Construction kits may pose some small risk (particularly at KS1) and children should be warned of the dangers of placing pieces in their mouths etc.
- Safe practices for handling soft mouldable materials should also be taught to minimise small pieces being inappropriately used!
- Contact with foodstuffs and other materials likely to cause allergic reactions should be avoided.

Resource Management

Funding for Design and Technology will be within the school budget plan for each financial year. There is a central Design and Technology budget to cover the purchase of equipment such as tools, construction kits, consumable materials, books and other resource materials. The Subject Leader will be responsible for ordering equipment and materials related to the IPC theme. It is the responsibility of each class teacher to identify additional resource needs in relation to their project. Equipment and materials have been organised in the central store. This will be maintained by the Design and Technology co-ordinator. Any shortages, breakages or losses should be reported immediately to the Design and Technology subject leader.

Useful websites that support D&T;

General;

British Educational Communications & Technology Agency www.becta.org.uk
Design and Technology Association www.data.org.uk www.designmuseum.org
www.24hourmuseum.org
www.museumfortextiles.on.ca
www.designandtech.com
www.dtonline.org
www.technology.org.uk
www.howstuffworks.com
www.kented.org.uk/ngfl/websites/tech.html
www.3Dmodelworks.com

Food;
www.food.gov.uk
www.milk.co.uk
www.foodafactoflife.org.uk/
www.birdseye.com
www.foodandhealth.com
Mechanisms;
www.cabaret.co.uk
www.flying-pig.co.uk
www.sagecraft.com/puppetry
Misc.;
Centre for Alternative Technology: www.cat.org www.kidsdomain.com/craft/