Design and Technology Subject Policy

Date: Autumn 2023
Review date: Autumn 2024 (Or sooner if changes to the law or practice)

Teaching and learning

Intent:

This policy is a statement of the aims, principles and strategies for the teaching of Design and Technology at Cranford Primary School. We aim to provide opportunities for children to develop an understanding of technological processes, products, their manufacture and application, and the contribution of technology to our society which results in the acquisition of knowledge and skills. Children will know more, remember more and understand more.

Design & Technology is a life skill. It allows children to use their imagination, make choices and decisions,make judgments and evaluations. It allows children to respond to a challenge, develop reasoning skills and make use of logic. It enables children to take risks and learn from their mistakes, helping them to be critical and make evaluations of their work and the work of others. DT supports other curriculum areas e.g. language, mathematics, science, ICT, physical development (fine motor skills).

Early Years – Nursery & Reception – The Foundation Stage

Design and Technology is an integral part of our Early Years curriculum and is taught within the area of learning – Knowledge & Understanding of the World. A progression of skills, attitudes and knowledge which links into KS1 is detailed in our scheme of work. It allows children to enjoy working with a variety of materials and to talk about how and why products are made. A balance between teacher-directed activities and free opportunities to explore different materials and how things fit together are planned.

KS1

Design and technology lessons in Key Stage 1 are taught through a variety of creative and practical activities. Pupils are taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

When designing and making children are taught to:

- Evaluate current products and think about how they want to produce their own product.
- Design purposeful products for themselves, based on particular criteria.
- Generate ideas through talking and drawing.
- Select from a range of tools, equipment and materials.
- Use technical knowledge to build structures and explore how they can be made stronger, stiffer and more stable
- Explore mechanisms (e.g. levers, sliders, wheels).
- Evaluate their final product against the design criteria.

KS2

Design technology lessons in Key Stage 2 is where children are expected to:

- 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 by selecting from and using a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- Evaluate a range of existing products and their ideas and products against their own design criteria and consider the views of others to improve their work
- Discuss ideas and develop annotated sketches and mind maps
- Apply their understanding of technical knowledge to improve their products
- In Year 4 and above children use diagrams to evaluate their products through self assessment and peer assessment .

Cooking and nutrition

As part of their work with food, pupils are 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. The children are able to do this as we have a very well equipped kitchen.

Through a range of different activities, children are taught to:

Key stage 1

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

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.

Implementation:

All children will be taught the skills and principles of Design Technology as outlined in the programmes of study in the National Curriculum for Design Technology alongside Projects on Page scheme of work, ensuring that children are aware of health and safety issues related to the tasks undertaken.Children design products with a purpose in mind and an intended user of the products. Food technology is implemented across the school with children developing an understanding of where food comes from, the importance of a varied and healthy diet and how to prepare this.

Every opportunity is delivered for the four key aspects of Design technology to be integrated into learning;
Design
Make
Evaluate
Technical Knowledge

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programmes of study, taken from the National Curriculum.

At Cranford Primary School, we teach Design Technology through practical lessons, using knowledge organisers to help children learn new skills and vocabulary related to particular topics.

Non- negotiables

1. Use DT books to ensure continuity and ability and to see progress
2. Topic page (include what children are making, who is the user and what is the purpose)
3. Knowledge organisers to be stuck in at the beginning of each topic.
4. Lessons build firmly on pupil's earlier learning and ensure progressive challenge, breadth and depth to their designing and making
5. Follow the " research, design, make and evaluate process.
6. Focus tasks, demonstrations using videos or pictures to support pupil's understanding of the mechanisms and construction required to design and make products safely and accurately.

In every lesson have:

- Key vocabulary marked with pink/green
- LI objectives highlighted pink/green to show understanding of concept/task
- Next steps to be based on understanding of concepts and DT skills
- Use of questions to formatively assess understanding

8. Take photos of children's work. Stick in the photos under the 'making LI'

9. Use the evaluation diagrams in Year 4, 5 and 6.

10. Use a range of resources, including ICT in the 'research lesson'

Impact:

Impact can be measured through the following ways:

- Individual discussion
- Listening to the children's ideas as they discuss between themselves
- Group discussions in both planning and reporting back sessions
- Observing the children's skills in Design and Technology
- Record the progress that children make by assessing the children's work against the learning objectives for their lessons. At the end of a unit of work, teachers make a judgement against the Key Learning Skills
- High quality DT work from across the school.
- Images and videos of the children's practical learning.
- Interviewing the pupils about their learning (pupil voice).
- Marking of work in books.
- Consistency in expectations and approach.
- Progression of Skills.
- Good knowledge of vocabulary.
- Rich, cultural opportunities provided.
- Children will have a wider understanding of the world around them.

As a result of a well-structured and planned curriculum, pupils will understand Design and Technology as a process of plan, make and evaluate and they will understand, and be able to discuss, the relevance to their everyday lives.
Children will ultimately know, remember and understand more about Design Technology, demonstrating this knowledge when using tools or skills in other areas of the curriculum and in opportunities outside of school.
Children will develop skills they can use beyond school and into adulthood.

Monitoring and Reporting

The Design and Technology Subject Leaders will be responsible for the monitoring and evaluation of Design and Technology planning, teaching and work throughout the school and reviewing this policy. The Design and Technology Subject Leaders will carry out termly monitoring which may include:

- Pupil questionnaires/interviews
- Work/planning sampling/scrutiny to ensure coverage and progression throughout the school.
- A drop in to check how the lessons are delivered

The Design and Technology Subject Leaders will feedback to staff from monitoring and advise them on good practice/areas of development.

Assessment and Recording

DT learning is recorded in DT books and shows evidence of all three stages (plan, make, evaluate). Due to the practical nature of design and technology, evidence of work undertaken by children can be in the form of pictures or videos taken by the class teacher.

Children will be assessed termly against the Design and Technology statements from the National Curriculum and children's progress and achievement is recorded on Target Tracker by the class teacher .

The large majority of children will achieve age related expectations in Design Technology

Teachers check and refer to previous related knowledge at the beginning of each new DT topic.

Adaptation

When planning Design and Technology the learning outcomes need to be adapted to allow for pupils of all abilities to succeed. To overcome any potential barriers to learning in Design and Technology, some children may require:

- Alternative tasks to overcome any difficulties arising from specific religious beliefs they may hold in relation to the ideas or experiences they are expected to represent.
- Alternative or adapted activities to overcome difficulties with manipulating tools, equipment or materials.
- Specific support to communicate through the means other than writing or drawing and help to record or translate their ideas into a drawing and help to record or translate their ideas into a drawing.
- Opportunities to work in ways that avoid contact with materials to which they may be allergic.
- More time than others to complete the range of activities.

Equal Opportunities

All children should have equal opportunity to engage in the full range of design and technology activities. We recognize that we must challenge adverse stereotypes and through our planning, resourcing, organization and monitoring using strategies to address gender equality and cultural diversity.

Health & Safety

Health & Safety issues relating to use of tools, food technology and use of different materials should be taught throughout the units of work.

The following precautions must be adhered to in addition to responsibilities outlined in Health & Safety policy.

As stated in the National Curriculum:

“Pupils should be taught to use materials, tools and techniques for practical work safely ….”

It is the teacher’s role to teach children how to use design and technology equipment in a safe, confident manner. Therefore, children should be given access to teacher directed learning activities so that they learn to handle the equipment in an appropriate way. Clear ground rules need to be established with children so that they can progressively take responsibility for their own organisation of equipment and materials and clearing up. If any “spillages” occur, they should be cleared up as quickly as possible. This means that each classroom should be equipped with cleaning materials, namely, a dustpan, brush, cloths, scourer and washing up liquid.

Use of Tools

Safety mats are to be used to protect tables when using certain tools e.g. paper drills, rotary cutters, paper cutters

Cookers

Once instruction has been given, children may be allowed to operate the cooker under close supervision.

Food Hygiene

Children should be made aware as early as possible of the need for hygienic food preparation. Teachers should train the children to prepare food hygienically and supervise preparation.

Glues

Pritt-Sticks: These may be used by children as soon as they are competent not to get any in their eyes, mouth etc…

PVA/Hobby glues: As above in addition to some training and then general supervision.

Wood Adhesive: This should only be used by the teacher or under direct supervision

Wallpaper paste: This glue may be used after training and then under general supervision.

Glue Guns: Only low temperature glue guns should be used. They should be used by the teacher only until years 5 and six, where they may be used by the child under close supervision of an adult.

Knives

While use of scissors is preferable, children may be required to use knives for their Design and Technology work. They should only be used by older children and can be used once they have learnt the rules, techniques and skills for cutting. They should be closely supervised while working with a knife.

Paints

Children should use water based paints only. These may be used under general supervision. Emulsions (house paints) should be used by adults only or with older pupils under supervision.

Plastics

Plastic sheeting should be cut using scissors and may be used at any age where the pupils are competent with scissors. Years 5 and 6 may sand plastics but only after training and under supervision. Hot wire cutters should only be used by a competent teacher.

Sanding/Filing

Sandpaper/Emery paper/Files: Sanding and filing may be carried out using these tools under general supervision as soon as the children's motor skills are sufficient.

Paper cutters and scissors

Paper cutters: These should be used by the youngest pupils until they have the motor coordination to use scissors.

Sharp ended scissors: These may be used under general supervision once the children can be relied upon to use the correct techniques.

Left handed scissors/snips: While most children are right handed left handed scissors and snips should be made available for left handed children.

Nails and Pins

These may be used under general supervision once the children have been trained in their use.

Staplers

Mini staplers may be used by children under general supervision. Heavy duty staplers may be used under close supervision until the children are competent. Electric staplers are never to be used in the classroom. Staple guns are to be used on by trained adults.

How to use tools appropriately is taught through focused practical tasks outlined in schemes of work.

Use of Computing

Opportunities to use ICT to support teaching and learning will be planned for the ' research' lesson..

SUBJECT OVERVIEW

SUBJECT OVERVIEW- DT (2022-2023)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Early Years	Diva lamps **Barfi**	**Space rockets** **Planets** **Buildings** **Lanterns** **Noodles/ biscuits**	**Haunted houses** **Racing tracks** **Making castles**	**Easter eggs salt dough**	**Minibeast baking**	**Landmarks around the world** **Different food from around the world**
Year 1	ART	**DT** **Food-** Fruit and Vegetables Fruit salad	**DT** **Textiles-** JOFLI Jackets	ART	**DT** Freestanding Structure- Playground Equipment **Structure**	ART

Year 2	DT- **Food** Fruit Smoothie For a child as a healthy snack	**ART**	DT- **Construction** Making salt dough decorations- For family to hang around their house	**ART**	ART	**Mechanisms** DT- Wheels and Mechanisms A cart to carry a toy
Year 3	**ART**	ART	Model volcanoes- **Construction** focus for purpose of educational presentation (DT)	Pop- up cards- (Easter) (DT) **Mechanizm**	DT Healthy-Varied Diet (Wrap) **Food**	ART
Year 4	Art	**Structures:** Shell Structures- Christmas Gift Box	ART	ART	**Electrical Systems:** Creating a buzzer for the school office	**Food** Food from around Europe Health and varied diet (Pastries)
Year 5	ART	ART	**Textiles** Combining different fabric shapes Viking purses	**Food** Celebrating culture and seasonality Savoury muffin/ savoury scones		**Mechanizm** Mechanical systems Cams Toys
Year 6	ART	**Construction :** Frame structure : Playground shelter - weather protection	**Spring 1** **Food:** Celebrating culture and seasonality Making Pizza		ART	**Electricity/**Mechanical systemsMore complex switches and circuits