



LATCHMERE
ACADEMY TRUST

Design & Technology Policy

NB: Throughout this document Latchmere Academy Trust may be abbreviated to "LAT"

The Importance of Design 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. 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.

Aims and Objectives

By the teaching of design technology we aim to provide relevant experiences to help develop children's interests and skills to enable them to better understand and access our ever changing world.

Specific aims that will be employed are:

- To develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- To 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
- To critique, evaluate and test their ideas and products and the work of others
- To understand and apply the principles of nutrition and learn how to cook.

Teaching and Learning

EYFS

Children are encouraged to find out about the technological world through investigative activities and play. Through this children are able to develop the crucial knowledge, skills and understanding to help them make sense of the world. Through cross-curricular planning activities are provided which allow children to make for a purpose. Children are encouraged to think imaginatively and to talk about what they like and dislike when designing and making. They build on early childhood experiences of investigating objects around them. Children explore how familiar things work and talk about their ideas. They learn how to use tools safely and correctly, modelled by the adults around them.

Design technology falls under the Expressive Arts and Design, physical development and communication and language in the Development Matters. The early learning goals give guidelines for the expectation required by the end of this stage by each child:

Expressive Arts and Design: Creating with materials

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.

Physical development: Fine motor skills

- Use a range of small tools, including scissors, paintbrushes and cutlery.

Communication and language: Speaking

- Offer explanations for why things might happen, making use of recently introduced vocabulary [...]

By the end of Key Stage 1

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

By the end of 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:

Research

- Investigate and analyse a range of existing products.
- Understand how key events and individuals in design and technology have helped shape the world.

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

- 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 [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. Use computer generated design programs (CAD).

Cooking and Nutrition

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 should be taught:

Early Years

- To establish good habits and behaviours towards food; making and eating is one of the key areas that will help young children eat a varied and balanced diet.
- To understand the importance of healthy food choices and discuss foods they like/ dislike and why.
- Healthy eating is much more than what is eaten. Young children also need to be supported to establish good behaviours around how, when and why they eat.

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.

Organisation, Special Educational Needs and PPG Entitled

Design and technology follows Projects on a Page planning. Each project should last between 6 to 12 hours. Sometimes it is more appropriate to block periods of time so that the making of a product is concentrated into one or two weeks. The overall length of time spent on a termly project will be in line with the new creative curriculum. The practical activities are carried out in classrooms and food technology either in the staffroom for Early Years or the Pupil Kitchen for KS2.

In design and technology lessons children are encouraged to challenge the stereotyped roles of men and women. Where possible, both male and female

teachers are seen working on mechanical and constructional tasks and working with food and textiles. The subject develops children's cultural awareness and understanding and leads children to appreciate the value of differences and similarities. It leads to an understanding that all people are equal regardless of age, race, gender or ability and that there need to be alternative solutions to meet the needs of individuals and groups of people.

Differentiation is by outcome and additional adult support. All children work on the same design and make task and all will achieve a successful outcome, according to ability. Design and technology activities enhance the special educational needs provision within the school as it provides further opportunity to develop hand eye co-ordination, develop fine motor skills and to encourage socialisation.

Planning

Both KS1 and KS2 planning will follow DATA <https://www.data.org.uk/>

The medium term planning grids are used to produce plans. These are based on the new creative curriculum. In their daily planning folder, teachers will keep a copy of the medium term planning, demonstrating the creative links between all subjects.

Assessment and Record keeping

The class teacher may photograph examples of pupils work as evidence of learning. From Year 1, D.T work will be recorded in exercise books that follow them throughout school.

Cross-curricular and extra-curricular links

Children will be encouraged to:

- Apply scientific skills *e.g. predicting and fair testing.*
- Apply mathematical skills *e.g. measuring to an appropriate number of decimal places, drawing and interpreting tables, graphs and bar charts.*
- Apply ICT skills, *e.g. making things happen by use of control, handling information through the use of a database or spreadsheet.*
- Apply art skills, *e.g. investigating texture and colour, sketching and formal drawing.*
- Read non-fiction texts and pictorial representations for the purpose of research and evaluation.

Use of Computing

Where appropriate, planning will incorporate the use of computing through the use of software, digital cameras, internet and other control peripherals.

Health and Safety

- At all times, the teacher should consciously question and check the safety of the activity and any tools to be used. Classroom organisation and spacing are a significant issue.

- All tools should be used under adult supervision. Children are to be informed of health and safety guidelines and encouraged to look out for and report potential hazards whilst they are working.
- Children are not to use the school glue guns as they become extremely hot. Children in Years 5 and 6 may use the 'low temp' glue guns under adult supervision. Teachers to check with DT leaders if they are unsure or access current advice.
- When handling food, all preparation and cooking areas must be cleaned – following hygiene rules and guidance. Many of the cleaning products are available from the Premises team.
- Children and adults should wear aprons, wash hands and tie long hair back.

Care of Equipment

Most equipment such as glue guns and saws, are stored in designated cupboard areas. Teachers have a responsibility to collect all the equipment needed prior to lessons and return to the correct position in a neat organised fashion, ready for the next class. Children are to be encouraged to treat tools and materials with respect during the lesson and tidy away neatly. When using electrical equipment, care must be taken to position wires away from paths or wet areas.

Resources

All general equipment or consumable resources are kept in designated cupboards. Specific year group resources maybe kept in classrooms. The drawers and shelves within the cupboards are labelled. Staff are responsible for collecting the equipment and resources they need prior to the lesson and for returning it after use.

The role of the Design Technology subject leader

The role of the design and technology leader is:

- To formulate the design and technology policy and curriculum.
- To identify areas for development within the school improvement plan.
- To provide in-house training.
- To attend external training in order to keep up with any local or national developments.
- To advise and support teachers in their planning and delivery of the subject.
- To ensure, annually that there are sufficient resources.