



Neville's Cross Primary School & Nursery

Design and Technology Policy

Date of policy: February 2023

Review date: February 2025

'Neville's Cross is an inclusive family where all are nurtured to become creative, confident and resilient learners supported to reach their unique potential. Our children develop skills to become active and respectful members of our school, community and society and during their time at Neville's Cross, make memories to cherish.'

In Design and Technology, it is our intent that children:

- use imaginative thinking, creativity and problem-solving skills to craft solutions and products
- have opportunities to value resilience and persistence, viewing some setbacks as inevitable part of the learning process
- engage in cycle of investigating, designing, making and evaluating, in response to a brief that identifies a user and use.
- talk about preferences, opinions, pros and cons, changes and reasons in calm, informed, constructive way, using relevant design and technical vocabulary
- develop practical, technical skills and the related knowledge needed to design and make simple products
- have opportunities to learn to safely and hygienically prepare, combine, cook, taste and evaluate food and build an understanding of healthy food choices

This Design and Technology policy is designed as a working document, which reflects the ethos and practice within the school in relation to the teaching of the subject. It has been written with due regard to the requirements of the Design and Technology National Curriculum and it will be monitored and evaluated according to changes within this documents and advice, as and when they arise.

Our Aims:

In Design and Technology in our school we aim to help our children to:

- build knowledge of the iterative design process, used by engineers, designers and problem solvers.
- develop specific practical skills and technical knowledge needed for designing and making products

In order to do this, we aim to:

- teach about the iterative cycle of designing, evaluating, making, evaluating, used by all engineers, designers and problem solvers.
- provide meaningful opportunities to engage in this iterative cycle.
- explain that the original design brief must shape subsequent designing and making
- encourage evaluation of existing real-life technological product, to inform design ideas
- foster imaginative thinking, questioning and creativity.
- nurture resilience and persistence, viewing 'setbacks' as an inevitable part of the learning process and simply signposting opportunities for adaptations.
- develop specific design and technical vocabulary.
- give opportunities to learn to prepare, taste and evaluate food.
- develop understanding of healthy and unhealthy food choices.
- teach a range of valuable practical skills and technical knowledge
- teach about basic safety and hygiene and its importance
- enable discussion of preferences, opinions, pros and cons, changes of plan and reasons in a calm, informed and constructive way.
- increase awareness of the role of design in everyday life products and evaluate some of these products' effectiveness and impact.
- foster enjoyment, satisfaction and purpose while designing and making.

Our Approach

Early Years:

The roots of Design and Technology are in more than one area of the EYFS curriculum:
Expressive Arts and Design – creating with materials and being imaginative

Physical Development – fine motor skills
Personal Social Development – managing self and executive function
Communication and Language
Maths

In Early Years many opportunities for engaging in the iterative design process stem from the children's own play, where they identify needs and create solutions. Adults join them to facilitate learning about the iterative design process and to help develop relevant practical skills.

We also recognise that certain practical skills need explicit teaching and regular opportunities for practise. Consequently, we explicitly teach cutting with scissors, cutting with curved end fruit knife, cutting with hole punches, joining by gluing, joining with split pins and treasury tags, joining by threading and joining click together construction kits.

We also have short projects, where a design brief is set and the children design and make products in response to this brief. The design brief will specify a user, product and use, often these will be fun fictitious characters. Here we explicitly teach certain areas of knowledge: a basic understanding of structure stability, mechanisms wheels and axels and basic food safety and hygiene. We explicitly introduce the children to the iterative design cycle.

KS1 &KS2:

Our Design and Technology is organised into D&T projects.

We have one D&T project per term.

Each project starts with a design brief, in other words a problem or challenge. This identifies 'something, somebody, some purpose', a user, use and function. The subsequent learning is centred around designing and making to answer this design brief.

Each project focusses on the basic iterative design process, learning more about it and applying it

Each project includes investigating and evaluating some real-life existing examples of design.

Each project has specific identified practical skills and areas of knowledge which are taught, practiced and applied within that project.

Each project is concluded by evaluating what has been made and designed in relation to the original design brief.

Each project takes around six lessons. Some are organised a lesson per week or per fortnight, others are blocked into a single week or fortnight.

Consequently, each design project at KS1 and KS2 has the following features and structure:

- The design brief: identifying user, product, function. The user can be real or fictitious
- Throughout the project explicit teaching, modelling and referring to the iterative process.
- Investigate and Evaluate Activity (IEA): exploring some existing products that are related to the skills and knowledge required for this project
- Focused Tasks (FT): explicit teaching of practical skills and key knowledge identified for this project and opportunities to practise these
- Design, Make Evaluate Activity (DMEA): revisiting the original design brief, creating and evaluating design ideas, selecting and refining a design, making the designed product with ongoing evaluation

and adapting as needed. Concluding by evaluating the final product, especially in relation to the original design brief.

Progression

Our Design and Technology curriculum is organised with progression in the two main areas:

- the iterative design process, used by engineers, designers and problem solvers
- practical skills and technical knowledge needed for designing and making products

Our medium term plans and progression documents show this in more detail. Below is a summary:

Iterative design process is developed project to project:

This is explicitly taught and applied in every Design and Technology project.

EYFS. Spring, Summer KS1 year A Autumn, Spring, Summer, year B Autumn, Spring, Summer.

LKS2 year A Autumn, Spring, Summer, year B Autumn, Spring, Summer. UKS2 year A Autumn, Spring, Summer., year B Autumn, Spring, Summer.

Practical technical skills and areas of knowledge

Our whole school long term plan for foundation subjects such as Design and Technology, is arranged on a two-year repeating program, with a year A and year B. The main areas (of Design and Technology practical skills and areas of knowledge) are visited cyclically and developed at least once in EYFS, Key Stage 1, Lower Key Stage 2 and Upper Key Stage 2, with the exception of food technology which is developed every year.

Here is a summary showing when key areas are presently revisited across the school;

STRUCTURES

Structures EYFS

Freestanding shell structures KS1 year A

Frame structure LKS2 year A, Shell net structures LKS2 year B

Frame structure UKS2 year A

MECHANICAL SYSTEMS:

Construction Kit wheels and axles EYFS

Wheels axles KS1 year A, Slider lever hinge KS1 year B

Levers and linkages LKS2 year A, Wheels axles LKS2 year A

Cam and axle UKS2 year A

FOOD:

Raw fruit EYFS

Raw fruit and veg KS1 year A, Raw fruit and veg KS1 year B

Healthy and varied food LKS2 year A, Healthy and varied food LKS2 year B

Culture and seasonality UKS2 year A, Culture and seasonality UKS2 year B

TEXTILES:

Joining with chunky thread and laces EYFS

Templates and joining KS1 year B

2D shape to 3D product LKS2 year B

Combining different fabric shapes UKS2 year B

ELECTRICAL SYSTEMS:

Simple Circuits and switches LKS2 year B

Circuits UKS2 year A, Circuits switches UKS2 year B

COMPUTING: we are in the process of developing computer control and computer aided design D&T

Computer control simple circuit LKS2 year B

Monitoring and computer control circuits UKS2 year A, Computer aided design UKS2 year B, Computer control circuit UKS2 year B

Assessment

In Reception Design and Technology is assessed within Expressive Arts and Design (EAD). Assessment is ongoing and updated on cohort trackers each September, December, March and June. These identify which children are working above, expected, working towards and significantly below our termly expectations, In June Reception assess using the Early Learning Goal statements for Expressive Arts and Design. Our evidence is from knowing and working with the children, on Tapestry and visible in children's progress. Assessment informs planning and targeted interventions.

In KS1 and KS2 we collect evidence for our assessments by working with and watching the children, referring to their individual Learning Journey booklets and using SeeSaw observations. The assessment information is summarised termly, at the end of each D&T project, using our Summative Assessment documents. These identify termly which children are emerging, developing, secure, and secure-plus, in the subject's skills and knowledge.

This assessment information is used by staff to monitor the child's progress and adapt projects, provision and support to improve learning. The subject lead uses the information to monitor attainment, progress and progression contributing to evaluation of provision, teaching, learning and the effectiveness of the curriculum.

Equality and SEND

All of our children have equal access to Design and Technology lessons and to the resources available. We recognise that some children take longer to develop certain practical technical skills and understanding of the areas of knowledge. We realise that the iterative design process challenges children who are in the early stages of developing resilience and executive function. We cater for those children by providing additional opportunities for skills development- practising specific practical skills and practising developing resilience and evaluative skills within the iterative process. We aim that they access the same skills and areas of knowledge as other children, whilst recognising that occasionally adapted tools, techniques, materials or tasks may be required. Additional strategies adopted by staff can facilitate achievement and progress, including support revisiting prior learning, succinct explicit instructions and vocabulary, adaptation of investigative tasks and focused practical skills tasks, scaffolding seeing connections, guiding applying skills and knowledge and scaffolding organisation of tasks. Teachers can work with the SENCO and D&T subject leader to adapt certain resources and tasks for children with physical, cognitive and emotional differences.

Role of the subject lead

- To provide coaching and support to staff, to better implement effective teaching of Design and Technology

- To monitor the quality and effectiveness of teaching and learning in Design and Technology, through evaluating plans, Tapestry and SeeSaw evidence, Learning Journey Booklet evidence, talking to children, displays, visiting classes and talking to staff
- To evaluate the standards attained by children in each key phase and progression across these
- To plan strategically to improve the curriculum, provision, progression and standards of the subject
- To ensure staff have opportunity for CPD to develop their skills, particularly in Computing, CAD and CC
- To monitor and manage consumable and permanent resources used in Design and Technology.

Monitoring and Review

The Design and Technology Lead to monitor the effectiveness of this policy, reporting to the Head and Governors on the effectiveness of it and, if necessary, makes recommendations for further improvements.

This policy will be formally reviewed by the Governors every two years. In the event of new guidance being made available/identification of more effective strategies, this review date will be moved forward.