Curzon D&T Curriculum

Our Intent

Curzon specifc aims of D&T

Design and Technology is an area of the curriculum where a pupil can explore their creativity and learn to invovate. Technological change has been at the heart of human development: it is technology which revolutionised clothing, literacy, cooking, transport and more recently, the impact of technology on our communication has been revolutionary. When pupils are taught to see the impact of technology on our lives today and throughout history, they can be inspired to take their place within this process and begin to appreciate how their skills can impact on the future of our human socieity and our planet as a whole.

By giving pupils the opportunities to creatively research and explore the designed and made world in which we live, we ensure they become aware of how design and function underpins every simple and complex machine around us. Pupils are given opportunities to explore the properties of different materials and their suitability for differing functions, they are given a design need and asked to find the solution. Through this mixture of teaching and exploration, the pupils learn to research and learn from the design found around us and to compare ideas and refine their design process. Through the building of design specific skills from Reception to Year 6, pupils at Curzon use their growing substantive and disciplinary knowledge to access and explore the functionality in the world around them.

We have high ambitions for all pupils. Our ethos is to enable all pupils to reach their potential. We do not place a ceiling on attainment. Through carefully designing our curriculum to include a range of different activities (e.g. group work, use of different materials), we ensure that all pupils, including SEND, can participate fully. Our curriculum is designed to ensure that higher attainers are challenged by developing the abillity to self evaluate their work and make their own improvements.

Whilst following the National Curriculum, we have chosen topics according to the following criteria and made our D&T curricum unique to Curzon. We aim to provide a range of experiences and topics to enable all our pupils, including those who are disadvantaged, to develop their cultural capital.

Topics chosen to provide strong cross curricular links

We emphasise cross-curricular links between D&T and other subjects as we aim that pupils retain their substantive and disciplinary knowledge by applying it in more than one curriculum area. For example, Year 5 design and create an Anglo-Saxon replica museum linked to their history unit. Year 3 design and create rainforest dioramas linked to their Geography work.

Topics chosen to fit with the school's aim of respecting the environment

Being set in an area of oustanding natural beauty, we draw on our local surroundings throughout the school. Each class has half a term of Forest School aimed at teaching pupils how to care for the environment and how to design and create using natural materials. Forest school also teaches pupils about controlled risks and specific skills such as whittling. In KS1 we have a unit on recycling art and throughout the school we teach our pupils to reuse materials in their projects and to use any new materials sparingly and without wastage.

Our D&T curriculum promotes good nutrition

We aim that our pupils know how to create balanced meals and understand the importance of eating healthily through our cookery programme. This is important in our society where increasingly there are issues with obesity and eating disorders.

Sharing learning across different classes

We have planned our curriculum so that there are similar themes in different years groups. For example, KS1 and Year 5 create mechanisms. By having different year groups working on similar paper themes, we aim to give them opportunities to share their learning between classes. The planned purpose of some units is sharing learning with a younger class, for example Year 3 share their dioramas with Year 2.

Our D&T curriculum promotes our vision and key values

Kindness and respect: our D&T curriculum teaches all pupils to give respectful and constructive feedback to others. We teach respect of the environment and for materials used throughout the school.
Courage: our D&T curriculum encourages pupils to develop the confidence to try out new techniques and to persevere to improve their work.
All pupils understand that D&T is a journey and that experimenting and making mistakes is part of the learning process (linked to our vision of growing like the mustard seed).
How this links with our school vision: growing in creativity and imagination. Growing in self confidence as a designer and technician.

Knowledge and skills that we intend our pupils to achieve

We have identified three key skill strands and have mapped the development of each of these skills throughout the year groups, identifying what pupils in each year group need to attain in each of the strands by the end of each academic year.

Year group	Developing, planning and communication ideas.	Working with tools, equipment, materials and components to make quality products (including food)	Evaluating processes and products
1	• Draw on their own experience to help generate ideas • Suggest ideas and explain what they are going to do • Identify a target group for what they intend to design and make • Model their ideas in card and paper	• Make their design using appropriate techniques • With help measure and shape a range of materials • Use tools: scissors and a hole punch safely • Select and use appropriate fruit and veg processes and tools • Use basic food handling hygienic practices and personal hygiene	• Evaluate their product by discussing how well it works in relation to the original purpose.
2	• Generate ideas by drawing on their own and other people's experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make • Identify simple design criteria • Make simple drawings and label parts	• Begin to select tools and materials; use vocab to name and describe them • Measure and cut and with some accuracy • Assemble, join and combine materials in order to make a product • Follow safe procedures for food safety and hygiene	• Evaluate their product by discussing how well it works in relation to the original purpose.

GDS Stretch and challenge	Make detailed annotations and drawings including measurements Amend their product to improve its outcome stick tightly to the brief and consider the end user's needs and preferences throughout the process	Modify and refine ideas as they progress explaining clearly why they have made changes Display high quality presentation and precision throughout the process of design and make. Demonstrate a creative response to the problem	Use subject specific words when evaluating a product and identify future improvements Pupils will likely amend their product to improve its outcome, think critically about and comment on other products and their own product
3	• Generate ideas for an item, considering its purpose and the user/s • Identify a purpose and establish criteria for a successful product • Plan the order of their work before starting • Explore, develop and communicate design proposals by modelling ideas • Make drawings with labels when designing	• Select tools and techniques for making their product • Measure, mark out, cut score and assembly component with more accuracy • Work safely and accurately with a range of simple tools • Think about their ideas as they make progress and be willing to change things if this helps them improve their work • Demonstrate hygienic food preparation and storage	• Evaluate their product against original design criteria – how well it meets its intended purpose • Disassemble and evaluate familiar products
4	• Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing specific features • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes and suggesting	• Select appropriate tools and techniques for making their product • Measure mark out, cut and shape a range of materials using appropriate tools, equipment and techniques	• Evaluate their work both during and at the end of the assignment • Evaluate their products starting to carry out appropriate tests

	alternative methods of making if the first attempts fail • Evaluate products and identify criteria that can be used for their own designs	• Join and combine materials and components accurately in temporary and permanent ways • Use simple graphical communication techniques	
5	• Generate ideas through brainstorming and identify a purpose for their product • Draw up a specification for their design • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes and suggestion alternative methods of making if the first attempts fail • Use results of investigations and information sources when planning designs	• Select appropriate materials, tools and techniques • Measure and mark out accurately • Use skills in using different tools and equipment safely and accurately • Weigh and measure accurately • Apply the rules for basic food hygiene and other safe practices • Cut and join with accuracy to ensure a good quality finish to the product	• Evaluate a product against the original design specification carrying out appropriate tests • Evaluate it personally and seek evaluation from others
6	• Communicate their ideas through detailed labelled drawings • Develop a design specification • Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways • Plan the order of their work choosing appropriate materials, tools and techniques	• Select appropriate tools, materials, components and techniques • Use tools safely and accurately • Construct products using permanent joining techniques • Make modifications as they go along	• Evaluate their products, identifying strengths and areas for development and carrying out appropriate tests • Record their evaluations using drawings with labels • Evaluate against their original criteria and suggest ways their product could be improved
GDS Stretch and challenge	Draw on detailed knowledge of technologists, engineers and practitioners to inform own plans.	Independently realise their intentions working accurately with a range of materials. Offer coaching and guidance to peers.	Detailed evaluation of where in the design process the product could have been improved.

Our Implementation

Organisation of topics

Each class has half a term of Forest School and a day of cookery each year.

D&T projects cover different skills and different materials. These are often linked to humanities: In Geography, Year 3 research the four different zones of the rainforest canopy and reinforce this learning through the creation of a rainforest diorama. Year 6 design a Fair Trade cereal bar and its packaging which shows how the money from fair trade goes directly to support the farmers and creates cross curricular links with Maths and Geography. KS1 make shelters as part of their unit on houses. As part of their unit on London and Tower Bridge, Year 5 visit the local secondary school and learn about pulleys and levers. Then they create their own moving bridges. Year 3 learn about Stone Age technologies through their visit to Ufton Court and reinforce this through their Forest School lessons (e.g. through making fires).

How we teach D&T

In EYFS pupils have discrete D&T sessions each week, half a term of forest school and a day of cookery sessions. D&T is included in continous provision. For example, constructing homes and obstacle course using large equipment.

Throughout the school, skills are built up in carefully sequenced lessons within each unit. Many D&T units start with pupils evaluating and dissembling objects. They plan their own designs to a specific brief and audience, make them and then evaluate them. Lessons start and end with a recap of prior learning. Throughout the school, pupils are given the opportunity to record their designs and evaluations. Pupils are taught focused skills in units, such as sawing; making levers. We place an emphasis on pupils making choices when making products. For example, younger pupils choose which materials to use to decorate their moving vehicles. In KS2, pupils choose from a range of materials to use and select how best to assemble them. They also choose amounts such as how much water and flour to use when making papyrus. Older pupils choose ingredients for their cookery. In some units, pupils are given a chance to refine or have another go at their product after they have done an initial evaluation, developing their resilience. Pupils are taught how to support each other and make constructive and respectful comments. They are encouraged to take pride in their work through resilience when learning new skills and techniques.

Forest school sessions focus on caring for the environment, working with natural materials and working with others. As pupils go through the school, they use a wider range of tools and are given the opportunity to take more (controlled) risks. Curzon has a qualified Forest School leader and qualified cookery leader. Food technology is implemented across the school with pupils developing an understanding of where food comes from, the importance of a varied

and healthy diet and how to prepare food and cook safely. As pupils go through the school, they are given more independence and choices of ingredients and learn to use a wider range of tools safely.

Progression of knowledge and skills in D&T

Skills and substantive knowledge (objects, designers, mechanisms, recipes, safety instructions) for each year group are carefully mapped out to ensure progression throughout the school.

Curzon Long Term Curriculum Planning for D&T

EYFS DT is taught mainly through continuous provision covering the following key skills and following the same broad units at KS1:
Creating with Materials ELG- 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;

Our EYFS DT curriculum also provides rich opportunities for pupils to develop skills in other areas e.g. gross and fine motor skills; the natural world, people and communities; listening and attention; speaking; self-regulation - working with others and show awareness of their feelings; managing self (confidence, self-resilience and perseverance).
DT in KS1 is taught over a 2 year rolling programme. The units are carefully mapped out so that each year pupils have a wide range of experiences.

Italics denote where D&T skills are taught in other curriculum areas.

KS1 YEAR A

Autumn	Spring	Summer	Skills KS1
Great Fire of London- *focus on different materials used to make homes. (CC History)* *Investigate materials used for building houses* *understand which materials are best for building houses* *Create homes*	**Forest School** (emphasis on team work, creating sculptures and shelters) **Cookery** (trying and creating range of nutritional meals) ***Mini shelter (CC Science)*** **Playgrounds** *Purpose: use a range of equipment and tools to make a playground with moving parts which they can relate to.* Investigate different playgrounds Design equipment Research playground markings Learn about Imagination Playground David Rockwell Create own playground design Evaluate own design		**EYFS** Develop own ideas and select appropriate materials to do so independently. Talk about what they are going to do and why. Return and review previous learning building up from initial ideas. **YEAR 1** **Developing, planning and communication ideas** Draw on their own experience to help generate ideas Suggest ideas and explain what they are going to do Identify a target groups for what they intend to design and make **Working with tools, equipment, materials and components to make quality products (including food)** Make their design using appropriate techniques With help measure and shape a range of materials Use tools: scissors and a hole punch safely Select and use appropriate fruit and veg processes and tools

			Use basic food handling hygienic practices and personal hygiene **Evaluating processes and products** Evaluate their product by discussing how well it works in relation to the original purpose. **YEAR 2** **Developing, planning and communication ideas** Generate ideas by drawing on their own and other people's experiences Develop their design ideas through discussion, observation, drawing and modelling Identify a purpose for what they intend to design and make Identify simple design criteria Make simple drawings and label parts **Working with tools, equipment, materials and components to make quality products (including food)** Begin to select tools and materials; use vocab to name and describe them Measure and cut and with some accuracy Assemble, join and combine materials in order to make a product Follow safe procedures for food safety and hygiene **Evaluating processes and products**

			Evaluate their product by discussing how well it works in relation to the original purpose.

KS1 YEAR B

Autumn	Spring	Summer	Skills KS1
Making a car Purpose: make a vehicle of choice with moving wheels to follow a given route. Investigate different types of vehicles. Investigate toy cars Learn about the function of axles, wheels Design own car Create own car Try out and evaluate own car	**Forest School** (emphasis on team work, creating sculptures and shelters) **Cookery** (trying and creating range of nutritional meals) ***Umbrella (CC Science)***	***Homes*** *-focus on how cooking evolved within the different homes from the past: cooking over open fire, cooking range, gas/electric cookers, microwaves (CC History)*	**EYFS** Develop own ideas and select appropriate materials to do so independently. Talk about what they are going to do and why. Return and review previous learning building up from initial ideas. **YEAR 1** **Developing, planning and communication ideas** Draw on their own experience to help generate ideas Suggest ideas and explain what they are going to do Identify a target groups for what they intend to design and make **Working with tools, equipment, materials and components to make quality products (including food)**

			Make their design using appropriate techniques With help measure and shape a range of materials Use tools: scissors and a hole punch safely Select and use appropriate fruit and veg processes and tools Use basic food handling hygienic practices and personal hygiene **Evaluating processes and products** Evaluate their product by discussing how well it works in relation to the original purpose. **YEAR 2** **Developing, planning and communication ideas** Generate ideas by drawing on their own and other people's experiences Develop their design ideas through discussion, observation, drawing and modelling Identify a purpose for what they intend to design and make Identify simple design criteria Make simple drawings and label parts **Working with tools, equipment, materials and components to make quality products (including food)**

			Begin to select tools and materials; use vocab to name and describe them Measure and cut and with some accuracy Assemble, join and combine materials in order to make a product Follow safe procedures for food safety and hygiene **Evaluating processes and products** Evaluate their product by discussing how well it works in relation to the original purpose.

YEAR 3

Autumn	Spring	Summer	Skills
Forest School (builds on KS1 to include more use of tools) **Cookery** (builds on KS1 to include more use of equipment and skills e.g. measuring and chopping) ***Stone age fires and shelter*** *Forest school* *Trip to Chiltern Open Air Museum- (History)*	**Creating rainforest dioramas with moving parts (CC Art and Geography)** Purpose: create a diorama to teach a KS1 pupil about the rainforest -learn about dioramas and their purpose -learn about animals and plants in the rainforest -investigate flaps and levers -investigate ways of making items 3D and fixing them to the box -create rainforest diorama evaluate	**Making papyrus** Purpose: write a hieroglyphics message on created papyrus -learn about use of papyrus -investigate ways of joining strips -investigating smoothing techniques understand how key events and individuals in design and technology have helped shape the world (2 lessons) **Nature through textiles (CC Art)**	**Developing, planning and communication ideas** Generate ideas for an item, considering its purpose and the user/s Identify a purpose and establish criteria for a successful product Plan the order of their work before starting Explore, develop and communicate design proposals by modelling ideas Make drawings with labels when designing

		Purpose: to create a collaborative piece using a range of sewing stitches and materials -investigate different leaves -Combining art topic to create a 3D effect piece. - research and design a leaf or flower of choice to recreate using sewing stitches -recreate leaf-add veins -use wadding to make the leaf 3D	**Working with tools, equipment, materials and components to make quality products (including food)** Select tools and techniques for making their product Measure, mark out, cut score and assembly component with more accuracy Work safely and accurately with a range of simple tools Think about their ideas as they make progress and be willing to change things if this helps them improve their work Demonstrate hygienic food preparation and storage **Evaluating processes and products** Evaluate their product against original design criteria – how well it meets its intended purpose

YEAR 4

Autumn	Spring	Summer	Skills

Forest School (builds on KS1 to include more use of tools) **Cookery** (builds on KS1 to include more use of equipment and skills e.g. measuring and chopping)	**Creating picture frames (CC Art) woodwork skills** Purpose: To create a free-standing picture frame to give to a family member -investigate picture frames (landscape, portrait, free standing, stand) -focused woodwork tasks: sawing Joining techniques jinx corners -design own frame -create own frame -decorate frame to fit purpose -evaluate frame	**Making a moving toy** Purpose: use cams to create a moving toy Investigate how cams work Focused cams tasks Make protype cams Design toy Create toy using cam for the moving part Evaluate toy	**Developing, planning and communication ideas** Generate ideas, considering the purposes for which they are designing Make labelled drawings from different views showing specific features Develop a clear idea of what has to be done, planning how to use materials, equipment and processes and suggesting alternative methods of making if the first attempts fail **Working with tools, equipment, materials and components to make quality products (including food)** Select appropriate tools and techniques for making their product Measure mark out, cut and shape a range of materials using appropriate tools, equipment and techniques Join and combine materials and components accurately **Evaluating processes and products** Evaluate their work both during and at the end of the assignment Evaluate their products starting to carry out appropriate tests

YEAR 5

Autumn	Spring	Summer	Skills
Anglo Saxon artefacts and museum *Purpose: recreate an object based on an original artefact* Researching artifacts Choosing artefact Planning artefact including selecting materials, measurements Making artifacts Evaluating artifacts Creating museum **(CC History)**		**Forest school** (builds on lower key stage 2 with greater use of tools, skills such whittling, creating fires) **Cookery** (builds on lower key stage 2 with greater independence and wider range skills e.g. whisking, folding) ***Designing using Sketch up (CC Computing)*** **Making bridges (CC Geography)** Purpose: recreate a bridge to withstand different forces Visit to local secondary school Research London Bridge -teach strengthen, stiffen and reinforce -understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages.) -make bridges Test and evaluate bridges	**Developing, planning and communication ideas** Generate ideas through brainstorming and identify a purpose for their product Draw up a specification for their design Develop a clear idea of what has to be done, planning how to use materials, equipment and processes and suggestion alternative methods of making if the first attempts fail Use results of investigations and information sources when planning designs **Working with tools, equipment, materials and components to make quality products (including food)** Select appropriate materials, tools and techniques Measure and mark out accurately Use skills in suing different tools and equipment safely and accurately Weigh and measure accurately Apply the rules for basic food hygiene and other safe practices Cut and join with accuracy to ensure a good quality finish to the product **Evaluating processes and products**

			Evaluate a product against the original design specification carrying out appropriate tests Evaluate it personally and seek evaluation from others

YEAR 6

Autumn	Spring	Summer	Skills
Creating light up Christmas decorations (CC Science) *understand and use electrical systems in their products* Plan a light up Christmas card for someone at home Make the card using copper wire and applying knowledge of circuits Evaluate card	**Fair trade bars (CC Geography)** Purpose to create own bar to offer to others to promote the use of fairtrade products Research fair trade products and ingredients Design bar- recipe, packaging Create bar choosing own recipe Evaluate bar	**Forest school** (builds on lower key stage 2 with greater use of tools, skills such whittling, creating fires) **Cookery** (builds on lower key stage 2 with greater independence and wider range skills e.g. whisking, folding) ***Clay tagines (CC History, art)*** **Designing Ancient Bagdad towns using (CC Computing-Tinkercad, History)** **Cranes** Purpose: create a crane to move an object from port to boat. Applying skills and knowledge learnt throughout their time at Curzon.	**Developing, planning and communication ideas** Communicate their ideas through detailed labelled drawings Develop a design specification Plan the order of their work choosing appropriate materials, tools and techniques **Working with tools, equipment, materials and components to make quality products (including food)** Select appropriate tools, materials, components and techniques Use tools safely and accurately Construct products using permanent joining techniques Make modifications as they go along **Evaluating processes and products**

		Combining D&T skills taught throughout the school (i.e. woodwork skills from Y4, mechanisms from Y5)	Evaluate their products, identifying strengths and areas for development and carrying out appropriate tests Record their evaluations using drawings with labels Evaluate against their original criteria and suggest ways their product could be improved

Assessment

Assessment of pupils' learning in Design Technology is an ongoing monitoring of pupils' understanding, knowledge and skills by the class teacher throughout lessons. This assessment is then used to inform differentiation, support and challenge for each pupil. Summative assessment based on our skills overview is conducted termly by class teachers across each year group to inform the subject leader of standards. D&T is also monitored by the subject leader throughout the year in the form of D&T book monitoring, looking at outcomes and holding pupil interviews to discuss their learning and understanding and establish the impact of the teaching taking place. The D&T subject leader meets with the curriculum committee annually to discuss their actions.

Impact

The structure of the D&T curriculum ensures that pupils develop their knowledge and skills. Pupils learn to understand and apply the key principles of D&T: designing, making and evaluating. Knowledge and skills are built up progressively in each area so that by the end of KS2 our pupils are able to plan in detail choosing the order of work, materials, tools and techniques. They develop accuracy when working with materials and are able to evaluate their products against the specification and make improvements. D&T is taught in a supportive and constructive way enabling our pupils to try out new skills, take controlled risks and grow in the Curzon value of courage.

Completed products are often shared with parents who are invited to view projects. This helps our pupils develop a sense of pride. The D&T curriculum at Curzon contributes to pupils' personal development in creativity, independence, judgement, risk taking and self-reflection.