



Cedars Park Primary School

Design and Technology Long Term Plan

Intent

Design and Technology is an inspiring, rigorous and practical subject. At Cedars Park, we value the creative curriculum and believe that it can have a powerful and positive effect on children, helping them to become confident, creative learners who are able to express their individual interests, thoughts and ideas. We ensure that our curriculum is accessible for all to enable all learners, including those with Special Educational Needs (SEN). This is achieved by our planning being adapted to meet the needs and abilities of all. Where there are barriers, we pride ourselves on embracing different approaches, seizing new opportunities to ensure high-quality learning, and making reasonable adjustments.

We encourage the children to use their creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts considering their own and others' needs, wants and values. We aim to make links to designs and designers throughout history, providing opportunities for children to critically reflect upon and evaluate others' designs and the overall effectiveness of the product before evaluating their own. As pupils progress, we support them to be able to think critically and develop a more rigorous understanding of design and technology.

Through DT work in the classroom, the children at Cedars Park have the opportunity to develop their skills in mechanisms, structures, textiles, mechanical systems, electrical systems and cooking and nutrition. These areas are developed continuously throughout the school from Early Years through to Year 6 and the children have the opportunity to revisit skills from previous years before learning new ones. We encourage children to express individuality in their work and to keep their own personalised sketchbooks where they can explore ideas, be inventive and take risks. When children leave Cedars Park, we expect them to have a wide range of well-developed skills in the areas of our curriculum that they can then build on and develop further as they continue in their education.

Implementation

At Cedars Park, DT is taught each half term with key skills covered in every group, tailored to meet individual pupils' needs, including those with SEN. Teachers plan sequences of lessons that build on and develop the children's skills culminating in a final piece.

The skills and knowledge that children develop throughout each DT topic are mapped across each year group and across the school to ensure progression. The teaching of DT across the school follows the National Curriculum through the use of planning resources from Kapow Primary, adapted to suit our curriculum topics. 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.



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The teaching of DT follows the design, make and evaluate cycle, with technical knowledge and relevant vocabulary shared at each stage. The design process is always linked to real life, relevant contexts to give meaning to learning. When making their products, the children are given choice and a wide range of tools and materials to choose from. When evaluating, the children are taught to evaluate their own products against the initial design criteria to see how well it has met the needs and wants of the intended user and to identify any changes that could be made.

Impact

The impact of our DT curriculum can clearly be seen in the children's sketchbooks which pass on with them to the following year group. At the beginning of each unit, a detailed medium term plan outlines the main learning objectives alongside the skills that the children will build on and those which will follow. The opportunity to evaluate and reflect on the learning is planned for towards the end of the unit to enable the children to see how their learning is progressing and where they need to take it next. Throughout the unit of work, key assessment success criteria are identified and the children are able to self-assess against them. Class teachers then use the children's research and preparatory work, along with the final piece in order to make a judgement as to whether each child is working towards, at or above the expected level.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Early Years	• Making binoculars • Joining materials • Representing skeletons using mixed media • Make a house for a goldilocks and the wolf • Class bird making - papercraft	• Design and make gingerbread men • Construct a tower for Rapunzel • Christmas crafts, decorations, Christmas cards	• clay/plasticine dinosaur modelling • Police hats • Junk modelling - emergency vehicles focussing on moving parts • Concertina animal puppets	• Mixed media vehicle making • Junk modelling space vehicles • Design a new way to travel • Flag designing and making	• Spider hand puppets • Webs that shine and glimmer in the sun	• Make a swinging monkey with moving parts • Recycled milk bottle elephants

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Year 1	Focus on transition into KS1	Structures: Constructing a Windmill Construct a windmill to complete a request from a user. Develop an understanding of different types of windmill, how they work and their key features. Begin to use technical skills such as making evenly spaced cuts and adding weight to ensure a successful structure.	Textiles: Puppets Explore different ways of joining fabrics before creating hand puppets based upon characters from a well-known fairytale. Develop technical skills of cutting, glueing, stapling and pinning.	Mechanisms: Making a Moving Story Book Experiment with sliders before planning and making three pages of a moving story book, based on a familiar story, drawing the page backgrounds, creating the moving parts and assembling it.	Food: Smoothies Handle and explore fruits and vegetables and learn how to identify fruit, before undertaking taste testing to establish chosen ingredients for a smoothie they will make, with accompanying packaging.	Mechanisms: Wheels and Axles Learn about the main components of a wheeled vehicle. Develop understanding of how wheels, axles and axle holders work; problem-solve why wheels won't rotate; to design and build their own vehicle designs.
Year 2	Food: A balanced diet Explore and learn what forms a balanced diet, pupils will taste test combinations from different food groups that will inform a wrap design of their choice which will include a healthy mix of protein, vegetables and dairy.	None due to Christmas production	Mechanisms: Making a moving monster After learning the terms: pivot, lever and linkage, pupils design a monster that will move using a linkage mechanism. Pupils practise making linkages and experiment with various materials to bring their monsters to life	Structures: Baby Bear's chair Using the tale of Goldilocks and the Three Bears as inspiration, pupils help Baby Bear by making him a brand new chair, exploring different shapes and materials. When designing the chair, they consider his needs and what he likes.	Textiles: Pouches Introduction to sewing. Pupils make their own template, accurately cut their fabric and sew a basic running stitch.	Mechanisms: Fairground Wheel Design and create a functional fairground wheel, consider how the different components fit together so that the wheel rotates and the structure stands freely. Select appropriate material properties and develop their cutting and joining skills. Research existing

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						structures and survey to further inform the design.
Year 3	Food: Eating seasonally Pupils discover when and where fruits and vegetables are grown and learn about seasonality in the UK. They respond to a design brief to design a seasonal food tart using ingredients harvested in the UK in May and June.	Textiles: Cross-stitch and applique cushions. Introduce two new skills to add to the pupils' repertoire: cross stitch and appliqué. Pupils apply their knowledge to the design, decoration and assembly of their own cushions or Egyptian collars.	Mechanical systems: Pneumatic toys Design and create a toy with a pneumatic system, learning how trapped air can be used to create a product with moving parts. Pupils are introduced to thumbnail sketches and exploded diagrams.	Digital World: Wearable technology Design, code and promote a piece of wearable technology to use in low light conditions, developing their understanding of programming to monitor and control products to solve a design scenario.	Structures: Constructing a castle Learning about the features of a castle, pupils design and make one of their own. They will also be using configurations of handmade nets and recycled materials to make towers and turrets before constructing a stable base.	Electrical Systems: Electric poster An introduction to information design and electrical systems, pupils create an electric poster using a basic circuit to develop a museum display about The Romans.
Year 4	Structures: Pavilions Exploring pavilion structures, learning about what they are used for and investigating how to create strong and stable structures before designing and creating their own pavilions, complete with cladding.	Food: Adapting a recipe Work in groups to adapt a simple biscuit recipe, to create a biscuit suited to a chosen target audience. They ensure that their creation comes within a given budget of overheads and ingredients.	Textiles: Fastenings Building upon their sewing skills from previous years, pupils design and create a book sleeve; exploring a variety of fastenings and selecting the most appropriate for their design based on strength and appropriate-use.	Mechanical system: slingshot cars Transform lollipop sticks, wheels, dowel and straws into a moving car. Pupils use a glue gun to construct, make the launch mechanism, design and create the chassis of a vehicle using nets.	Digital World: Mindful moments timer Design, program, prototype and brand a Micro:bit timer to a specified amount of minutes. Pupils carry out research and existing product analysis to determine how a programmable product could be personalised to their	Electrical Systems: Torches Pupils apply their scientific understanding of electrical circuits to create a torch made from recycled and reclaimed materials and objects. They design and evaluate their product against set design criteria.

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					needs.	
Year 5	Mechanical Systems: Making a pop-up book Create a four-page pop-up story book design, incorporating a range of functional mechanisms that use levers, sliders, layers and spacers to give the illusion of movement through interaction.	Electrical Systems: Doodlers Explore series circuits further and introduce motors. Explore how the design cycle can be approached at a different starting point, by investigating an existing product, which uses a motor, to encourage pupils to problem-solve and work out how the product has been constructed, ready to develop their own.	Digital World: Monitoring devices Program a Micro: bit animal monitoring device that will alert the owner when the temperature is not optimal. Develop 3D CAD skills by learning how to navigate the Tinkercad interface and essential tools.	Food: What could be healthier? Research and modify a traditional bolognese sauce recipe to improve the nutritional value. Cook improved version and create packaging that fits design criteria. Learn about where beef comes from.	Structures: Bridges After learning about various types of bridges and exploring how the strength of structures can be affected by the shapes used, create their own bridge and test its durability - using woodworking tools and techniques.	Textiles: Design a stuffed toy Create a stuffed toy by applying skills learnt in previous units. Introduce blanket stitch.
Year 6	Digital World: Navigating the world Program a navigation tool to produce a multifunctional device for trekkers. Combine 3D virtual objects to form a complete product concept in 3D computer-aided design modelling software.	Electrical systems: Steady hand game Design and create a steady hand game, use nets to create the bases and apply knowledge of electrical circuits to build an operational circuit with a buzzer that completes the circuit when the handle makes contact	Textiles: Waistcoats Select fabrics, use templates, pin, decorate and stitch materials together to create a waistcoat for a person or purpose of their choosing. Create or use a pattern template to fit a desired person or item (e.g. teddy bear).	None due to SATs focus.	Mechanical Systems: Automata toys Use woodworking skills, pupils construct an automata; measuring and cutting their materials, assembling the frame, choosing cams and designing the characters that sit on the followers to form	Structures: Playgrounds Design and create a model for a new playground featuring five apparatus, made from three different structures. Using a footprint as the base, practise visualising objects in plan view and get creative



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		with the wire.			an interactive shop display.	including natural features. Food: Come dine with me Research and prepare a three-course meal and taste-test and score their food. Research the journey of their main ingredient from 'farm to fork' and write a favourite recipe.
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