OUR

Design & Technology

CURRICULUM

SUPPORT • ACHIEVE • CELEBRATE

The teaching of DT at Cherry Lane Primary School is underpinned by the principles of the Cherry Lane Way.

The Cherry Lane Way

Learn Actively

Ask and Answer Questions

Understand Key Vocabulary

Link Learning to Existing Knowledge

INTENT

"Design and technology is about providing opportunities for students to develop their capability, combining their designing and making skills with knowledge and understanding in order to create quality products"

At Cherry Lane Primary, we value and are dedicated to the teaching of Design and Technology. We see this as a fundamental part of school life and should be fully inclusive to every child. We trust that by developing this, we can contribute to the quality of our children's lives, both within and beyond school. We see design and technology as a means to support learning in a range of ways. The skills that are developed in Design and technology can be transferred across the curriculum and thus aid learning to create an 'Enriched Curriculum' for our children.

Using creativity and imagination, pupils are taught design and how to make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. We teach a broad range of subject knowledge and draw on disciplines such as Mathematics, Science, Engineering, Computing and Art. Pupils are taught to build and apply a repertoire of knowledge, understanding and skills to ensure progression through the key stages. Design Technology projects are often made cross curricular - linking to

other subjects taught. Cherry Lane students learn to take risks, enterprising, become resourceful and capable citizens through evaluation of past and present design and technology.

Aims:

- *Develop creative, technical and imaginative thinking in children and to develop confidence to participate successfully in an increasingly technological world.*
- *Enable children to talk about how things work and to develop their technical knowledge,*
- *Apply a growing body of knowledge, understanding and skills in order to design and make prototypes and products for a wide range of users,*
- *Encourage children to select appropriate tools and techniques when making a product, whilst following safe procedures,*
- *Develop an understanding of technological processes and products, their manufacture and their contribution to our society,*
- *Foster enjoyment, satisfaction and purpose in designing and making things,*
- *Critique, evaluate and test their ideas and products, and the work of others,*
- *Understand and apply the principles of nutrition and to learn how to cook,*
- *Understand how key events and individuals in design and technology have helped shape the world.*

IMPLEMENTATION

"Design and Technology in primary schools develops young children's skills and knowledge in design, structures, mechanisms, electrical control and a range of materials, including food. Design and Technology encourages children's creativity and encourages them to think about important issues"

To ensure high standards of teaching and learning in design and technology, we implement a curriculum that is progressive throughout the whole school. Design and Technology (D.T) is taught as part of a termly topic, focusing on knowledge and skills stated in the National Curriculum. At Cherry Lane, we ensure that D.T is given the same importance as the core subjects, as we feel this is important in enabling all children to gain 'real-life' experiences.

The D.T curriculum at Cherry Lane Primary School is based upon the 2014 Primary National Curriculum in England, which provides a broad framework and outlines the knowledge and skills taught in each Key Stage. Teachers plan lessons for their class using our progression of knowledge and skills document (Shown Below). Teachers can use this document to plan their design and technology lessons suitable to their class's interests and what they want to learn about. The progression document ensures the curriculum is covered and the skills/knowledge taught is progressive from year group to year group.

When teaching design and technology, teachers should follow the children's interests to ensure their learning is engaging, broad and balanced. A variety of teaching approaches are used based on the teacher's judgement. Children showing extensive aptitude in design and technology will be celebrated in class and their work displayed.

We have a fully functioning food technology kitchen which all year groups have access to use the facilities during their topics. Children also get opportunities throughout the year to explore this area and use the equipment through topics based cooking lessons. This is a good opportunity for the children to apply their skills and practise using different equipment in a kitchen setting.

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

PROGRESSION OVERVIEW

KS1&KS2 - DT

National curriculum

Pupils should be taught:

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 and school, gardens and playgrounds, the local community, industry and the wider environment].

Key Skill	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Developing, designing, planning and communicating ideas.	• 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 on card and paper. • Develop their design ideas applying findings from their earlier research. • Build structures exploring how they can be made stronger, stiffer and more stable. • Explore mechanisms.	• 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. • Build structures exploring how they can be made stronger, stiffer and more stable. • Explore mechanisms.	• 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.	• 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. • Evaluate products and identify criteria that can be used for their own designs.	• 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, processes, and suggesting alternative methods of making product/s if the first attempts fail. • Use results of investigations, information sources, including ICT when developing design ideas.	• 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.

Working with tools, equipment, materials and components to make quality products.	• Make their design using appropriate techniques. • With help measure, mark out, cut and shape a range of materials. • Use tools e.g. scissors and a hole punch safely. • Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. • Use simple finishing techniques to improve the appearance of their product. • Select and use appropriate fruit and vegetables, processes and tools.	• Begin to select tools and materials; use vocabulary to name and describe them. • Measure, cut and score with some accuracy. • Use hand tools safely and appropriately. • Assemble, join and combine materials in order to make a product. • Cut, shape and join fabric to make a simple garment. Use basic sewing techniques. • Choose and use appropriate finishing techniques. • Follow safe procedures for food, safety and hygiene.	• Select tools and techniques for making their product. • Measure, mark out, cut, score and assemble components 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. • Measure, tape or pin, cut and join fabric with some accuracy. • Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT. • Demonstrate hygienic food preparation and storage.	• 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 in temporary and permanent ways. • Use simple graphical communication techniques. • Understand and apply the principles of a healthy and varied diet.	• 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 (time, dry ingredients and liquids). • Cut and join with accuracy to ensure a good-quality finish to the product. • Apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens.	• Select appropriate tools, materials, components and techniques. • Assemble components make working models. • Use tools safely and accurately. • Construct products using permanent joining techniques. • Make modifications as they go along. • Pin, sew and stitch materials together to create a product. • Achieve a quality product.

	• Use basic food handling, hygienic practices and personal hygiene. • Understand where food comes from.					
Evaluating processes and products	• Evaluate their product by discussing how well it works in relation to the purpose. • Evaluate their products as they are developed, identifying strengths and possible changes they might make. • Evaluate their product by asking questions about what they have made and how they have gone about it.	• Evaluate against their design criteria. • Evaluate their products as they are developed, identifying strengths and possible changes they might make. • Talk about their ideas, saying what they like and dislike about them.	• Evaluate their product against original design criteria e.g. how well it meets its intended purpose. • Disassemble and evaluate familiar products. • Understand how key individuals have shaped the world.	• Evaluate their work both during and at the end of the assignment. • Evaluate their products carrying out appropriate tests. • Understand how key individuals have shaped the world.	• Evaluate a product against the original design specification. • Evaluate it personally and seek evaluation from others. • Understand how key individuals have shaped the world.	• 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 that their product could be improved. • Understand how key individuals have shaped the world.

Cross - curricular

STEAM (science, technology, engineering, art and maths)	• Evaluate their products as they are developed, identifying strengths and possible changes they might make in real life contexts. • To use a variety of techniques in designing products e.g. sculpture, drawing.	• Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets. • Getting below the surface playing with objects in different real life situations (visualising).	• To contribute their subjects knowledge to solving important problems. • Use a range of maths; patterns, measuring, weights, length, numbers and shapes when designing.
Computing	• To use a range of digital media to design their product e.g. purple mash; 2design. • Use of spreadsheets to convert measurements, create lists e.g. materials needed, cost etc. • Presenting ideas e.g. use of design, concept maps (joint idea).		
English	To identify purpose of writing using appropriate form read writing aloud.		

KEY VOCABULARY

Key vocabulary is introduced and used throughout each unit in Design Technology.

Key Vocabulary	Year1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1	**Mechanisms:** **Moving Pictures** **Traditional Tales** **Explore** **Evaluate** **Existing product** **Mechanism** **Slider** **Lever** **Purposeful** **Functional** **Component** **Pivot** **Split pin** **Wheel** **Axis** **Design** **Working product** **Annotated sketch** **Move** **Materials** **Equipment** **Design criteria** **Improvements**	**Food:** Prepare to Party (Fruit Salad) Party Occasions Party food Dish Taste Handle Recipe Sketch Ingredients List Label Food packaging Eat well plate Healthy Groups of food Fruit and vegetables Starch Milk and diary Protein Fats and sugars Balanced plate Tasting	**Food: Be a Baker** **Eat well plate** **Investigating** **Evaluating** **Healthy** **Balanced plate** **Food groups** **Preference** **Origin** **Texture** **Taste smell** **Appearance** **Filling** **Sweet** **Sour** **Salty** **Bitter** **Recipe** **Product** **Ingredients** **instructions** **Bread** **Oven** **Temperature** **Weighing**	**Electrical Systems:** **Battery Operated** **Lights.** **series circuit** **fault** **connection** **toggle switch** **push-to-make** **switch** **push-to-break** **switch** **battery** **battery holder** **bulb** **bulb holder** **wire** **insulator** **conductor** **crocodile** **clip control** **program** **system** **input device** **output device** **user**	**Structures – Shell** **structures: Marbulous** **Structures.** **Free standing** **Structure** **Support** **Stiffen** **Sturdy** **Stable** **Reposition** **Strengthen** **Reinforce** **Investigate** **Analyse** **Product** **Tools** **Equipment** **Practical** **Technique** **Accurate** **Join** **Shape** **Aesthetics** **Functional** **Bend**	**Textiles -** **Felt Phone Cases** **Design criteria** **Aesthetics** **Functionality** **Target market** **Product** **Stitching** **Contrasting colours** **Quality** **Innovative design** **Detailed annotations** **Research** **Problem** **Ideas** **Make** **Evaluate** **Unique** **Velcro** **Felt** **Sewn** **Measurements** **Template** **Squared paper** **Accurately**

		Consume Vegetarian Allergies Health Availability Senses Plant/animal origin Design Design criteria Cooking skills Cutting out - Snipping Mixing Spooning Spreading Nutrition	**Sieving** **Mixing** **Kneading** **Proving** **Shaping** **Baking** **Health and safety** **Improving** **Safety** **baker**	**purpose** **function** **prototype** **design criteria** **innovative** **appealing** **design brief**	**cut/shape/join** **Existing** **Iterative process** **Testing** **Design criteria** **Improving** **High quality finish**	**Necessary** **Reduce waste** **Process** **Prototype** **whipstitch back stitch** **running stitch** **blanket stitch** **Plan fastenings** **decoration** **felt** **design process**
Term 2	**Structures:** **Homes (Plan Bee)** **Homes** **Houses** **Teepee** **Cottage** **Igloo** **Castle** **Flats** **Shapes** **Caravan** **Design** **Make** **Evaluate** **Model** **Join** **Materials** **Exterior** **Gluing** **Masking tape** **Packing tape** **Stapling** **Edges** **Interior**	**Mechanisms:** Vehicles (Plan Bee) Investigating Vehicles Transport Window Wheel Headlight Wind screen Label Axels Chassis Rotate Washer Materials Body Design Evaluate Movement	**Textiles:** **Money Containers (Sewing)** **Textiles** **Stitches** **Fabric** **Fastening** **Compartments** **Zip** **Tools** **Cutting** **Joining** **Finishing** **Investigating** **Evaluating** **Stitch** **Seam** **Safety** **Colour** **Pattern** **Tactile** **User** **Purpose** **Design** **Model**	**Mechanical Systems:** **Mechanical Posters** **Design brief** **Recycle** **Mechanism** **Mechanical system** **Moving** **Lever** **Linkage** **Pivot** **Input** **Output** **Generate** **Loose pivot** **Fixed pivot** **Guide** **System** **Bridge** **Annotated sketch** **Design criteria** **Adapt** **Prototype** **Mock-up** **Evaluate**	**Electrical Systems – Programming Adventures** **Programming** **Controlling** **Floor robot** **Bee bot** **Input/output** **Function** **Annotated sketch** **Cross sectional** **Exploded diagrams** **Prototype** **Pattern** **Pieces** **Computer aided** **Obstacles** **Adventure** **Adventure maps** **Materials** **Properties** **Cotton/Silk/Felt/Cardboard/ Paper/ Bubble wrap/ plastic** **Innovative** **Appealing** **Design criteria**	**Mechanical Systems – Automata Animals** **Research** **Develop** **Design criteria** **Innovative** **Functional** **Appealing** **Products** **Fit for purpose** **Habitat** **Design brief** **Cam** **Mechanism** **Components** **Mechanical system** **Rotary** **Linear** **Motion** **Guide** **Movement** **Snail** **Egg-shaped** **Eccentric** **Ellipse**

	Hinges **Safety** **Reflect**		**Prototype** **Annotated sketch** **Functional** **Innovative** **Label** **Aesthetics** **Pattern pieces**	**Testing** **Developing** **High quality** **Finish** **Techniques** **Select** **Accuracy** **Tools** **Equipment** **Materials** **Components** **Replicate** **Improve** **Function**	**Evaluate** **Revise** **Joining** **Monitoring**	**Hexagon/Round** **Off-centre** **Off-set** **Aesthetic** **Features** **Quality** **Materials** **Framework** **Construction** **Join/cut/saw/square-section-wood.** **Hacksaw/Vice** **Corner joints** **Notch/Mount** **Prototype** **Axle/Shaft**
Term 3	**Food:** Bring on Breakfast **Breakfast cereal** **Traditional English breakfast** **Peanut butter on toast** **Omlette** **Croissant** **Fruit salad** **Pancakes** **Porridge** **Healthy** **Five a day** **Portion** **Fruit and vegetable** **Fresh** **Frozen** **Dried** **Canned** **Juiced** **Ingredients** **Food preparation** **Hygiene** **Peel** **Knife**	**Textiles:** Fabric Bunting Evaluate Bunting Product Decoration Design Improve Create Sketch Template Fabric Scissors Cutting Pattern Running stitch Needle and thread Sewing Knot Binca Joining Techniques	**Structures: Frame Structures Lets go Fly a Kite** **Kite** **Function** **Parts** **Bridle** **Line** **Toe** **Point** **Keel** **Spars** **Tail** **Fabric** **Successful** **Unsuccessful** **Tactile** **Pattern** **Tools** **Equipment** **Material** **Components** **Technic**	**Food: A Lovely Lunch (sandwiches).** **Ingredients** **Proportion** **Balanced plate** **Diary** **Fats and sugar** **Starch** **Protein** **Fruit and vegetables** **Five a day** **Recipes** **Intolerances** **Allergies** **Availability** **Regional** **National** **Lifestyle** **Vegan** **Vegetarian** **Gluten free** **Diary free** **Fibre** **Digestive system**	**Food – Serve a Salad** **Investigating** **Evaluating** **Products** **Analysing** **Health and safety** **Healthy** **Balanced plate** **Food groups** **Preference** **Texture** **Taste** **Smell** **Appearance** **Filling** **Sweet** **Sour** **Salty** **Bitter** **Cutting** **Spreading** **Grating** **Mixing** **Slicing**	**Food – Grab and Go** **Nutrients** **Fibre** **Carbohydrates** **Analyse** **Ingredients** **Sensory** **Hygiene** **Preparation** **Food skills** **Packaging** **Pre-packed** **Saturated fats** **Favouring** **Spices** **Seasonal** **Design Criteria** **Product** **Recipes** **Visualise** **Adapt** **Exploded diagram** **Cross-section view** **Appeal**

	Appearance **Originate** **Diary** **Bones and teeth** **Farm to fork** **Purpose** **Design** **Improve**			**Arranging** **Sensory** **Hygiene** **Savoury** **Skills** **Slicing** **ingredients** **claw grip** **seasons/seasonal** **cross contamination** **Assembling** **Grating**	**Chopping** **Knife**	**Texture** **Organise** **Evaluate** **Contamination** **Bacterial** **Chemical** **Physical** **Storage** **Allergies** **Manufacturer**

CONSOLIDATION

Design and Technology is a popular and valuable subject for pupils. Knowledge and understanding is drawn from across the curriculum and helps to develop and enable numeracy, literacy and communication skills that can be applied in practical ways. This consolidates skills from other lessons and reinforces learning with positive outcomes.

A broad spectrum of the D&T curriculum is planned and delivered in order to accommodate and challenge pupils of all abilities. Design and Technology knowledge is revisited at different stages on the learning journey. There are opportunities to revisit prior learning in each learning journey per year group. This is undertaken by using the visual representations on the screen of prior concepts and is further explored in the introduction activity of each lesson. The skills and knowledge here is directly linked to the new learning for that lesson. Unit by unit, children have the opportunity to revisit their skills.

INCLUSION

"Designing and making usable products gives pupils a real sense of achievement. They benefit from experiencing their own progress and taking responsibility for their own learning"

According to OFSTED, pupils with special educational needs make better progress in D&T than in most other subjects.

This is because designing and making usable products gives pupils a real sense of achievement. They benefit from experiencing their own progress and taking responsibility for their own learning. They enjoy the practical application of their ideas. Plus, their personal engagement

with the task improves attention span, patience, persistence and commitment. All of which means special needs pupils can achieve results that compare or even exceed their peers. Design and Technology offers these pupils the chance to experience achievement at a level that may seldom occur elsewhere in their school life.

At Cherry Lane Primary, teachers ensure that they make learning inclusive for all children. SEND children are given the opportunity to access the lessons through adapted learning opportunities and more able pupils are stretched with appropriate challenge. The use of visual resources helps enhance understanding and meaning of key vocabulary. Scaffolded resources are used to ensure that all children are able to meet the objectives of the lesson; each lesson will have a clear Learning Objective (LO) and Success Criteria.

IMPACT

Monitoring is undertaken by the DT coordinator, looking at the levels the children are at across the school and ensuring the progression from year to year is evident both in work produced and in planning. Children's work will be celebrated throughout Cherry Lane and we will work collaboratively with parents; Inviting them in to participate in their children's learning, joining in during activities that have been set and showing their work that they have completed during the topics.

In our assessments of DT we focus on progression of knowledge and skills and discreet vocabulary development.

We measure the impact of our curriculum through the following methods:

- *Assessing children's understanding of topic linked vocabulary before and after the unit is taught.*
- *Termly summative assessment of pupil progress.*
- *Images and videos of the children's practical learning.*

- *Interviewing the pupils about their learning (pupil voice).*
- *Moderation staff meetings where pupil's work is scrutinised and there is the opportunity for a dialogue between teachers to understand their class's work.*