Broadhempston Village Primary
Design Technology Curriculum Plan

Our curriculum statements are designed to be used as a supportive tool to plan teaching and learning across our school.

Rationale

The concept of future and innovation underpins our design and technology curriculum - we want pupils to view themselves as designers: risk taking, trialling, and evaluating sitting centrally to their experience. Pupils are encouraged to exercise their creativity through our designing, making and evaluating cycle. Combining designing and making skills, with knowledge and understanding ensures pupils have a rounded, progressive experience and provides skills that can be drawn upon for life. Evaluation is an integral part of the design process, allowing children to improve and adapt their product and providing a platform to build and practice resilience. Capturing pupil interests and providing cross-curricular opportunities to embed D&T develops motivation and embeds understanding in a meaningful way. Our Design and technology scheme of work enables pupils to meet the end of key stage attainment targets in the National curriculum and the aims also align with those in the National curriculum. EYFS (Reception) units provide opportunities for pupils to work towards the Development matters statements and the Early Learning Goals.

Vocabulary

Children's command of vocabulary is fundamental to learning and progress across the curriculum. Vocabulary is developed actively, building systematically on pupil's current knowledge and deepening their understanding of etymology and morphology (word origins and structures) to increase their store of words. Simultaneously, pupils make links between known and new vocabulary, and discuss and apply shades of meaning. In this way, children expand the vocabulary choices that are available to them. It is essential to introduce technical vocabulary which define each curriculum subject. Vocabulary development is underpinned by an oracy culture and a tiered approach. High value is placed on the conscious, purposeful selection of well-chosen vocabulary and appropriate sentence structure to enrich access to learning and feed into written work across the curriculum.
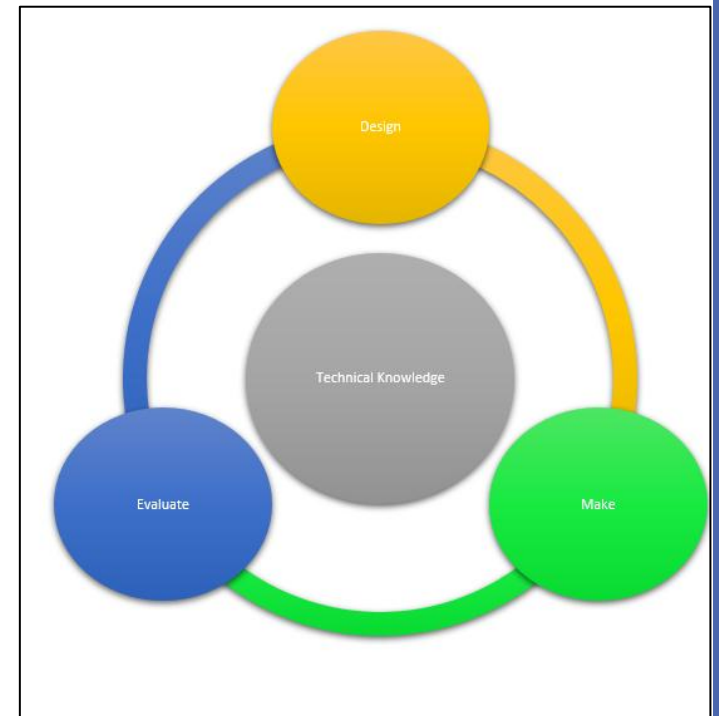
DT teaching and learning

Design and technology at our schools follows the National curriculum, which outlines the three main stages of the design process: design, make and evaluate. We use Kapow DT curriculum to support the effective delivery of DT across school.
Each stage of the design process is underpinned by technical knowledge which encompasses the contextual, historical, and technical understanding required for each strand.

● Cooking and nutrition is given a particular focus in the National curriculum and pupils revisit this subject throughout their time at Landscove C of E Primary School, along with:
● Mechanisms/ Mechanical systems
● Structures
● Textiles
● Electrical systems (KS2 only)
● Digital world (KS2 only)

Through our DT scheme, pupils respond to design briefs and scenarios that require consideration of the needs of others, developing their skills in the six key areas. Each of our key areas follows the design process (design, make and evaluate) and has a particular theme and focus from the technical knowledge or cooking and nutrition section of the curriculum. Our DT curriculum is mapped out over a two year programme and as such is a spiral curriculum, with key areas revisited again and again with increasing complexity, allowing pupils to revisit and build on their previous learning. Lessons incorporate a range of teaching strategies from independent tasks, paired and group work including practical hands-on, computer-based and inventive tasks. This variety means that lessons inspire and engage those pupils requiring a variety of learning styles. Differentiated guidance is available for every lesson to ensure that lessons can be accessed by all pupils and opportunities to stretch pupils' learning are available when required. Knowledge organisers for each unit support pupils in building a foundation of factual knowledge by encouraging recall of key facts and vocabulary.

CPD
To deliver a highly effective and robust Design and technology curriculum a strong subject knowledge is vital for staff. Each unit of lessons in the scheme we use, includes multiple teacher videos to develop subject knowledge and support ongoing CPD to enable teachers to feel confident in delivering the full Design and technology curriculum. This ensures that the implementation of our curriculum delivers lessons of a high standard that ensure pupil progression.

The National Curriculum

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 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].
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.

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:
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
- ❖ investigate and analyse a range of existing products
- ❖ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- ❖ understand how key events and individuals in design and technology have helped shape the world

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.

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 enabling 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 to:

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.

Mixed age Rolling programme

Year A EYFS/1/2	Cooking and nutrition: Smoothies	Mechanisms: Making a moving monster	Structures: Baby Bear's Chair
Year B EYFS/1/2	Textiles: Puppets	Mechanisms: Wheels and axles	Structures: Fairground wheel
Year A KS2	Eating seasonally	Doodlers	Pop up book
Year B KS2	Egyptian collars	Bridges	Monitoring devices
Year C KS2	Gears and pulleys	Developing a recipe	Torches
Year D KS2	Electric poster	Constructing a castle	Cushions

Progression of Key Skills

STRUCTURES		EYFS	YEAR 1 /2	YEAR 3/4	YEAR 5/6
Skills	Design	• Making verbal plans and material choices. • Developing a junk model.	Learning the importance of a clear design criteria. • Including individual preferences and requirements in a design ………………………………………………………… • Generating and communicating ideas using sketching and modelling. • Learning about different types of structures, found in the natural world and in everyday objects.	• Designing a castle with key features to appeal to a specific person/purpose. • Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours. • Designing and/or decorating a castle tower on CAD software	• Designing a stable structure that is able to support weight. • Creating a frame structure with a focus on triangulation.
	Make	Improving fine motor/scissor skills	Making stable structures from card.	• Constructing a range of 3D geometric	• Making a range of different shaped

		with a variety of materials. • Joining materials in a variety of ways (temporary and permanent). • Joining different materials together. • Describing their junk model, and how they intend to put it together	• Following instructions to cut and assemble the supporting structure of a windmill. • Making functioning turbines and axles which are assembled into a main supporting structure. • Finding the middle of an object. • Puncturing holes. • Adding weight to structures. • Creating supporting structures. • Cutting evenly and carefully. ……………………………………………………… Making a structure according to design criteria. • Creating joints and structures from paper/card and tape. • Building a strong and stiff structure by folding paper.	shapes using nets . • Creating special features for individual designs. • Making facades from a range of recycled materials.	beam bridges. • Using triangles to create truss bridges that span a given distance and support a load. • Building a wooden bridge structure. • Independently measuring and marking wood accurately. • Selecting appropriate tools and equipment for particular tasks. • Using the correct techniques to saws safely. • Identifying where a structure needs reinforcement and using card corners for support. • Explaining why selecting appropriating materials is an important part of the design process. • Understanding basic wood functional properties.
	Evaluate	• Giving a verbal evaluation of their own and others' junk models with adult support. • Checking to see if their model matches their plan. • Considering what they would do differently if they were to do it again. • Describing their favourite and least favourite part of their model.	Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't. • Suggest points for improvements ……………………………………………………………. Exploring the features of structures. • Comparing the stability of different shapes. • Testing the strength of own structures. • Identifying the weakest part of a structure. • Evaluating the strength, stiffness and stability of own structure.	• Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design. • Suggesting points for modification of the individual designs.	Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary. • Suggesting points for improvements for own bridges and those designed by others.
Knowledge	**Technical**	To know there are a range to different materials that can be used to make a model and that they are all slightly different. • Making simple suggestions to fix their junk model.	• To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses). • To understand that axles are used in structures and mechanisms to make parts turn in a circle. • To begin to understand that different	• To understand that wide and flat based objects are more stable. • To understand the importance of strength and stiffness in structures.	• To understand some different ways to reinforce structures. • To understand how triangles can be used to reinforce bridges. • To know that properties are words that describe the form and function of materials.

			structures are used for different purposes. • To know that a structure is something that has been made and put together. • To know that the sails or blades of a windmill are moved by the wind. • To know that a structure is something built for a reason. • To know that stable structures do not topple. • To know that adding weight to the base of a structure can make it more stable. ………………………………………………………………….. • To know that shapes and structures with wide, flat bases or legs are the most stable. • To understand that the shape of a structure affects its strength. • To know that materials can be manipulated to improve strength and stiffness. • To know that a structure is something which has been formed or made from parts. • To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. • To know that a 'strong' structure is one which does not break easily. • To know that a 'stiff' structure or material is one which does not bend easily.		• To understand why material selection is important based on properties. • To understand the material (functional and aesthetic) properties of wood.
	Additional		• To know that design criteria is a list of points to ensure the product meets the clients needs and wants. • To know that a windmill harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity. • To know that windmill turbines use wind to turn and make the machines inside work.	• To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose. • To know that a façade is the front of a structure. • To understand that a castle needed to be strong and stable to withstand enemy attack. • To know that a paper net is a flat 2D shape that can become a 3D shape once	• To understand the difference between arch, beam, truss and suspension bridges. • To understand how to carry and use a saw safely.

| | | | | • To know that a windmill is a structure with sails that are moved by the wind.
• To know the three main parts of a windmill are the turbine, axle and structure.
• To know that windmills are used to generate power and were used for grinding flour.
…………………………………………………………
• To know that natural structures are those found in nature.
• To know that man-made structures are those made by people. | assembled.
• To know that a design specification is a list of success criteria for a product. | |

MECHANISMS		EYFS	YEAR 1 /2	YEAR 3/4	YEAR 5/6
Skills	Design		• Explaining how to adapt mechanisms, using bridges or guides to control the movement. • Designing a moving story book for a given audience. ………………………………………………………………. Selecting a suitable linkage system to produce the desired motion. • Designing a wheel.	• Designing a shape that reduces air resistance. • Drawing a net to create a structure from. • Choosing shapes that increase or decrease speed as a result of air resistance. • Personalising a design.	•Experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement. • Understanding how linkages change the direction of a force. • Making things move at the same time. • Understanding and drawing cross-sectional diagrams to show the inner-workings of my design.
	Make		• Following a design to create moving models that use levers and sliders. ………………………………………………………………… ….. • Selecting materials according to their characteristics. • Following a design brief.	• Measuring, marking, cutting and assembling with increasing accuracy. • Making a model based on a chosen design.	• Measuring, marking and checking the accuracy of the jelutong and dowel pieces required. • Measuring, marking and cutting components accurately using a ruler and scissors. • Assembling components accurately to make a stable frame. • Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles. • Selecting appropriate materials

					based on the materials being joined and the speed at which the glue needs to dry/set.
	Evaluate		• Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed. • Reviewing the success of a product by testing it with its intended audience …………………………………………………………… …. • Evaluating different designs. • Testing and adapting a design.	• Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance.	• Evaluating the work of others and receiving feedback on own work. • Applying points of improvement to their toys. • Describing changes they would make/do if they were to do the project again.
Knowledge	**Technical**		• To know that a mechanism is the parts of an object that move together. •To know that a slider mechanism moves an object from side to side. • To know that a slider mechanism has a slider, slots , guides and an object. • To know that bridges and guides are bits of card that purposefully restrict the movement of the slider. …………………………………………………………… . To know that different materials have different properties and are therefore suitable for different uses.	• To understand that all moving things have kinetic energy. • To understand that kinetic energy is the energy that something (object/person) has by being in motion. • To know that air resistance is the level of drag on an object as it is forced through the air. • To understand that the shape of a moving object will affect how it moves due to air resistance.	• To understand that the mechanism in an automata uses a system of cams, axles and followers. • To understand that different shaped cams produce different outputs.
	Additional		• To know that in Design and technology we call a plan a 'design'. …………………………………………………………… ………. • To know the features of a ferris wheel include the wheel, frame, pods, a base an axle and an axle holder. • To know that it is important to test my design as I go along so that I can solve any problems that may occur	• To understand that products change and evolve over time. • To know that aesthetics means how an object or product looks in design and technology. • To know that a template is a stencil you can use to help you draw the same shape accurately. • To know that a birds-eye view means a view from a high angle (as if a bird in flight). • To know that graphics are images which are designed to explain or advertise something. •To know that it is important to assess and evaluate design ideas and models against	• To know that an automata is a hand powered mechanical toy. • To know that a cross-sectional diagram shows the inner workings of a product. • To understand how to use a bench hook and saw safely. • To know that a set square can be used to help mark 90° angles

TEXTILES		EYFS	YEAR 1 /2	YEAR 3/4	YEAR 5/6
				a list of design criteria.	
Skills	**Design**	• Discussing what a good design needs. • Designing a simple pattern with paper. • Designing a bookmark. • Choosing from available materials.	• Using a template to create a design for a puppet.	• Designing and making a template from an existing cushion and applying individual design criteria.	• Designing a stuffed toy, considering the main component shapes required and creating an appropriate template. • Considering the proportions of individual components
	Make	• Developing fine motor/cutting skills with scissors. • Exploring fine motor/threading and weaving (under, over technique) with a variety of materials. • Using a prepared needle and wool to practise threading.	• Cutting fabric neatly with scissors. • Using joining methods to decorate a puppet. • Sequencing the steps taken during construction.	• Following design criteria to create a cushion or Egyptian collar. • Selecting and cutting fabrics with ease using fabric scissors. • Threading needles with greater independence. • Tying knots with greater independence. • Sewing cross stitch to join fabric. • Decorating fabric using appliqué. • Completing design ideas with stuffing and sewing the edges (Cushions) or embellishing the collars based on design ideas (Egyptian collars).	• Creating a 3D stuffed toy from a 2D design. • Measuring, marking and cutting fabric accurately and independently . • Creating strong and secure blanket stitches when joining fabric. • Threading needles independently. • Using appliqué to attach pieces of fabric decoration. • Sewing blanket stitch to join fabric. • Applying blanket stitch so the spaces between the stitches are even and regular.
	Evaluate	• Reflecting on a finished product and comparing to their design.	• Reflecting on a finished product, explaining likes and dislikes.	• Evaluating an end product and thinking of other ways in which to create similar items.	• Testing and evaluating an end product and giving point for further improvements.
Knowledge	**Technical**	• To know that a design is a way of planning our idea before we start. • To know that threading is putting one material through an object.	• To know that 'joining technique' means connecting two pieces of material together. • To know that there are various temporary methods of joining fabric by using staples. glue or pins. • To understand that different techniques for joining materials can be used for different purposes. • To understand that a template (or fabric pattern) is used to cut out the same shape multiple times. • To know that drawing a design idea is useful to see how an idea will look.	•To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces. •To know that when two edges of fabric have been joined together it is called a seam. •To know that it is important to leave space on the fabric for the seam. •To understand that some products are turned inside out after sewing so the stitching is hidden.	• To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. • To understand that it is easier to finish simpler designs to a high standard. • To know that soft toys are often made by creating appendages separately and then attaching them to the main body. • To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely.
	Additional				

FOOD TECHNOLOGY, COOKING & NUTRITION		EYFS	YEAR 1 /2	YEAR 3/4	YEAR 5/6
Skills	Design	• Designing a soup recipe as a class. • Designing soup packaging.	• Designing three wrap ideas based on a food combination which work well together.	• Designing a recipe for a savoury tart	• Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. • Writing an amended method for a recipe to incorporate the relevant changes to ingredients. • Designing appealing packaging to reflect a recipe. • Researching existing recipes to inform ingredient choices.
	Make	• Chopping plasticine safely. • Chopping vegetables with support.	Chopping foods safely to make a wrap. • Constructing a wrap that meets a design brief. • Grating foods to make a wrap. • Snipping smaller foods instead of cutting.	• Following the instructions within a recipe. • Tasting seasonal ingredients. • Selecting seasonal ingredients. • Peeling ingredients safely. • Cutting safely with a vegetable knife	• Cutting and preparing vegetables safely. • Using equipment safely, including knives, hot pans and hobs. • Knowing how to avoid cross-contamination. • Following a step by step method carefully to make a recipe
	Evaluate	• Tasting the soup and giving opinions. • Describing some of the following when tasting food: look, feel, smell and taste. • Choosing their favourite packaging design and explaining why.	• Describing the taste, texture and smell of fruit and vegetables. • Taste testing food combinations and final products. • Describing the information that should be included on a label. •Evaluating food by giving a score.	• Establishing and using design criteria to help test and review dishes. • Describing the benefits of seasonal fruits and vegetables and the impact on the environment. • Suggesting points for improvement when making a seasonal tart.	• Identifying the nutritional differences between different products and recipes. • Identifying and describing healthy benefits of food groups.
Knowledge	Technical	• To know that soup is ingredients (usually vegetables and liquid) blended together. • To know that vegetables are grown. • To recognise and name some common vegetables. • To know that different vegetables taste different. • To know that eating vegetables is good for us. • To discuss why different packages	• To know that 'diet' means the food and drink that a person or animal usually eats. • To understand what makes a balanced diet. • To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar. • To understand that I should eat a range of different foods from each food group, and roughly how much of each food	• To know that not all fruits and vegetables can be grown in the UK. • To know that climate affects food growth. • To know that vegetables and fruit grow in certain seasons. • To know that cooking instructions are known as a 'recipe'. • To know that imported food is food which has been brought into the country. • To know that exported food is food which has been sent to another	• To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed. • To know that recipes can be adapted to suit nutritional needs and dietary requirements. • To know that I can use a nutritional calculator to see how healthy a food option is.

		might be used for different foods.	group. • To know that 'ingredients' means the items in a mixture or recipe.	country.. • To know that eating seasonal foods can have a positive impact on the environment. • To know that similar coloured fruits and vegetables often have similar nutritional benefits. • To know that the appearance of food is as important as taste.	• To understand that 'cross-contamination' means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects. • To know that coloured chopping boards can prevent cross-contamination. • To know that nutritional information is found on food packaging. • To know that food packaging serves many purposes.
	Additional				
ELECTRICAL SYSTEMS		**EYFS**	**YEAR 1 /2**	**YEAR 3/4**	**YEAR 5/6**
Skills	**Design**			• Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas.	• Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product. • Developing design criteria based on findings from investigating existing products. • Developing design criteria that clarifies the target user.
	Make			• Making a torch with a working electrical circuit and switch. • Using appropriate equipment to cut and attach materials. • Assembling a torch according to the design and success criteria.	• Altering a product's form and function by tinkering with its configuration. • Making a functional series circuit, incorporating a motor. • Constructing a product with consideration for the design criteria. • Breaking down the construction process into steps so that others can make the product.
	Evaluate			• Evaluating electrical products. • Testing and evaluating the success of a final product.	• Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses. • Determining which parts of a product affect its function and which parts

				YEAR 3/4	YEAR 5/6
					affect its form. • Analysing whether changes in configuration positively or negatively affect an existing product. • Peer evaluating a set of instructions to build a product.
Knowledge	**Technical**			• To understand that electrical conductors are materials which electricity can pass through. • To understand that electrical insulators are materials which electricity cannot pass through. • To know that a battery contains stored electricity that can be used to power products. • To know that an electrical circuit must be complete for electricity to flow. • To know that a switch can be used to complete and break an electrical circuit.	• To know that series circuits only have one direction for the electricity to flow. • To know when there is a break in a series circuit, all components turn off. • To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. • To know a motorised product is one which uses a motor to function.
	Additional			• To know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens. • To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison.	• To know that product analysis is critiquing the strengths and weaknesses of a product. • To know that 'configuration' means how the parts of a product are arranged.
DIGITAL WORLD		**EYFS**	**YEAR 1 /2**	**YEAR 3/4**	**YEAR 5/6**
Skills	**Design**			• Writing design criteria for a programmed timer (micro:bit). • Exploring different mindfulness strategies. • Applying the results of my research to further inform my design criteria. • Developing a prototype case for my mindful moment timer. • Using and manipulating shapes and clipart by using computer-aided design (CAD), to produce a logo. • Following a list of design requirements.	• Researching (books, internet) for a particular (user's) animal's needs. • Developing design criteria based on research. • Generating multiple housing ideas using building bricks. • Understanding what a virtual model is and the pros and cons of traditional and CAD modelling. • Placing and manoeuvring 3D objects, using CAD. • Changing the properties of, or combining one or more 3D objects,

				using CAD.
	Make		Developing a prototype case for my mindful moment timer. • Creating 3D structures using modelling materials. • Programming a micro: bit in the Microsoft micro: bit editor, to time a set number of seconds/minutes upon button press.	• Understanding the functional and aesthetic properties of plastics. • Programming to monitor the ambient temperature and coding an (audible or visual) alert when the temperature rises above or falls below a specified range.
	Evaluate		• Investigating and analysing a range of timers by identifying and comparing their advantages and disadvantages. • Evaluating my micro: bit program against points on my design criteria and amending them to include any changes I made. • Documenting and evaluating my project. • Understanding what a logo is and why they are important in the world of design and business. • Testing my program for bugs (errors in the code). • Finding and fixing the bugs (debug) in my code. • Using an exhibition to gather feedback. • Gathering feedback from the user to make suggested improvements to a product	• Stating an event or fact from the last 100 years of plastic history. • Explaining how plastic is affecting planet Earth and suggesting ways to make more sustainable choices. • Explaining key functions in my program (audible alert, visuals). • Explaining how my product would be useful for an animal carer including programmed features
Knowledge	**Technical**		• To understand what variables are in programming. • To know some of the features of a micro: bit. • To know that an algorithm is a set of instructions to be followed by the computer. • To know that it is important to check my code for errors (bugs). • To know that a simulator can be used as a way of checking your code works before installing it onto an electronic device	• To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record. • To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose. • To understand that conditional statements (and, or, if booleans) in programming are a set of rules which are followed if certain conditions are met.
	Additional		•To understand the terms 'ergonomic' and	• To understand key developments in

			'aesthetic'. •To know that a prototype is a 3D model made out of cheap materials, that allows us to test design ideas and make better decisions about size, shape and materials. • To know that an exhibition is a way for companies to showcase products, meet potential new customers and gather feedback from users.	thermometer history. • To know events or facts that took place over the last 100 years in the history of plastic, and how this is changing our outlook on the future. • To know the 6Rs of sustainability. • To understand what a virtual model is and the pros and cons of traditional vs CAD modelling

Assessing Impact

Our Design and technology curriculum enables pupils to leave primary school equipped with a range of skills to enable them to succeed in their secondary education and be innovative and resourceful members of society. The expected impact of following our scheme we follow is that children will:

- Have grown a passion for the subject.
- Have an appreciation for key individuals, inventions, and events in history and of today that impact our world.
- An excellent attitude to learning and independent working.
- The ability to use time efficiently and work constructively and productively with others.
- The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- A thorough knowledge of which tools, equipment and materials to use to make their products.
- The ability to apply mathematical knowledge and skills accurately.
- The ability to manage risks exceptionally well to manufacture products safely and hygienically.
- Self-evaluate and reflect on learning at different stages and identify areas to improve.
- Understand and apply the principles of healthy eating, diets, and recipes, including key processes, food groups and cooking equipment.
- Meet the end of key stage expectations outlined in the National curriculum for Design and technology.
- Meet the end of key stage expectations outlined in the National curriculum for Computing.

At the end of every lesson there is an opportunity to assess progress and understanding. There is an assessment resource to use at the start of each unit to find out where pupils are in their learning and it is then used at the end of the unit to assess progress. Children are given opportunities to plan-make-evaluate, and teacher assessment is used throughout this process.
Teachers are responsible for the regular assessment of their pupils against the Early Years Framework, National Curriculum and key skills, to judge the impact of teaching and learning in design technology.