



Design and Technology Key Concepts Year Group Mapping

	Autumn	Spring	Summer
EYFS <i>Expressive Arts and Design</i> <i>Physical Development</i>	<i>In EYFS, pupils are taught Design and Technology through the strands Expressive Arts and Design and Physical Development. Through the year pupils will be taught: Structures, Textiles, Mechanics and Cooking and Nutrition.</i>		
Year 1	Mechanisms Moving vehicles	Textiles Animal puppets	Cooking and nutrition Seaside smoothie
Year 2	Structure Buildings	Mechanisms Moving picture book	Cooking and nutrition Pizza wraps
Year 3	Cooking and nutrition Seasonal dishes	Mechanisms Moving monsters	Digital world Light up boxes
Year 4	Structure Picture frames	Textiles Pouches (money containers)	Cooking and nutrition Bread (designing a recipe)
Year 5	Food and nutrition Biscuits (adapting recipe)	Electrical systems Steady hand game.	Structure Building bridges
Year 6	Textiles Baubles/Cushions	Cooking and nutrition Burgers and sides.	Mechanisms Pop-up toys

Key Concepts in Design and Technology

Mechanics



Textiles



Structures



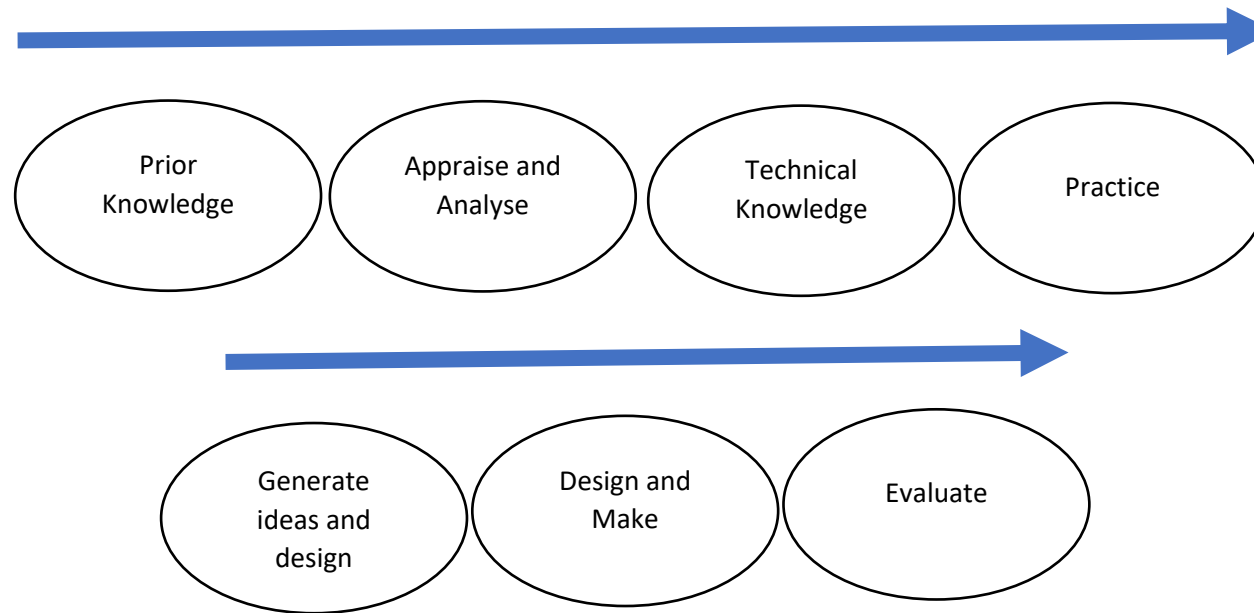
Electrical and Digital



Cooking and Nutrition



Pupils will become increasingly competent in designing, making and evaluating products. They will investigate how design has been used to solve problems and create products and structures in the real world, including the techniques used by designers to improve looks and functionality. They will have the opportunity to design their own products in response to design briefs, learn and experiment with a range of techniques before making and evaluating products. Each unit of work will be based on the following teaching sequence.



The technical knowledge will be specific to the key concepts outlined below:

Mechanics

Pupils will gain an understanding of how different mechanisms work, evaluate products with different mechanisms and design and make working products to fit a design brief. They will gain the technical knowledge needed to make different mechanisms work effectively.

Textiles



Pupils will gain the technical knowledge needed to work with textiles such as stitching, sewing and threading. They will study textile designs and how to make products which are practical as well as stylish and then apply this learning to their own designs and products.

Structures

Pupils will learn the technical knowledge used by designers to make structures which are strong and stable. They will learn and apply strengthening techniques, explore the benefits of different shapes and materials and apply this to their own designs and products.

Electric and digital

Pupils will learn how electronics and digital technologies are used when designing and creating products. They will gain the technical knowledge needed to programme devices and to make use of electric circuits including switches to power and control a product.

Cooking and nutrition

Pupils will learn where food comes from and how nutritional information can be used to plan.

Design and Technology Knowledge and Skills Sequencing

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mechanics 	<i>To explore different toys that move and make them work by pressing parts or applying force.</i>	<i>To use magnets to move things.</i> <i>To use split pins to make body parts move.</i>	To appraise and analyse mechanisms in existing products (moving vehicles). To identify how mechanisms work in existing products e.g. wheels/axels.	To appraise and analyse mechanisms in existing products (moving story books). To identify how mechanisms work in existing products e.g. sliders/levers.	To analyse moving toys and identify how they work. To identify how a moving toy works. To produce a mechanical prototype – moving part.			To appraise and analyse a range of existing products – automata toys. To gain an understanding of how cams and followers work.
Appraise and Analyse	<i>To know that a push or pull can move an object or stop it from moving.</i>		To be able to make prototype mechanisms.	To be able to make prototype mechanisms				To use a range of materials, tools and techniques to create a prototype – cams and followers.
Technical knowledge	<i>To look at books with moving parts and use the levers and sliders appropriately.</i>		To design using pictures and labels.	To design using pictures and labels.	To design a moving monster with a mechanism.			
Practice					To select appropriate materials to produce a mechanical product –			
Generate ideas and design			To create a product which includes wheels and axels.	To create a product which includes sliders and levers.				To design a product that meets the design brief – automata toys.
Design and Make								

Evaluate			To evaluate my product against function.	To evaluate my product against function	moving monster. To evaluate my product and identify ways to improve my design.			To use a range of materials, tools and techniques to make a product. To evaluate an end product against a design criteria and consider the views of others
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Textiles  Appraise and Analyse Technical knowledge	<i>To know that things feel different.</i> <i>To explore different textiles and talk about how they feel to touch.</i> <i>To sort different materials.</i>	<i>To investigate the properties of textiles.</i> <i>To recreate a pattern using thread and weaving techniques.</i> <i>To cut and join fabrics with simple techniques.</i>	To appraise and analyse a selection of puppets. To identify techniques used to create a puppet (simple stitches, gluing etc). To practise a range of techniques			To research a design concepts or range of products and appraise them. To understand how a cross stitch design is created.		To appraise and analyse an existing product commenting on design features. To understand how pattern pieces are used to make an end product. To experiment with pattern



Practice Generate ideas and design Design and Make Evaluate		To use my fine motor skills to thread different items.	used to make a puppet to create a prototype (sewing, gluing etc) To design a product using pictures and words. To use a range of tools and materials to create a finished product. To evaluate an end product in terms of aesthetics – puppet.			To practise skills identified to develop a design of my own. To be able to generate and develop ideas using exploding diagrams to design an end product. To be able to think ahead about the order of my work, select tools needed for a given task and give reasons for my choices. To be able to evaluate	pieces to create a prototype. To design a product using pattern pieces to meet a design brief. To use pattern pieces, appropriate materials and tools to create an end product. To evaluate a product on appearance and function against an original design criteria and justify decisions made in the design and making process.
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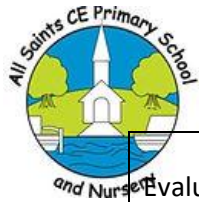
						a finished product against a design brief		
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Structures  Appraise and Analyse Technical knowledge Practice Generate ideas and design	<i>To take apart and talk about (with support) how cardboard boxes are used in everyday life.</i> <i>To use various construction materials, stacking vertically and horizontally, balancing, making enclosures and creating spaces.</i> <i>To use a glue spatula.</i> <i>To use a masking tape to join.</i>	<i>To take apart and talk about how cardboard boxes used in everyday life to see how they are made and put them back together again.</i> <i>To use string, sellotape, glue, masking tape and PVA glue to join materials.</i> <i>To choose materials which are suitable for my design and</i>		To appraise and analyse how a structure is made. To identify how a net is created using shapes. To practise making stable structures using nets to make a building (houses). To design a structure (building) using pictures and words based on a design criteria. To make and join together a		To research picture frames and consider how these structures work. To identify the structure for a picture frame and analyse the support techniques to make the structure strong. To explore suitable materials	To analyse structural designs in terms of functionality, aesthetics and materials. To understand different methods of strengthening bridges. To practise a range of structural designs to create bridges. To generate ideas and	



Design and Make	Evaluate	<i>To use simple mark making techniques to represent/ communicate my ideas.</i> <i>To develop my own ideas through experimentation with a range of materials.</i> <i>To safely use tools and materials</i>	<i>explain my reasoning.</i> <i>To use small school scissors safely and effectively.</i> <i>To talk about what I intend to make and represent my ideas using pictures.</i> <i>To know how to use objects and join and manipulate them to make a prop to support play.</i> <i>I know how to use and talk about different materials to achieve a desired effect or outcome.</i>	stable structure (building) using nets. To evaluate my structure in terms of design.	to create a strong structure (frame). To generate ideas and design a structure including strengthening techniques (frame). To use appropriate tools and construction materials to make a structure (frame). To evaluate my structure and suggest ways for improvement.	design a structure (bridge) demonstrating my design from different perspectives. To use a range of appropriate tools competently and to join and combine a range of materials competently. To evaluate a product on appearance and function against an original design criteria and justify decisions made in the design and	
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							making process.	
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Electrical and Digital (KS2)  Appraise and Analyse Technical knowledge Practice Generate ideas and design Design and Make					Digital To appraise and analyse a range of light up boxes and comment on their features. To learn about electrical items and how they work. To learn how a switch controls the flow of an electric current. To design a light up box based on a user profile. To make a light up box		Electrical To appraise and analyse a range of toys and identify if the form follows its function. To create a range of electrical circuits and identify their component. To practise using a range of tools and techniques to create part of a product. To generate ideas and design a product that	



Evaluate					based on a user profile. To evaluate my light up box and identify any improvements that could be made.		meets the design brief. To use a range of tools and techniques to make a product. To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Cooking and nutrition  Appraise and Analyse Technical knowledge Practice Generate ideas and design Design and Make Evaluate	<i>To name a range of different fruit and vegetables.</i>	<i>To sort healthy and unhealthy foods and design a healthy plate.</i>	<i>To identify where our fruit and vegetables come from to make a healthy product (smoothie).</i>	<i>To identify ingredients from different food groups to create a healthy and balanced product (pizza wrap)</i>	<i>To identify seasonal ingredients used in an existing product.</i>	<i>To appraise and analyse a range of bread and where it comes from.</i>	<i>To appraise and analyse a range of biscuits.</i>	<i>To appraise and analyse a range of burgers and sides.</i>
	<i>To sort healthy and unhealthy foods. To taste a variety of foods from different cultures.</i>	<i>To create a fruit kebab.</i>	<i>To identify different techniques used to prepare and create a healthy product (mushing, chopping, blending).</i>	<i>To identify different techniques to prepare a healthy and balanced product (peeling, chopping, grating, spreading, cooking).</i>	<i>To identify techniques used and to write a method to create an existing product.</i>	<i>To identify techniques used and to write a method to create an existing product.</i>		<i>To identify how the different cooking techniques can be used to create a range of healthy burgers and sides.</i>
		<i>To taste a variety of foods from different cultures and talk about the flavours.</i>			<i>To practise a range of different techniques to prepare and create a seasonal product (grating, chopping, slicing, rolling, folding, pinching, egg washing).</i>	<i>To practise a range of different techniques to prepare and create bread (slicing, rolling, folding, pinching)</i>		<i>To practise a range of different cooking techniques to decide which is the most appropriate method.</i>
		<i>To understand the need for variety in food and maintain a healthy lifestyle.</i>	<i>To practise a range of different techniques to prepare and create a healthy product (mushing, chopping, blending).</i>	<i>To practise a range of techniques to prepare a balanced product (peeling, chopping, grating, spreading, cooking).</i>		<i>To create their own bread design.</i>		<i>To work collaboratively to design a burger and side dish.</i>
		<i>To notice and talk about changes when ingredients are combined or exposed to hot and cold.</i>						

			To design a product using pictures and words. To use a range of technical knowledge and skills to create a finished product (mushing, chopping, blending). To evaluate their healthy product in terms of design and the taste.	To design a healthy, balanced product using simple drawings and labels (food groups). To use a range of technical knowledge to create a finished product (peeling, chopping, grating, spreadin.g, cooking) To evaluate their product against their original design and a design criteria.	To design a seasonal dish using exploded diagrams. To use a wider range of technical skills and tools to create a finished product. To evaluate their finished product against their original design and a design criteria.	To use a wider range of technical skills and tools to create a finished product. To evaluate their finished product against their original design and a design criteria.		To use a range of tools and cooking methods to prepare and make a burger and side dish. To evaluate their finished product against their original design, a design criteria and consider the views of others.
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