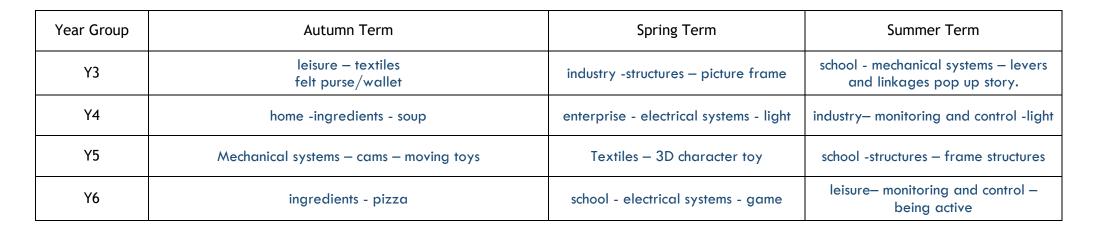
Design & Technology- Whole School Overview

In D&T we build upon the learning in KS1 and by the end of year 6 we aim for all pupils to have studied a broad and progressive curriculum. We focus on analysing, designing, making & evaluating a range of real life products in order to solve problems for a varied audience. The process enables pupils to think creatively and draw upon knowledge from subjects such as science, mathematics, computing and art. Pupils are taught about the impact of design on everyday life and the contribution it makes to the wealth and culture of our nation. We focus on a range of key concepts, skills, knowledge & vocabulary, which ensures pupils have the necessary understanding to embrace the KS3 curriculum.





Previous Learning	from KS1					
Tex	tiles	Food techno	ology	Structures		Generic D&T vocabulary
Christmas Stockin sewing gluing needle scissors join running stite	istmas StockingCreated a party tart.• sewing• nutrition• gluing• healthy• needle• varied diet• scissors• ingredients		Aeroplane/underwater box wheel axle mechanism, lever and slider template mock up 			 communicate evaluate product construction materials purpose design brief
			Ye	ar 3		
	Autum	n		Spring		Summer
Context	leisure – te Felt Purse/V By the end of this unit childre to develop their sewing skills to use blanket stitch to join th together. During the design created a prototype o	Vallet on will have continued and will now be able wo pieces of material process they will have of their design.	By the end of this u wood working sl During the design ex	dustry — structures photo frames unit children will have developed their kills to cut and join wood together. n process they will have researched cisting photo frames.	linka By the end of t develop their know a storybook. Du seek fe	echanical systems – levers and ages pop up storybook this unit children will have continued to wledge of levers and linkages to produce uring the evaluation phrase children will eedback from children in KS1.
Linked to school values	Together, we are pr Together, we do			we are problem solvers. ether, we are safe.		er, we are problem solvers. ogether, we are safe.
Recall vocabulary and knowledge.	 sewing running stitch gluing join design evaluate product materials communicate 		 construct material purpose design k join product 	ls	 joining lever a cutting commute evaluate materiate purpose design 	te als e
Key concepts	Design		Equipment		Design	
and vocabulary	 target group functionality 		 Junior he Bench he 		annota prototy	

	 aesthetics effectiveness durability prototype/paper pattern Make seam allowance blanket stitch components fabric tie a knot thread a needle 	• G clamp	Make mechanism linkage guide or bridge fixed pivot loose pivot input and output
To understand how key events and individuals in design and technology have helped shape the world	To learn more about the Swiss Engineer, George de Mestral Home learning- find 10 – 20 textile materials, identify how they are joined together.	 To learn about the carpenter Robert (Mouseman) Thompson. Home learning - Find examples of wood around the home and look at how they are joined together. Identify similarities and differences. 	• To learn about the engineer Archimedes. Home learning – how many items around the home can children photograph of levers and linkages eg corkscrew, nut cracker and scissors
Design	 To communicate design ideas for a wallet/purse by creating a paper prototype based upon research 	• To use their research to design an appealing photograph frame. Target group – themselves.	• To generate ideas for a storybook, considering the needs of the user, creating annotated sketches to communicate ideas.
Make	 To select and use fabric and textile components according to their functional properties and aesthetic qualities for their purse/wallet. To select appropriate tools to join material together (needle and thread, fabric scissors). 	 To select and use materials (wood, card, glue) and components (craft supplies), according to their functional properties. To use equipment (bench hook, g clamp, junior hacksaw) to create a photo frame that stands up. 	 To select and use construction materials to measure, cut and join to create moving images.
Evaluate			

	 To evaluate existing products against a design criteria. Identify item functional and aesthetically features. To evaluate their own purse/wallet the design criteria 	• To investigate and analyse a range of existing free-standing photograph frames	 To investigate and analyse existing products with lever and linkage mechanisms. To evaluate their own product, considering the views of others against a design criteria.
Technical knowledge	 To sew using running stitch or blanket stitch. To choose the best stich for the purpose To attach a button or press stud to felt for the purpose of functionality 	• To apply their understanding of how to strengthen, stiffen and reinforce more complex structures	• To understand and use mechanical systems in their products
Cooking & nutrition			



		Year 4	
	Autumn	Spring	Summer
Context	home -ingredients – soup By the end of this unit, children will have developed skills in using a paring knife to cut seasonal vegetables. Children will follow a simple recipe to create a winter soup.	industry— monitoring and control -screensaver By the end of this unit children will use their computing skills to program and control Scratch to create a screensaver that meets a design brief.	enterprise - electrical systems — light By the end of this unit children will build on their knowledge of electricity to create a light. They will use their research skills to design and make a light suitable for their bedroom.
Linked to school values	Together, we are safe. Together, we do our best.	Together, we are problem solvers. Together, we do our best.	Together, we are problem solvers. Together, we are safe.
Recall vocabulary and knowledge.	 nutrition healthy varied diet ingredients 	Taken from Year 3 computing input event code sequence repetition loop command count-controlled loop design brief 	 construction materials purpose design brief join product
Key concepts and vocabulary	Equipment & Utensils paring knife blender Design aesthetics effectiveness functional seasonal, taste: sweet, sour, hot, spicy, fresh, savoury Make	 Taken from Year 4 spring computing co-ordinates infinite loop decomposition 	Make • series circuit • fault • connection • battery • battery holder • bulb • bulb holder • wire • insulator • conductor
	Make • batons		 conductor crocodile clip

	•		
	• coins		
	• dice		
	 claw and bridge method of cutting 		
To understand how key events and individuals in design and technology have helped shape the world	 To find out about the TV chef Jamie Oliver. Home learning – read three different recipes of the same soup, identify similarities and differences. 	 To discover more about the software designer Bill Gates. Home learning – Bill Gates is not only passionate about programming he is passionate about helping others. Write a list of what you are passionate about. 	 To discover more about the electrical engineer, Dame Caroline Harriet Haslett DBE. Home learning – write a list of electrical items in their homes that saves time.
Design	 To create a design criteria for a functional and aesthetically pleasing seasonal soup. 	 Through discussion create a design brief. To generate, develop and communicate ideas about a screen saver. 	 To plan and produce an exploded diagram of a nightlight design in response to the design criteria
Make	 To follow a basic soup recipe adding extra ingredients so that a seasonal soup is tasty and aesthetically pleasing. 		 To select and use materials and electrical components, including construction materials and electrical components according to their functional properties and aesthetic qualities. To investigate a variety of switches and identify which best meets the design criteria.
Evaluate		• Evaluate their ideas using the design criteria, identify the strengths and areas for improvement in their work.	 To research different types of nightlights and use the findings to develop a design criteria. To be able to honestly evaluate the final product and to suggest alternative solutions where necessary.
Technical			
knowledge			
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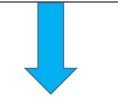
	 To prepare, slice, chop or dice vegetables using a paring knife safely using either the claw or bridge method. To select and use utensils and equipment safely and hygienically to make a seasonal soup. 	 To apply their understanding of programming to produce a scrennsaver which meets the design brief. Links To ICT 	 To understand and use electrical systems in their products Links to science
Cooking & nutrition	 To understand seasonality to make a savoury seasonal soup which could be part of a healthy and varied diet. 		



		Year 5	
	Autumn	Spring	Summer
Context	leisure – cams – moving toy By then end of this unit, children will continue to develop their wood working skills to cut and join wood to create a moving toy using various cams.	homes - textiles – 3D character toy By then end of this unit, children will build on the skills they learnt in Year 3 to create a 3D toy decorating with applique.	school -structures – frame structures By the end of this unit, children will have evaluated various prototype structures to enable them to work together to create a large structure suitable for a small amount of children to fit inside.
Linked to school	Together, we are problem solvers.	Together, we are problem solvers.	Together, we are problem solvers.
values	Together, we are safe	Together, we do our best.	Together, we are safe.
Recall Key concepts and vocabulary	 axles mechanisms, levers and sliders mock up slider lever junior hacksaw bench hook G clamp 	 sewing running stitch product materials target group functionality aesthetics effectiveness durability prototype/paper pattern Seam allowance blanket stitch components fabric tie a knot thread a needle 	 3 dimensional design brief prototype annotated sketch target group/user functional join
Key concepts	Equipment	Design	Design
and vocabulary	drill & drill bit	applique	frame structure
, in the second start of t	drill bit	3 dimensional	• stiffen
	Design	• measure	• strengthen
	 cams – snail, off centre, peg, pear 		reinforce
	shaped		triangulation
	• shaft		 stability
	• crank		 temporary

	 housing framework rotary motion linear motion oscillating motion reciprocating motion prototype The eccentric cam - The follower cam - follower 		• permanent
To understand how key events and individuals in design and technology have helped shape the world	 To discover how designers communicate ideas/messages/key points with their target audience. Home learning To create the object/character that will be on top of the moving toy. 	 To find out about the designer Richard Steiff. Home learning Research them most expensive Stieff bears. 	 To discover more about the architect Zaha Hadid. Home learning Research a list of buildings Zaha designed during her life time.
Design	 To generate ideas using Tradcard resource to create a prototype. 	 Design object/character soft toy for a target audience of 4-6 year old. Design using an annotated sketch. Design pattern pieces for their product. 	 To develop a simple design brief for a structure To use art straws to create a prototype of the structure.
Make	 To select and use woodwork components and cams, according to their functional properties and aesthetic qualities. To make an automata toy using woodwork equipment (bench hook, adjustable set square, G clamp, saw, drill and glue). 	• To select and use fabric and textile components according to their functional properties and aesthetic qualities for their 3D characters.	 To competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make structure. To formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.

Evaluate	 To analyse a range of existing automata toys. 	 Evaluate their product (consider asking Reception/y1 class at DIS if they would help evaluate their work). 	 To investigate and evaluate a range of existing frame structures. Critically evaluate their strucutre, carrying appropriate tests against their design brief, identifying strengths and areas for development.
Technical knowledge	 To understand and use mechanica systems (cams) in automata toys. 	 Use applique to add aesthetic qualities Use 3 types of stitches to add aesthetic qualities (blanket, running, back) Be able to end stitches (sewing off) Use small stitching to strengthen the item 	 Understand how to strengthen, stiffen and reinforce 3-D frameworks.
Cooking & nutrition			



	Year 6				
	Autumn	Spring	Summer		
Context	culture – ingredients – pizza By then end of this unit, children will have analysed existing pizza products and learnt how to knead dough, then using skills previously learnt, create a tasty pizza.	school - electrical systems – game By the end of this unit, using skills learnt in Year 4 and during science lessons children will design and make an interactive game using electrical components.	school— monitoring and control —security system.		
Linked to school values	Together, we are problem solvers. Together, we are safe	Together, we are problem solvers. Together, we do our best.	Together, we are problem solvers. Together, we do our best.		
Recall vocabulary and knowledge.	Equipment & Utensils paring knife blender Design aesthetics effectiveness functional seasonal, taste: sweet, sour, hot, spicy, fresh, savoury Make batons coins dice claw and bridge method of cutting	 construction materials purpose design brief series circuit fault connection battery battery holder bulb bulb holder wire insulator conductor crocodile clip 	 program microcontroller system output devices input devices process control loop 		
Key concepts and vocabulary	Technical Skills & Knowledge knead combine analyse appetising/appealing texture garnish Ingredients dough 	 parallel circuit conductors 	 pseudocode or flowchart algorithm iteration selection variables 		

	• yeast		
To understand how key events and individuals in design and technology have helped shape the world	• To discover the origins of pizza. Home learning – research and create a list of different pizza toppings.	 To find out about Senior Computer Games Designer at Rebellion Home learning - create a list of the values you need to have to be a successful games designer? 	
Design	 To create a design criteria for a pizza. 	 To design a game comprising of an electrical circuit. 	• To communicate ideas through discussion to create a programmable product which meets the user's needs.
Make	 To make a basic pizza dough. To prepare ingredients to meet design criteria. 	 To select tools and electrical components suitable to create an electrical game. To measure, cut and shape accurately. 	 To program and create and test a programmable product.
Evaluate	 To investigate and analyse a range of existing pizza products 	• To reflect on the progress of their work as they design and make, identifying ways they could improve their products	• To create, test and evaluate the product
Technical knowledge	 To use a paring knife to slice, chop or dice. To select utensils and equipment safely and hygienically. To select and use a wider range of ingredients for their functional properties and aesthetic qualities 		 To use their understanding of computing to program, monitor and control a security system.
Cooking & nutrition	• To prepare a savoury dish which could be part of a healthy and	• To use electrical circuits, including those with simple switches to produce an electrical game.	

varied diet using a range of cooking techniques.	