CURRICULUM DESIGN for DESIGN & TECHNOLOGY

Curriculum Intent

Design and Technology INTENT

At Eden Park, our Design and Technology curriculum offers children the chance to use creative thinking and design. The curriculum has a defined purpose and tangible outcomes. Skills are taught progressively through an annual cycle of three Design Technology elements: mechanisms and mechanical structures, food and nutrition and textiles. These ensure that all children are able to develop their designing, making, evaluating and technical skills; these are progressive (disciplinary knowledge) and are vital skills for children to develop in our rapidly changing world. The scheme of work has been adapted to consider the local context such as the fish market in Brixham and Occombe Farm in Paignton. Purposeful links have been made to other curriculum areas, including mathematics, science, art and computing.

Design and Technology IMPLEMENTATION

Our Design technology scheme of work follows the National Curriculum; objectives are delivered through long and short enquiries. Children are 'hooked' into their learning before working through an enquiry-based approach. The voices (which form our disciplinary knowledge) ensure skills specific to Design and Technology are taught each and every year. The curriculum makes use of prior knowledge and provides clear references on how learning will be used in future enquiries. At the end of the enquiry, a high-quality 'outcome' is shared with parents and/or the school community. We assess the impact of the enquiry through SLT reviews: The Head of School meets with children and questions them on their learning and determines the depth of their knowledge as well as their reflections on the core values that they were working on. Kahoot quizzes are also conducted at the beginning and end of the enquiry.

For those children that show a particular enthusiasm for the subject, they have the opportunity to become a 'Graduate.' Our Graduation scheme gives children the chance to explore learning beyond the National curriculum. This scheme focuses on Inspirational and Influential people within Design and Technology.

Design and Technology IMPACT

Impact of teaching and learning will be determined through SLT reviews and Kahoot quizzes. This information will be collated in our 'Quality of Education' document. We will know we have been successful if children have met their 'end points' which are specified in the planning document.

Progression of Knowledge

Our Design Technology curriculum for KS1-KS2 follows three main themes of Mechanisms and Mechanical Structures, Cooking and Nutrition and Textiles. Children work through a consistent process of: design, make and evaluate. There is an expectation that children will use their prior learning and build upon this as they journey through Eden Park. Children will reach an **end point** where their understanding of art has been strengthened and deepened through this purposefully mapped out curriculum.

In Early Years, children would encounter Design Technology through 'Expressive Art and Design'. Here children would have had plenty of opportunities to explore different materials and mediums through their continuous provision activities. Joining and assembling: They will use cold glue guns and tape to join and assemble materials with a purpose in mind when joining materials. Children can fold paper and card to create the desired effect e.g. paper plane. Construction: Children create complex structures becoming more imaginative in their block play and begin to create elaborate and complex designs, using their understanding of pattern, shape and balance. Children will start to use blocks to represent things that they know, that in turn enhance their play, for example a car or an animal, house or train station. Daily snack time provides a perfect opportunity to consider healthy food choices and further opportunities to learn about food and nutrition are offered throughout the year. Continuous provision provides plenty of opportunities to practise and explore joining, making, using tools and creating using different materials and evaluation is always encouraged. These foundations are built upon as children journey through Year 1 and KS1.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6		
Enquiry 1	Mechanisms and Mechanical systems/structures	Mechanisms and Mechanical systems/structures	Mechanisms and Mechanical systems/structures	Mechanisms and Mechanical systems/structures	Mechanisms and Mechanical systems/structures	Mechanisms and Mechanical systems/structures		
Enquiry 2	Cooking and Nutrition	Cooking and Nutrition	Cooking and Nutrition	Cooking and Nutrition	Cooking and Nutrition	Cooking and Nutrition		
Enquiry 3	Textiles	Textiles	Textiles	Textiles	Textiles	Textiles		
End point:	7					extend this further. Children		
point.	will: Mechanisms and mechanical systems/structures ✓ Have an understanding of levers, pivots, wheels and axis. ✓ Be able to attach mechanisms to simple components. ✓ Be able to cut a slot Wechanisms and mechanical systems/structures ✓ Be able to use electrical circuits to power products. ✓ Be able to use IT to support the 'making' process. ✓ Have an understanding of cams, and linkages ✓ Begin to identify problems in the design process and solve them independently.							
	✓ Be able to join n	naterials	Cooking and Nutrition ✓ Have worked with a range of food ingredients, including fish, chicken, beef, fruit and vegetables.					
	Cooking and Nutrition		✓ Be able to supplement basic foods such as bread with additional ingredients					
	up a balanced di	Ithy food and what makes iet ess of food hygiene	 ✓ Have an understanding of the food pyramid ✓ Have some understanding of the history of food in western markets and the influence of other cultures. 					
	✓ Know that food		Textiles					

LOVE	മ

- ✓ Use basic running stitch and over stitch
- ✓ Cut with scissors with reasonable accuracy
- ✓ Consider design criteria

Children will be able to evaluate their own products against a design criteria

- ✓ Know about the environmental impact of using materials
- ✓ Know a wide range of stitches
- ✓ Plan, make templates, patterns and prototypes

Children will evaluate their own products against design criteria and consider the views of others.

The Voices of Design Technology (Disciplinary knowledge)

Woven through our D&T curriculum are our 'Voices'. It is our intention that the voices are used, where appropriate, during D&T teaching. Children will therefore encounter these 'Voices' repeatedly throughout their time at Eden Park. They will use their prior knowledge of a specific 'voice', such as "Evaluate" and build upon this in their Learning Enquiries. The 'Voices' are progressive.

	Design	Make	Evaluate Technical Skills
В	uild knowledge, understanding and skills in order to design products	Build knowledge, understanding and skills in order to make prototypes and products	Critique, evaluate and test ideas and products Develop the creative, technical, and practical expertise
CVEC	 ✓ Design models for a purpose ✓ Communicate ideas through talking 	✓ Refines previous knowledge on joining materials and artistic effects – cold glue guns, paper clips, split pins, & hole punch with treasury tags ✓ Understanding and making shapes of places and objects that they know.	✓ Can express their ideas and feelings about their experiences. ✓ Offering explanations for why things their creation is successful or not ✓ Can express their ideas and feelings about their experiences. ✓ Offering explanations for why things their joining materials. ✓ Cutting food using correct tools and techniques
7	drawing and prototypes. ✓ Use principles of healthy diet to design dishes.	Select the correct from tools and equipment for practical tasks. Select the correct materials and components according to their characteristics. Use principles of healthy diet to make dishes.	Explore and evaluate existing products V Evaluate their own products against design criteria. The part of the pa
1 / 5 mo/	✓ Communicate their ideas through talk and	Make products to fit design criteria as neatly as possible. Select and justify material and component choices according to their characteristics. Use tools with increasing precision. Measure food stuffs accurately using scales.	Analyse and evaluate existing products and compare these with their own design. Very Evaluate their own products against design criteria. Very Identify problems to their design and consider ways of solving it. Yes Tinish a product to high quality. Understand simple electrical circuits to include buzzers and motors. Use mechanical systems in their products e.g. gears, pulleys, cams and levers and linkages.
3/ 1 2000	 ✓ Use research and develop design criteria to inform the design. ✓ Communicate their ideas through talk, annotated sketches, cross-sectional diagrams and prototypes. ✓ Understand and apply the principles of a healthy and varied diet. 	Select from a wide range of tools and equipment to perform practical tasks accurately. Select from a wide range of materials according to both their function and aesthetics. Use precise measurements for joints and functionality. Prepare and cook a range of dishes using different techniques. Understand that meals contain various food types which have different impacts on the human body.	Investigate and analyse existing products. Evaluate their own products against design criteria and consider the views of others. Understand hope design and technology has shapes the world. Solve problems as they happen. Understand food seasonality and how food is produced. Use mechanical systems in their products e.g. gears, pulleys, cams and levers and linkages. Use and understand electrical systems in their products. Apply their understanding of computing to program, monitor and control their products.

		YEAR 1			YEAR 2	
	Thursday a consistence of any					on interesting and a second
	<u> </u>		upils should be taught the knov evant contexts [for example, th	_		-
			the wider enviro	onment].		
Theme	Mechanisms and	Cooking and Nutrition	Textiles	Mechanisms and	Cooking and Nutrition	Textiles
	Mechanical systems/structures			Mechanical systems/structures		
Enquiry	Enquiry 1	Enquiry 2	Enquiry 3	Enquiry 1	Enquiry 2	Enquiry 3
	Moving mini-beasts (6	Seaside Snack/Teddy Bear	Delightful decorations (6	Vehicles/fire engine (6	Perfect Pizzas (6	Puppets (6 lessons)
	lessons)	Picnic (6 lessons)	lessons)	lessons)	lessons)	
	Sliders, levers, pivot and			Wheels, axles, chassis &		
	wheel mechanisms			bodywork		
Scheme of	Moving Mini-Beasts,	Seaside Snacks, enquiry 2	Delightful Decorations,	Making fire engines,	Perfect Pizzas, enquiry	Puppets, enquiry 3 YEAR
work Substantiati	enquiry 1 YEAR 1	YEAR 1	enquiry 3 YEAR 1	enquiry 1 YEAR 2	2 YEAR 2	2
ve						
Knowledge	Specific individual lesson pl	ans and resources can be foun	l ıd on TEAM – PLANNING – REFE	RENCE MATERIALS or via th	 	individually planned and
o o			portunities to link the specific o			
	to be made.			,	,	
Further	 Make links with 	Ensure children have	This unit needs to	Make links with	The school pizza	This enquiry will be
considerations	science and literacy	the opportunity to	happen at Christmas	Brixham Fire	oven should be	best delivered
	(Oi Frog!).	make some of the	and consider provision	Brigade. Visit the	used to make the	alongside the Art
	Use of outdoor	food discussed and	for children that do not	new fire station in	pizzas.	enquiry on collage
	learning spacesStorytime sessions	provide purposeful opportunities for the	celebrate Christmas	town and look at the features of the	 Locally source the ingredients for the 	and quilting since many of the skills are
	should have books	picnic.		fire engine. Receive	pizza e.g. home	replicated.
	with moving parks			a talk on fire safety.	grown tomatoes.	
	such as Dear Zoo and			 Could tie this 		
	the Jolly Postman.			enquiry into when		
				the fire engine visits		
				EP (Nursery).		
				This enquiry can be		
				based on any vehicle.		
Sequencing	Prior knowledge: During	Prior knowledge: through	Prior knowledge: children	Prior knowledge: use	Prior knowledge:	Prior knowledge: sewing
knowledge	'All About Me' children	snack time, children would	would have had plenty of	knowledge from Moving	Apply knowledge of	in Y1 with Delightful
	use different materials to	already have an	opportunities in 'Expressive	Mini-Beasts (ref. Y1,	healthy and balanced	Decorations. Children
	create objects. They use	awareness of healthy	Arts and Design' to cut and	enquiry 1).	diets.	would also have
		eating i.e. fruit and	join materials. They will also			experienced safe cutting

	split pins to join two parts together. Children in EYFS will have made their own story boxes to include designing characters and settings using different materials. They would have extensive experience of story books with moving parts and other interactive features. Finger gym provides excellent prior learning as fine motor skills are practised daily. Future knowledge: move beyond levers and pivots to introducing linkages ref Y4 enquiry 1). Levers. Knowledge on pivots will be used when considering how to attach a ladder in Fire Engines (ref. Y2, enquiry 1).	vegetables. They are expected to peel and cut their fruit as necessary. During their learning on 'Come tell me a story' children discuss healthy and unhealthy foods and in their learning on 'Get, Set, Grow' children learn about the conditions for growing food and begin to think about the nutrients we need from food, such as vegetables. Future knowledge: understand food groups and start to create a balanced meal (ref. Y2, enquiry 2).	have had some experience of threading using large needles. Future knowledge: use knowledge of running stitch and cutting for Y2 art textiles and collage and textiles DT enquiry. Further stitches will be introduced in Y4 Pencil Cases (back stitches and whip stitches).	Future knowledge: Cams are introduced and a consideration of the shape of the cam to impact on moving (ref Y5).	Future knowledge: children will create their own bread and add ingredients to them (ref. Y5, enquiry 2)	and use of a needle and thread. Future knowledge: sewing skills will continue to develop during the forthcoming textiles enquires. The complexity of the stitch increases as children move through the years.
Tier 2 and Tier 3 vocabulary	Design, make, shape, stiffen, strengthen, rigid, material, evaluate	Cut, chop, slice, grate, stir, mix, recipe, ingredients, diet, healthy	Design, make, sew, stitch, material, fabric, needle, thread, evaluate	Design, make, chassis, wheels, axels, saw, materials, bodywork	Cut, chop, slice, dough, rise, cook, recipe, balanced diet, healthy, food groups, fruit, vegetables, vitamins, minerals, fibre, hygiene	Materials, tools, fabric, running stitch, template, evaluate
Relevant texts	I love bugs – Emma Dodd The Slime book (instructional)	Don't spill the milk – Stephen Davies and Christopher Corr Dino-dinners – Mick Manning How to catch Santa (instruction text)		Transport – Ruth Thompson The Slime book (instructional)	The disgusting sandwich – Gareth Edwards How to dress up as a book character (instructions)	How to dress up as a book character (instructions)

		YEAR 3			YEAR 4			
	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an interactive 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].							
Theme	Mechanisms and Mechanical systems/structures	Cooking and Nutrition	Textiles	Mechanisms and Mechanical systems/structures	Cooking and Nutrition	Textiles		
Enquiry	Enquiry 1 Moving Monsters (6 lessons) pneumatics	Enquiry 2 Seasonal Food (6 lessons)	Enquiry 3 Seasonal Stockings (6 lessons)	Enquiry 1 Storybooks (6 lessons) Levers and making mechanisms	Enquiry 2 American Food (5 lessons)	Enquiry 3 Pencil Cases (6 lessons)		
Scheme of work	Moving Monsters, enquiry 1 YEAR 3	Seasonal Food, enquiry 2 YEAR 3	Seasonal Stocking, enquiry 2 YEAR 3	Storybooks, enquiry 1 YEAR 4	American Food, enquiry 2 YEAR 4	Pencil cases, enquiry 3 YEAR 4		
		assessment opportunities. Op	d on TEAM – PLANNING – REFE portunities to link the specific c	ontent to the calendar, our	local community and othe			
Further considerations	Make some purposeful links to the EP Independence framework	 Children should: Make use of the school groups to grow some seasonal vegetables and herbs. Make links with Occombe Farm. Visit the fish market and create a fish based meal e.g. fishcakes and garnish with parsley which should be grown at school. Possible meal tasting at Rockfish, Brixham. 	This unit needs to happen at Christmas and consider provision for children that do not celebrate Christmas	Expose children to a greater range of storybooks so that children develop a sense of impact of font choices etc.	This unit will need supplementing to ensure children design, make and evaluate American food e.g. make coleslaw or fajitas.			
Sequencing knowledge	Prior knowledge: apply their knowledge of how to make objects move — levers, pivots and wheels in Y1 and in Y2 they have looked at wheels and axles. Future knowledge: continue to build	Prior knowledge: children will have an understanding of a balanced diet and the 5 main food groups (ref. Y2, enquiry 2). Future knowledge: continue to source seasonal vegetables in all food units.	Prior knowledge: cutting, running stitch, over stitch and apply knowledge of joining fabric. Future knowledge: continue in Y5 to consider functional and aesthetic features of a design (ref Y5 textiles). Children will also learn how	Prior knowledge: Moving Mini-Beasts (ref. Y1 enquiry 1) children first explored levers and pivots here. Future knowledge: pivots used for rotating 2D objects is extended in Fairgrounds (ref. Y6	Prior knowledge: develop knowledge from seasonal food towards an understanding of longer term storage of foods such as tinned, drying and smoking.	Prior knowledge: children will have experienced cutting, attaching buttons and running stitch, all of which could be used in this enquiry. Future knowledge: use back switch and whip stitch in Y5 and Y6		

Tier 2 and Tier 3 vocabulary	independence towards solving problems met at a design stage. Know how to make alterations to enhance the design. Pneumatic system, syringe, pan, design, make, evaluate, movement, air objects Until I met Dudley – Roger	Plan, design, make, evaluate, seasonality, harvested, produce, meat, poultry, proteins, fish, UK seafood, northern hemisphere, southern hemisphere, climate, imported	to shape a fold and 'bag- out'. Plan, design, make, evaluate, stitches, materials, techniques, products, fabric, function, joins, decorations, visual appeal, suitability, decorative features, texture, embodied, applique, design criteria, template	enquiry 1) by attaching a rotating axle using electricity. Plan, design, make, evaluate, links and levers, mechanisms, plotting and planning, moving parts, pivot, rotate, linkage, lever, skills, techniques: stripes, crosshatching, dots and patterns, materials, flap, concertina Story Path – Kate Baker	children will use their knowledge of American foods when learning about burgers (ref. Y6 enquiry 2). Plan, design, make, evaluate, soul food, Tex – Mex, fast food, staple foods, plentiful, affordable, filling, ingredients, convenience	Plan, design, make, evaluate, material, cut, pattern, running stitch, back stitch, whip stitch, techniques, embellishments, colours, applique, picture, join, finish
texts	McGough	Helen Lanz		Story ratii Rate Baker	McGough	

		YEAR 5			YEAR 6			
	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an interactive 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].							
Theme	Mechanisms and Mechanical systems/structures	Cooking and Nutrition	Textiles	Mechanisms and Mechanical systems/structures	Cooking and Nutrition	Textiles		
Enquiry	Enquiry 1 Moving Toys (6 lessons) Cams and sturdy structures	Enquiry 2 Bread (6 lessons)	Enquiry 3 Funky Furnishings (6 lessons)	Enquiry 1 Fairground (6 lessons) Programming/motors	Enquiry 2 Burgers (6 lessons)	Enquiry 3 Slippers(6 lessons)		
Scheme of work	Moving Toys, enquiry 1 YEAR 5	Bread, enquiry 2 YEAR 5	Funky Furnishings, enquiry 3 YEAR 5	Fairground, enquiry 1 YEAR 6	Burgers, enquiry 2 YEAR 6	Slippers, enquiry 3 YEAR 6		
	-	assessment opportunities. Op	d on TEAM – PLANNING – REFE portunities to link the specific c	ontent to the calendar, our	local community and othe	r cross curricular links need		
Further considerations		 Visit 5 Doors Up which is a bakery in Brixham to see how bread is made. Careful consideration needs to be given to the alterations to the bread recipe to ensure children are given opportunity to taste food they might usually taste such as olives, garlic, seeds. 		Links to be made with Computing (control processing). Links to be made with Science with electricity and forces.	 Visit a butcher to see how meat is minced Use locally sourced salad garnish i.e. homegrown in the school grounds. Make links with a local food vlogger (parent to the school) to support advertising and promotion. This learning links with our computing curriculum. 	 Consider environmental impact of the clothing industry, including carbon footprint of items of shipped clothing. Talk about conditions within 3rd world factories. Consider linking up with a charity to link up with a clothes bank (Salvation Army). 		
Sequencing knowledge	Prior knowledge: use evaluation skills from Y4 to ensure the object meets the design specification. (ref Y4 enquiry 1). Future knowledge: continue to strengthen structures in efficient ways	Prior knowledge: (ref Y2, enquiry2, Perfect pizzas) children have already looked at pizza bases and simple bread. They have already eaten these foods. Future knowledge: knowledge from bread	Prior knowledge: apply knowledge of back stitch, whip stitch, running stitch and over stitch (Y1 &Y4). Future knowledge: making templates and prototypes to fulfil a design criteria.	Prior knowledge: children have already experienced using pivots and rotating objects and this will be used here (ref Y4 enquiry 1). (ref Y5 moving Toys) the children first reinforced	Prior knowledge: use knowledge from American Food to understand the origins of burgers (ref. Y4 enquiry 2). Use knowledge from Bread	Prior knowledge: children will have had experienced of using zig zag and blanket stitch (Y5). Future knowledge: children will work with an increasing range of components. They will		

	– using box joints (ref Y6	could be used in Burgers	Children can apply the	their structures using	(ref Y5 enquiry 2) when	also experience working
	fairgrounds).	(ref Y6, enquiry 2) to make	environmental impact	card and layering.	making bap choices.	an in industrial context
		informed choices about	learned in this enquiry when	Science knowledge of	Future knowledge:	(KS3 curriculum).
		their burger bap.	making slippers.	electricity will be used in	make informed dietary	
				this enquiry also	choices in order to lead	
				Future knowledge:	a healthy life.	
				KS3 curriculum requires		
				children to develop		
				specifications to inform		
				the design. Children will		
				be able to apply their		
				prior knowledge of		
				making designs look		
				appealing as they		
Tier 2 and	Design, make, evaluate,	Design, make, plan,	Design, plan, make,	continue through KS3. Design, plan, make,	Design, plan, make,	Design, plan, make,
Tier 2 and	cam mechanisms, cam	evaluate, dough, knead,	evaluate, material, pattern,	evaluate, components,	evaluate, nutrition,	evaluate, patterns,
vocabulary	shapes, structure,	rise, prove, yeast,	joining techniques,	mechanism, motors,	calories, pan fried,	sewing skills, functional,
Vocabalary	mechanical toys, linkage	carbohydrates, vitamins,	decorative sewing skills,	frames, structures,	shallow pan, oven	decorative, back stitch,
	systems, rotary	iron, fibre, digestive	fastenings, fabric, joining	electrical circuit,	baked, barbecued,	fabric, template, pattern,
	movement, linear	system, twist, finishes,	stitches, hidden, visible,	rotating, belt and pulley	steamed, cuisine,	seam allowance, finished
	movement, simple	wholemeal, granary,	aesthetic features, applique,	system, axel, reinforce,	, , , , , , , , , , , , , , , , , , , ,	product, high quality,
	framework, triangular	purpose, hygiene, food	advantages, disadvantages,	sturdier, finishing,		technique,
	reinforcement, sturdy	preparation	making process, product	control		
Relevant	Chitty Chitty bang bang	Incredible Edibles – Stefan	Ripley's Mighty Machines –	Chitty Chitty bang bang	Incredible Edibles –	Ripley's Mighty Machines
texts	and the race against time	Gates	Robert L. Ripley	and the race against	Stefan Gates	– Robert L. Ripley
	– Frank Boyce			time – Frank Boyce		
						Stuff You Should Know! –
						John Farndon
						Wallace & Gromit:
						Cracking Contraptions
						Manual – Derek Smith