DESIGN AND TECHNOLOGY

OUR VISION: At Crockham Hill, our Design and Technology curriculum is designed to prepare children for an increasingly technological world. We aim to plan engaging, relevant, high-quality skills-focused projects for each year group from Reception to Year 6, which will inspire our children to become the engineers, designers, chefs and architects of the future. They experience working as individuals and as part of a team to design and make real products, with real purpose.

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing and Planning	EYFS Constructs with a purpose in mind using a variety of resources.	Year 1 Create simple design ideas based on discussion and experience of existing products. Develop and communicate ideas by talking and drawing, drawing on their own experience criteria set by teacher/children. Communicate design ideas using annotated sketches (simple drawings with labels). describe what their products are for.	Year 2 Design purposeful, functional, appealing products based on design criteria. Develop and communicate ideas by talking and drawing Use information and communication technology, where appropriate, to develop and communicate their ideas criteria set by teacher/children Communicate their ideas through annotated sketches (simple drawings with labels). Say whether their products are for themselves or other users. Describe what their products are for say how their products will work say how they will make their	Year 3 Use knowledge of existing products to inform design criteria for his/her own functional product. criteria co-created teacher/pupil Communicate their ideas through cross- sectional diagrams. Share and clarify ideas through discussion generate realistic ideas, focusing on the needs of the user.	Year 4 Use knowledge of existing products to inform design criteria for a functional and appealing product with a particular purpose and audience. criteria co-created teacher/pupil use annotated sketches, crosssectional drawings and exploded diagrams to develop and communicate their ideas. Model their ideas using prototypes and pattern pieces	Year 5 Use his/her research into existing products and his/her market research to inform the design criteria for his/her own innovative product with a specific purpose and audience. Develop a simple design specification to guide their thinking criteria developed by children independently/peer assessed Communicate their ideas through Computer Assisted Design (CAD). [Tinkercad/ sketchup] Create prototypes to show his/her ideas.	Year 6 Use research he/she has done into famous designers and inventors to inform the design criteria for his/her own innovative products with a specific purpose and audience. Develop a simple design specification to guide their thinking criteria developed by children independently/peer assessed To communicate their ideas through Computer Assisted Design (CAD). Generate innovative ideas, drawing on research Make design decisions, taking account of constraints such as time, finances etc

		Use pictures and	Plan out the main	Plan the order of their	Use his/her	Produce step-by-step	Produce step-by-step plans
		words to describe	stages of the making	work for the making	knowledge of	plans to guide his/her	to guide his/her making.
		what he/she wants to	process and the tools.	process and outline	techniques and the	making, demonstrating	demonstrating that he/she
		do	materials and	how the tools	functional and	that he/she can apply	can apply his/her
			components involved	materials and	aesthetic qualities of a	his/her knowledge of the	knowledge of functional
		Describe choices	hased on their	components will be	wide range of	functional properties	properties and aesthetic
		Describe choices.	characteristics	used based on their	materials to plan how	and aesthetic qualities of	gualities to choose
			characteristics.	functional properties	to use them and in	different materials tools	appropriate materials
			Consider and describe	and aosthotic	what order based on	and techniques	tools and tochniques
					what order based on	and techniques.	tools and techniques.
			choices	qualities.	their functional		
					properties and	Consider and justify	Consider and justify
				Consider and explain	aesthetic qualities.	choices according to	choices according to
				choices		effectiveness.	effectiveness.
					Consider and justify		
					choices		
G	Begin to use the	Use the correct	Use the correct	Use the correct	Use the correct	Use the correct	Use the correct vocabulary
i.	correct vocabulary to	vocabulary to describe	vocabulary to describe	vocabulary to describe	vocabulary to describe	vocabulary to describe	to describe materials and
, K	describe materials and	materials and name	materials and name	materials and name	materials and name	materials and name	name tools and
Ň	name tools.	tools.	tools.	tools and techniques.	tools and techniques.	tools and techniques.	techniques.
5					······································		

Uses simple tools and	Perform practical tasks	Perform practical tasks	Make suitable choices	Follow procedures for	Work safely with tools	Select and use appropriate
techniques	using simple tools and	using simple tools and	from a wider range of	safety and hygiene	and techniques to make	tools, equipment and
competently and	equipment.	equipment.	tools and unfamiliar		careful and precise	techniques accurately and
appropriately.			materials. Safely	Safely use tools and	measurements so that	safely.
	Measure, mark out,	Safely measure, mark	measure, mark out,	techniques which	joins/seams, holes and	
Selects tools and	cut and shape a range	out, cut and shape	cut, shape, assemble	require more accuracy	openings are in exactly	Produce appropriate lists of
techniques needed to	of materials.	materials and	and join with some	to cut, shape, join and	the right place.	tools, equipment and
shape and assemble		components using a	accuracy using a range	finish his/her work		materials
and join the materials	Assemble, join and	range of tools. Use a	of tools.		Use technical knowledge	
they are using.	combine materials to	range of materials and		e.g. Cutting internal	and accurate skills to	Use technical knowledge
	make simple products	components, including	Assemble, join and	shapes, slots in	identify improvements	and accurate skills to
Manipulates materials	from a variety of	construction materials	combine materials	frameworks.	and problem solve	identify improvements and
to achieve a planned	temporary methods eg	and kits, textiles, food	and components		during the making	problem solve during the
effect.	glue or masking tape.	ingredients and	accurately using a	Make design decisions	process	making process
		mechanical	range of tools. Identify	that take account of		
	Use finishing	components and	improvements and	the availability of	Use techniques that	Apply his/her knowledge of
	techniques, including	explain their choices	modify design based	resources	involve a number of	materials and techniques
	those from art and		on feedback. apply a		steps	to refine and rework
	design	Assemble, join and	range of finishing	Identify improvements		his/her product to improve
		combine materials to	techniques, including	and modify design	Create products using	its functional properties
	Sew and join fabrics	make a product using	those from art and	based on feedback.	pattern pieces and	and aesthetic qualities.
	using a running stitch.	a range of tools. use	design, with some		demonstrate an	
		finishing techniques,	accuracy	Apply a range of	awareness of seam	Demonstrate
	Adult assistance & risk	including those from		finishing techniques,	allowance. Learn how to	resourcefulness when
	assessment scissors,	art and design	Join fabrics using a	including those from	use blanket stitch.	tackling practical problems
	hole punch, glue, tape,		range of stitches with	art and design, with		
	string, card, fabric,	Cut out shapes which	increasing	some accuracy	Adult supervision & risk	Learn to pin and tack fabric
	wood etc.	have been created by	independence. Learn		assessment junior	pieces together. Join fabrics
		drawing around a	how to add further	Use a pattern which is	hacksaw, glue guns,	by over sewing, back stitch
		template onto fabric.	decoration to their	linked to a prototype –	hammer, pliers, needles,	and blanket stitch. Pupils
		Children begin to sew	work using buttons,	sewing skills are	card, wood, metal,	are able to make quality
		using a range of basic	beads, sequins etc	becoming more	fabric, plastic etc.	products with increasing
		stitches.		accurate.		accuracy.
			Adult supervision &			
		Adult assistance & risk	risk assessment junior	Adult supervision &		Adult supervision & risk
		assessment scissors,	hacksaw, glue guns,	risk assessment junior		assessment junior hacksaw,
		hole punch, glue, tape,	hammer, pliers,	hacksaw, glue guns,		glue guns, hammer, pliers,
		string, card, fabric,	needles, card, wood,	hammer, pliers,		needles, card, wood, metal,
		wood etc.	metal, fabric, plastic	needles, card, wood,		fabric, plastic etc.
			etc.	metal, fabric, plastic		
				etc.		

	Link statements	Evaluate and assess	Evaluate and assess	Consider and modify	Consider and modify	Consider, test, assess	Consider, test, assess and
	and stick to main	the products that	the products that	their design ideas	their design ideas	and modify their design	modify their design ideas
	theme or	he/she has made	he/she has made	throughout.	throughout. Consider	ideas throughout.	throughout.
	intention.	against design criteria.	against design criteria.	Investigate and	how his/her own		
	Children express			analyse products	products might be	Make detailed	Evaluate their ideas and
	themselves	By discussing what	By discussing what	he/she has made,	improved and how	evaluations about	products against their
	effectively,	they have made, the	they like/dislike,	considering a wide	well they meet the	his/her own product	original design
	showing	making process, the	identifying strengths	range of factors and	needs of the intended	against their own design	specification
	awareness if	tools involved and	and possible changes	identify the strengths	user.	criteria.	
	listeners' needs.	how well the product	they might make	and areas for			Use his/her knowledge of
		suits its purpose etc.		development in their	Consider the views of	Consider the views of	famous designs to further
				ideas and products	others to improve	others and decide which	compare and judge the
					their work.	to implement to improve	effectiveness of products
te				Consider the views of		their work.	he/she have made.
na				others to improve	Use their design		
a				their work. <mark>By</mark>	criteria to evaluate	Critically evaluate the	Consider the views of
Ъ П				identifying strengths	their completed	quality of the design,	others and justify which
				and areas for	products	manufacture and fitness	implement to improve
				improvement by		for purpose of their	their work.
				carrying out	By identifying	products as they design	
				appropriate tests	strengths and areas	and make by identifying	By identifying strengths
					for improvement by	strengths and areas for	and areas for improvement
					carrying out	improvement by	by applying
					appropriate tests.	applying	experience/knowledge of
						experience/knowledge	other products by carrying
						of other products by	out appropriate tests.
						carrying out appropriate	
						tests.	
		Ask simple questions	Evaluate and assess	Investigate and	Consider how existing	Make detailed	Use his/her knowledge of
		about existing	existing products.	analyse existing	products might be	evaluations about	famous designs to further
		products.	suggest how their	products.	improved and how	existing products.	explain the effectiveness of
			products could be		well they meet the		existing products.
			improved		needs of the intended		
					user.		Investigate and analyse:
							how much products cost to
							make, how innovative
							products are, how
							sustainable the materials in
							products are, what impact
							products have beyond their
							intended purpose

		Across KS1 pupils should explore for existing		Across KS2 pupils should investigate and analyse for existing products; how well products have been				
		products;		designed, how well products have been made, why materials have been chosen, what methods of				
		what products are, who products are for, what		construction have been used, how well products work, how well products achieve their purposes, how				
		products are for, how pr	oducts work, how	well products meet user	r needs and wants and wh	ether products can be recyc	led or reused.	
		products are used, wher	e products might be					
		used, what materials pro	oducts are made from,					
		what they like and dislik	e about products					
	Select tools and	Build simple structures	Investigate different	Create and strengthen	Apply techniques	Build more complex 3D	Use a wide range of	
	techniques	and explore their	techniques for	frames using diagonal	he/she has learnt to	structures and apply	methods to strengthen,	
	needed to shape,	stability.	stiffening a variety of	struts.	strengthen, stiffen and	his/her knowledge of	stiffen and reinforce	
	assemble and join		materials and explore		reinforce structures	strengthening, stiffening	complex structures and can	
	materials they are	To explore and use	different methods of	How to use learning	and explore his/her	and reinforcing	use them accurately and	
	using.	wheels and axles in	enabling structures to	from science to help	own ideas.	techniques to make	justify their selection.	
89		their products. e.g.	remain stable.	design and make		them stronger or more		
ed		vehicles		products that work	To learn that materials	stable.	How more complex	
Ī			To explore and use		have both functional		electrical circuits and	
Ó			sliders and levers in	How to make strong,	properties and	To learn that mechanical	components can be used to	
ku			their products. e.g.	stiff shell structures	aesthetic qualities	and electrical systems	create functional products	
al			pop-up fairy tales			have an input, process		
lic			book	To understand and use	How to use learning	and output	How to program a	
h				pneumatic systems to	from mathematics to		computer to monitor	
GC				create movement in	help design and make	Io understand and use	changes in the	
F				their products. e.g.	products that work	cams/gears/cogs in their	environment and control	
				moving monsters		products e.g. automata	their products	
					Io understand and use	toy		
					electrical systems in		Apply their understanding	
					their products e.g.		of computing to program,	
					electrical torch		monitor and control their	
							products. e.g. step counter	

	Shows some	Talk about what	Understand the need	Talk about the	Understand what	Understand the main	Confidently plan a series of
	understanding that	he/she eats at home	for a variety of food in	different food groups	makes a healthy and	food groups and the	healthy meals based on the
	good practices with	and begin to discuss	a diet.	and name food from	balanced diet, and	different nutrients that	principles of a healthy and
	regard to exercise,	what healthy foods		each group.	that different foods	are important for health.	varied diet.
	eating, sleeping and	are.	Understand that all		and drinks provide		
	hygiene can		food has to be farmed,	Understand that food	different substances	Understand how a	To understand that
	contribute to good	Say where some food	grown or caught.	has to be grown,	the body needs to be	variety of ingredients are	different food and drink
C	health.	comes from and give		farmed or caught in	healthy and active.	grown, reared, caught	contain different
io		examples of food that	How to name and sort	Europe and the wider		and processed to make	substances – nutrients,
rit	Eats a healthy range	is grown.	foods into the five	world.	To learn that food is	them safe and palatable	water and fibre – that are
rt	of foodstuffs and	-	groups in the eat well		grown (such as	/ tasty to eat.	needed for health
Z	understands need for	To learn that everyone	plate	Understand	tomatoes, wheat and		
pu	variety in food.	should eat at least five		seasonality and the	potatoes), reared	Evaluate and adapt	Use information on food
a		portions of fruit and		advantages of eating	(such as pigs, chickens	meals and explain the	labels to inform and
ng		vegetables every day		seasonal and locally	and cattle) and caught	health benefits of	validate choices.
ki				produced food.	(such as fish)	choices.	
00							To learn how food is
Ŭ						To know that recipes can	processed into ingredients
						be adapted to change	that can be eaten or used
						the appearance, taste,	in cooking
						texture and aroma	
						To understand that	
						seasons may affect the	
						food available	
	Use simple tools with	Use simple tools with	To learn how to use	Read and follow a	To learn how to use	Research, plan, prepare	Research, plan and prepare
	help and cookery	help and cookery	techniques such as	savoury recipe which	techniques such as	and cook savoury recipes	and cook a savoury dish,
	techniques to prepare	techniques to prepare	cutting, peeling and	involves several	cutting, peeling and	with appropriate	applying his/her
	food safely (and	food safely (and	grating	processes, skills and	grating	ingredients and use a	knowledge of ingredients
	hygienically).	hygienically).		techniques to		wide range processes,	and his/her technical skills
		- 1 1 1	Measure or weigh	combine ingredients.	To understand that	skills and techniques to	
		to learn now to	using measuring cups	Dueneus in quedients	that a nealthy diet is	combine them.	How to use a range of
		prepare simple disnes	or electronic scales.	Prepare ingredients	made up from a		techniques such as peeling,
		safely and hygienically,		nygienically using	variety and balance of	How to use a range of	chopping, slicing, grating,
		source		appropriate utensils.	drink as depicted in	needing shorning	hinking, spreading,
		source		Mossuro accuratoly	The est well plate that	clicing grating mixing	KITEAUING ANU DAKING
		o a cosconal calad/		and follow a reging	to be active and	sheing, graung, mixing,	Moasuro accurately and
		e.g. seasonal salau/		and follow a recipe.	healthy food and	baking e.g. curry broad	calculate ratios of
		Sanuwich/ If ult Sticks		e.g. savoury munnis,	drink are needed to	making e.g. curry, predu	ingredients to scale up or
				spagnetti bolognalse	nrovide energy for the	maxing	down from recipe
					hody		multi-course meals/tanas/
					bouy		merze
							IIICEEC

	Across KS2 pupils should know: about inventors, designers, engineers, chefs and manufacturers who have
	developed ground-breaking products