**Firs Primary School** 

# **Design and Technology Policy**

Reviewed February 2020

# The Purpose of the Design and Technology Policy

This policy outlines the teaching and learning of design and technology. All children will have the opportunity to undertake design and technology throughout their time at Firs Primary School. The teaching of design and technology is planned to ensure a progression of knowledge and skills across the foundation and primary phases.

# Aims (Intent)

At Firs Primary School we ensure thorough coverage of the National Curriculum objectives for design and technology, providing opportunities for children to develop their knowledge and skills in the areas of design, making, evaluating, technical knowledge and cooking and nutrition. Our aims are that:

- Through a variety of creative and practical activities, pupils are taught the knowledge, understanding and skills needed to engage in an iiterative process of designing and making. They work in a range of relevant contexts. Children develop skills in designing, evaluating, making and technical knowledge.
- Children will also learn a crucial life skill through learning about nutrition and food. Pupils will be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity.

In addition, we aim to provide further opportunities for personal, spiritual, moral, social and cultural development through the teaching of design and technology by:

- Ensuring that children develop a greater awareness of current environmental issues through the study of the impact of modern methods of food production on the environment
- A specific emphasis on the development of vocabulary and oracy relevant to design and technology and in wider contexts, through the incorporation of discussion and vocabulary-based tasks in D&T lessons.
- Building cultural capital for our pupils by developing cross curricular links with other subjects, for instance Art and Design and History, exposing them to the best that has been said and done in the field of design and technology e.g. the opportunity to study the work of great architects and engineers including Isambard Kingdom Brunel and Cornelius Drebbel.
- Providing extra-curricular opportunities to enable children to further build upon their interests and talents in the area of design and technology e.g. children have the opportunity to take part in a STEAM club 'Destination Imagination' in which children have the opportunity to work scientifically, building on the skills learned in DT, outside of the classroom, working with other children and in different settings.

# Implementation

Progression Guidance from the school's academy (DDAT) has been used in conjunction with the school's own EYFS progression guidance document to ensure that skills and knowledge in design and technology are built systematically on what children have learned in the previous key stage. Learning is revisited throughout each phase ensuring a secure foundation of skills and knowledge is in place, to prepare children for the transition to Key Stage 3.

A design and technology knowledge and skills map has been created (see appendix), which identifies the key learning and vocabulary to be taught within each topic across the school. This enables teachers to identify prior learning required for each topic and supports their planning for children working below or towards age related expectations. For each topic, staff are provided with a topic book outlining the key skills, knowledge and vocabulary – this supports teachers to recognise and build upon cross curricular links.

Design and Technology is taught for at least six half terms in every two-year topic cycle. It is taught this way in order to ensure that children benefit from meaningful cross-curricular links, which provide a context and purpose for their learning. Within the designated half termly topics, design and technology is taught as frequently as is necessary to deliver the objectives of the National Curriculum in each phase.

Lessons are adapted to meet the needs of pupils with special educational needs and/or disabilities (SEND) or those with English as an additional language (EAL) through a variety of methods, for example the use of visual communication software (Communication in Print), word banks, differentiated equipment and materials, pre-teaching, additional adult support or focused small group work.

Children who require interventions to support their learning in other areas of the curriculum will have these at different times each week to ensure that they never frequently miss the same subject lesson. They are never withdrawn from class during teaching inputs.

#### Assessment and Recording of Work

Teachers use formative assessment throughout lessons (e.g. observations and assessment) and adapt teaching accordingly to address any misconceptions that may arise. Also, at the end of the topic, teachers complete a summative assessment based on whether children have demonstrated through their work that they have met the national curriculum objectives and progression guidance for their phase. This helps the subject leader to monitor progress and attainment in design and technology across the school.

Children in the Early Years Foundation Stage (Reception and Nursery) are assessed using the Early Years Development Matters guidance and at the end of the reception years against the Early Learning Goals. EYFS objectives within the areas of communication and language development, physical development, personal, social, and emotional development, mathematics, understanding the world and expressive arts and design all contribute to laying the foundations for effective learning in design and technology throughout the primary phase.

A variety of methods are used to record work in design and technology, including pictures, structured worksheets, sketches, diagrams, flow charts, model making, written explanations, photographs, school displays and the occasional video recording. Work may be recorded in individual topic books, or in whole class topic books. Design and technology is a largely practical subject and there is no expectation that work is recorded for every lesson. Evidence shows that instant verbal feedback is the most effective form of feedback and this is prioritised in design and technology lessons, although work carried out in books should be marked in acknowledgement.

#### Resources

Some resources for the teaching of design and technology are held in a central store, these include equipment used for teaching food technology, mechanical and electrical products and computer programming.

Phase teams also have their own annual budget which allows them to purchase any additional materials and equipment they may need to deliver the national curriculum objectives.

# Safety in Design and Technology

The safety of the children is the responsibility of the class teacher. The children are made aware of the safe use and correct procedure involved when using tools and equipment in a learning environment and how to follow proper procedures for food safety and hygiene. The children are made aware of the need to be careful and to understand that their actions can affect others. The children build up a range of skills when using equipment to reduce unnecessary risk.

- Rotary cutters are to be used with a safety ruler
- Craft knives are used only by 5/6 under direct supervision of an adult
- Glue guns are used (low temperature) under supervision.

All staff, including helpers, are made aware of food safety procedures when working with food to minimise any risks. The children wear protective clothing if necessary.

# **Monitoring and Review**

The monitoring of the standards of children's work and of the quality of teaching in design and technology is the responsibility of the design and technology subject leader. The work of the subject leader also involves supporting colleagues in the teaching of design and technology, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The design and technology subject writes an annual report in which she/he evaluates the strengths and weaknesses in the subject and indicates areas for further improvement. The design and technology subject leader has specially-allocated, regular management time in order to review evidence of the children's work and undertake lesson observations of design and technology teaching across the school.

The application of this DT policy will be monitored by the curriculum leaders and reviewed and agreed by Governors Spring 2021.

	EYFS	Year 1/2	Year 3/4	Year 5/6
	Physical Development (40-50 months)	Pupils should be taught to:	Pupils should be taught to:	
	Uses simple tools to effect changes in	α.	<ul> <li>use research and develop design criteria to inform the </li> </ul>	use research and develop design criteria to inform the design of innovative, functional, appealing products that are
	materials Handles tools, objects, construction and	for themselves and other users based on design oriteria	fit for purpose, aimed at particular individuals or groups	5
	malleable materials with safety and increasion control	<ul> <li>osnerate develop, model and communicate their</li> </ul>	generate, develop, model and communicate their ideas	generate, develop, model and communicate their ideas through discussion, annotated statches, cross-sectional and and and discussions and some constructions and construction discussion.
s	Eats a healthy range of foodstuffs and	ideas through talking, drawing, templates,	exprouse augrams, provergpes, pacern preces and computerranced assign	u Steam a second - second
юŢ	understands the need for variety in food	mock-ups and, where appropriate, information	<ul> <li>select from and use a wider range of tools and equipment to perform practical tasks [e.g. outting, shaping.</li> </ul>	ent to perform practical tasks [e.g. outting, shaping,
lat	Shows some understanding that good prontines with record to everice poting	and communication technology		
N I	sleeping and hygiene can contribute to good		<ul> <li>select from and use a wider range of materials and components, including incordinate according to their functional according and acchaels and little</li> </ul>	select from and use a wider range of materials and components, including construction materials, textiles and incoding a proceding to their functional properties and posthetic nuclities
шə	health Shows understanding of how to transmet		in seried out measurement and on Sumanner Providence Sur	
u	anove analysication of now to proceed and store equipment safely	and finishing]	e investigate and analized a range of existing products	
doja	(FLG) Children handle tools and souioment	<ul> <li>select from and use a wide range of materials</li> </ul>	<ul> <li>evaluate their ideas and products against their own de</li> </ul>	evaluate their ideas and products against their own design criteria and consider the views of others to improve their
əna	effectively	and components, including construction	WORK	
ן מי	Children know the importance for good health of physical exercise and a healthy diet	materials, textiles and ingredients, according to their characteristics	- understand how key events and individuals in design and technology have helped shape the world	ud technology have helped shape the world
งนช	and talk about ways to keep healthy and safe	<ul> <li>explore and evaluate a range of existing products</li> </ul>	<ul> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> </ul>	, and reinforce more complex structures
น		<ul> <li>evaluate their ideas and products against design.</li> </ul>	<ul> <li>understand and use mechanical systems in their produ</li> </ul>	understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
njr	(40-60 months)	oritaria	<ul> <li>understand and use electrical systems in their products</li> </ul>	understand and use electrical systems in their products [e.g. series circuits incorporating switches, bulbs, buzzers
ıcı	Completes a simple program on a computer	<ul> <li>build structures. exploring how they can be made</li> </ul>	and motors]	
un	Uses LCT software to interact with age- appropriate computer software	stronger, stiffer and more stable		
Ŋ	(EIG)	<ul> <li>evolure and use machanisms [a a latera alidare</li> </ul>	<ul> <li>apply their understanding of computing to program, monttor and control their products</li> </ul>	ionitor and control their products
SH	Children <b>coogaise</b> that a range of technoloou is used in places such as homes		<ul> <li>understand and apply the principles of a healthy and varied dist</li> </ul>	
λÐ,	and schools. They select and use technology	<ul> <li>use the basic principles of a healthy and varied dist</li> </ul>	<ul> <li>prepare and cook a variety of predominantly sayout dishes using a range of cooking techniques</li> </ul>	dishes using a range of cooking techniques
/ա	for particular purposes	to prepare dishes	<ul> <li>understand seasonality, and know where and how a vertice</li> </ul>	understand seasonality, and know where and how a variety of ingredients are grown, regred, couplit and processed
njr	Expressive Arts and Design	<ul> <li>understand where food comes from</li> </ul>		
ici	(40-60 months) Understands that different materials can be			
IJT	combined to create new effects			
ŋ	Manipulates materials to achieve a planned			
ימן	effect Constructs with a purpose in mind, using a			
uo	variety of resources			
ati	Uses simple tools and techniques competently and processively.			
N	Selects appropriate resources and adapts			
	work where necessary Selects tools and techniques needed to share			
	assemble and join materials they are joining			
	Safely use and explore a variety of materials.			
	tools and techniques, experimenting with caloue, design, texture, form and function			

# Appendix: Design and Technology Knowledge and Skills Map

Enchanted Wood and	T am Morrier (deuble DT unit)	
Children will make a moving picture linked to an aspect of their		Frozen Kingdom
topio or key text, which incorporates either a lever or slider.		Children will work in groups to build large scale
	criteria. They will also follow a simple Roman recipe to make	shelters (using the outdoor environment if possible)
<ul> <li>explore and use mechanisms [levers and/or</li> </ul>	bread, soup or porridge	generate, develop, model and communicate their
alidaan] in thair acaducta		
summer all us cristic produces		totest chrough assousted,
<ul> <li>select from and use a range of tools and equipment to</li> </ul>	investigates and apprentice a range of external products	<ul> <li>select from and use a wider range of tools and</li> </ul>
norform provided for cutting chaning initial		acciment to nerform provided face a cutting
Former in the second second from the second s	through discussion, annotated sketches, cross-sectional	Approximate the band of the province makes [w.3. committee]
and finishing)	and exploded dicerams, prototupes, pattern pieces and	shaping, joining and finishing), accurately
		<ul> <li>calant from and use a wider mone of materials and</li> </ul>
Moon Zoom		
	<ul> <li>select from and use a wider range of tools and equipment</li> </ul>	components, including construction materials,
COMPLET WITH MEAN 19 MARK & MOVING VENDOR (1900) POLICING	to perform practical tasks [e.g. cutting, shaping, joining	textiles and ingredients, according to their
wheels and axels.	and finishinal, accurately	
	multinets their ideas and modulets mainet their sum	Junctional properties and destinatio quantities
<ul> <li>explore and use mechanisms [wheels and avles].</li> </ul>		<ul> <li>apply their understanding of how to strengthen, stiffen</li> </ul>
	design criteria and consider the views of others to	and mindowed mean secondary structures
in their products	improve their work	and the result of the state of the second seco
and the first and the second second and second the	<ul> <li>areante and and a unitativ of aredominantly environ</li> </ul>	
server hour more reason to advant many more than the server		Bloodhant
perform practical tasks [e.g. cutting, shaping, joining	answes asking a nange of cooking techniques	Children will investigate and analyses a second of avistical
and finishing		former to a former or an and the state of th
		food and drinks packaging, considering materials,
<ul> <li>generate, develop, model and communicate their</li> </ul>	3	sustainabilitu. attractiveness and information provided on
ideas through talbing. drawing, templates.	Maylist	the label. Then will develop decive oritaria and then decive
	Making instruments: research, develop, design, make and	the second much many the second many in the second s
mock-ups and, where appropriate, information		their own packaging for an imaginary food product, using
and communication technology		computer aided design techniques. They will evaluate their
	<ul> <li>use research and develop design criteria to injorm.</li> </ul>	final decian anninet the decian criteria ciuen
<ul> <li>select from and use a wide range of materials</li> </ul>	the design of innovative. Functional, appealing	
and components, including construction.		- The research and develop design criteria to injoin the
	products that are fit for purpose, aimed at particular	desian of innovative. Functional, aposaling products
materials, textiles and ingredients, according to	individuals or aroups	
their characteristics		that are fit for purpose, aimed at particular
	<ul> <li>generate, develop, model and communicate their</li> </ul>	individuals or aroups
	ideas through discussion, annotated sketches, prose-	
Muck, Mass and Michines		generate, aevelop, model and communicate their
Children will evolves finds from around the world identifiing	sectional and exploded diagrams, prototypes, pattern.	idens through discussion anostated chotches arres-
	niares and committer-nided design	
their countries of origin. They will learn how to sort the pools		sectional and exploded diagrams, prototypes, pattern
into food types, and identify which foods are	<ul> <li>select from and use a wider range of tools and</li> </ul>	nieres and computer-nided design
healthy/unhealthy. They will learn to prepare a number of	equipment to perform practical tasks [e.g. cutting.	
eimula haulthu dichae from different cultures		investigate and anotuse a range of existing products
	shaping, joining and finishing), accurately	<ul> <li>evaluate their ideas and products apainst their own</li> </ul>
<ul> <li>use the passo principles of a nearthy and varied dist</li> </ul>	<ul> <li>select from and use a wider range of materials and</li> </ul>	
to prepare dishes		design criteria and consider the views of others to
	components, including construction materials,	immove their unch
unaerstanta vintere jood comes jrom.	textiles and ingredients, according to their	
<ul> <li>select from and use a wide range of ingredients,</li> </ul>		
according to their characteristics	Intercontract productions many mean advanta dimension	Darwin's Delights
	<ul> <li>investigate and grauge a range of solating products</li> </ul>	Children will desion. build and evaluate mechanical animal
	<ul> <li>evaluate their ideas and products against their own</li> </ul>	module hand on the Muffield DT sector.
Street Detective	danian aritaria and associdar tha sistem of athens to	
Children will explore existing road and street signs, identifying	consider or taken to consistent take viewes of outside out	Justice of a substance in the manufacture of the substantian
their purpose and evaluating their effectiveness. They will then	improve their work	products [for example, gears, pulleys, cams, levers and
_		
the local environment (incornorating the use of ICT).		
state and a second and a more than a second se	Trenser	generate, develop, model and communicate their
	ביום בייון וויי ייועדיי ביוטין ניין ניי בייינ וויי ביוועדיי	ideas through discussion, annotated sketches, aross-
ideas through talking, drawing, templates,	University with design and putte string a model volcano that	and and and added of increase and the second
mock-ups and, where appropriate, information,	lights up, or a building that vibrates/shakes as if in an	manual sections of sum fundaments for managements
	earthquake.	pieces and computer-aided design
and communication technology	<ul> <li>nemete develor model and communicate their</li> </ul>	
<ul> <li>explore and evaluate a range of existing products</li> </ul>		<ul> <li>select from and use a wider range of tools and</li> </ul>
	ideas through discussion, annotated sketches, cross-	
<ul> <li>evaluate their ideas and products against design</li> </ul>	sectional and exploded diagrams, prototypes,	equipment to perjoint practical tasks [e.g. outcoug,
oritaria	pattern pieces and computer-aided design.	shaping, joining and finishing), accurately
	and the second second second second and the second s	<ul> <li>select from and use a wider range of materials and</li> </ul>
	The second in a second in the second in second second second second	components including construction materials
	components, including construction materials,	
		textules and ingredients, according to their

Key Learning By Topic

Land Ahoy	textiles and ingredients, according to their	functional properties and aesthetic qualities
Children will investigate a range of materials, exploring their	ومنافاتهم وتطمطتهم مسط ممطالمه المقالم	<ul> <li>and u their underetanding of how to strengthen stiffen</li> </ul>
ahaanataanintisa Thau udill aalaat tha maat autumha mataaiala	Intercount busices may make a different formation	
or our second relation. This is were assumed the first second of fraction rates	<ul> <li>understand and use electrical systems in their products</li> </ul>	and reinjorce more complex structures
with whiteh to make a model boat; designing, building, testing	and the second structure in the second se	<ul> <li>evaluate their ideas and products against their own</li> </ul>
and evaluating their boat.	leig. series airauts incorporating switches, putos,	
and a main and a model and a maintenance	buzzers and motors]	design criteria and consider the views of others to
		improve their work
ideas through talking, drawing, templates,	1	
mode-uns and where anomainte, information	Burps, Bottoms, Bile	
	Children will learn about healthu and unhealthu food aroups.	OF With Har Hand
and communication technology	They will leave about when different ments fruits and	Children will menore and cook a Tudar etem using serenal
<ul> <li>calact from and use a rooms of tools and antiomant to</li> </ul>		
	vegetables come from, examining the difference between	vegetables
perform practical tasks [e.g. cutting, shaping, joining	intensively reared meats and sustainable, organic and/or free-	
and finishing]	runna forming methods. They will learn that freeh food is	<ul> <li>understand and apply the principles of a healthy and</li> </ul>
<ul> <li>select from and use a wide range of materials</li> </ul>	neattruer trian processes joods and will examine the sugar	
and components including construction	content of a range of popular drinks and snacks. They will	<ul> <li>prepare and cook a variety of predominantly sayoury.</li> </ul>
	locar hour to make hoolthu seache with an added succe	dichan wine a man of realized technican
materials, textiles and ingredients, according to	NUT I TRUE TO THAKE TRACETING STRUCKS, WORK TO COURSE SUGAR.	
		<ul> <li>understand seasonality, and know where and how a</li> </ul>
AT 1961 AT ATT AT AT A 1971	<ul> <li>prepare and cook a variety of predominantly sayoury</li> </ul>	varietu of inoredients are arown. reared, cought and
	<ul> <li>understand seasonality, and know where and how a</li> </ul>	<ul> <li>select from and use a wider range of materials and</li> </ul>
Crudren will learn where bread fits within the healthy food.	varietu of incredients are arown. reared. counht and	components includion construction materials
wheel. They will learn about different types of brend and		
which are most/least healthu. They will learn to make bread		textules and ingredients, according to their
		functional properties and asothetic aualities
Advantante in Fourieri	components, including construction materials, textiles	
<ul> <li>use the basic principles of a healthy and varied dist</li> </ul>	and incredients, according to their functional properties	
the meaning distance		Pharaohs
the short a strategy of the st	and aesthetic qualities	
<ul> <li>understand where food comes from</li> </ul>	<ul> <li>understand and apply the principles of a healthy and</li> </ul>	Underscand and use electrical systems in products made:
	unriad dist	design and make a board game including lights, switches,
		butters or motore.
Superheroes		and and and us abovial success in their seadures
Children will learn about the healthu food wheel/ouramid.	Mighty Mathe	and the second statement of the second statement of the second statement of
	Children will learn how to build and program a simple robot	fe.a. series airquits incorporating switches. bulbs.
They will learn where mean comes from, matching mean		
products to the animals they come from. They will learn how	using a robotics kit.	buzzers and motors]
to make healthu enacles using freeh unnonesed ingradiente	<ul> <li>select from and use a wider range of materials and</li> </ul>	
		anwaredges and approxime a range of evening products
<ul> <li>use the basic principles of a healthy and varied dist</li> </ul>	components, including construction materials,	<ul> <li>use research and develop design criteria to inform the</li> </ul>
to prepare dishes	textiles and ingredients, according to their	dorine of immunities. Functional monocline modulets
		annous formada incoment account of the
<ul> <li>understand where food comes from</li> </ul>	functional properties and aesthetic qualities	that are fit for purpose, aimed at particular
<ul> <li>select from and use a wide range of inpredients.</li> </ul>	<ul> <li>applu their understanding of computing to</li> </ul>	individuals as assume
according to their characteristics	program, monitor and control their products	<ul> <li>generate, develop, model and communicate their</li> </ul>
	-	nakas unrough atsoussion, annotated secontes, prose-
		sectional and exploded diagrams, prototypes, pattern
Children will explore a range of commercially available bug	Children will learn about Cornelius Drabbel and the invention.	aireas and computer-airlad devices
hotels and use these to establish design criteria for their own	of the Suhmarine Techine at the channes and immunitients to	
hua hotal. Then will collect a range of notural and recucied	Parklal's initial during any time kin skins in marken hand	
		<ul> <li>select from and use a wider range of tools and</li> </ul>
moderious and use these to make their own	and the impact that his invention has had on the world in	equipment to perform practical tasks [e.a. cutting.
<ul> <li>explore and evaluate a range of existing products</li> </ul>	different contexts e.g. the use of submarines in war, science and	
<ul> <li>autimite their ideas and nonlinet ancient decima</li> </ul>	an concernation	shaping, joining and finishing], accurately
warmone mean at a build be and the second statement of the second se		colori from and use a wider more of motorials and
criteria	- understand how key events and individuals in design	
والمستعمل يتماس والمسام ومستعم مستر المستعمل وسرامه	and technologu have helped shape the world	components, including construction materials,
9		testiles and incredients according to their
perform practical tasks (e.a. cuttina, shapina, joinina		the second design of the second of the second se
		functional properties and aesthetic qualities
(guinaing and		متنبع فتملق فمشمه مفيناهم منعا متمام متمانية فلمته فمناميه
<ul> <li>select from and use a wide range of materials</li> </ul>		when the second many second of the second seco
and community including construction		design criteria and consider the views of others to
		im move their unce
materials, textues and ingredients, according to		
their characteristics		
<ul> <li>huild structures conformed hour than one has made</li> </ul>		
stronger, stiffer and more stable		

Time Travellar (cross-curricular unit with art and design) Children will design a house based on a great architect's design style (e.g. arts and crafts, buttalist, art deoo etc), specifyling materials in the design and examining cost effectivenesa. They will build a model of their design either practically or using computer aided design. They will learn about how architectural styles have developed in response to channes in society owr time	<ul> <li>undartand how key svents and individuals in design and technology how helped share the world</li> <li>generate, develop, model and one normunicate their ideas through discussion. amotheted Akethes, cross-sectional on desploted diagrams, protectoppes, pattern pieces and a equipment to perform practical trade [e.g. cutfing, chaptering], compared, individuals and components, individing construction materials, teaching and ingredients, and equipment to perform practical conditions.</li> <li>alset from and use a wider range of metarials and components, induding construction materials, teaching and ingredients, according to their from the individual and components, induding construction materials.</li> <li>investigates and aceitatic and consider the views of others to improve their work.</li> </ul>
Towers, Turnets and Turnets Children will explore a variety of materials and construction techniques in order to design and build either a tower or bridge to solve a problem e.g. a bridge to reach between two tables for a model car to drive over, or a high tower to keep the treasure safe. build structures, exploring how they can be made stronger, stiffer and more stable - evaluate their ideas and product against design criteria.	<ul> <li>alact from and use a range of tools and aquipment to perform practical tasks [s.g. autting] and fraishing]</li> <li>and fraishing]</li> <li>and component, including construction materials and ingredients, according to their characteristics</li> </ul>

		Design		
	<ul> <li>State the purpose of the design and the intended user</li> <li>Explore materiale, make templates and mack ups e.g. moving picture / lighthouse</li> <li>Generate own ideas for design by drawing on own experiences or from reading</li> </ul>		Gather information about the needs and wants of particular individuals and groups Develop their own design criteria and use these to inform their ideas Research designs Share and clarify ideas through discussion Model their ideas using prototypes and pattern pieces Use annotated sketches, cross-sectional drawings and diagrams Use computer-aided design	<ul> <li>Carry out research, using surveys, interviews, questionnaires and web-based resources</li> <li>Identify the needs, wants, preferences and values of particular individuals and groups</li> <li>Develop a simple design specification to guide their thinking</li> <li>Recognise when their products have to fulfil conflicting requirements</li> <li>Generate innovative ideas, drawing on research Make design decisions, taking account of constraints such as time, resources and cost</li> <li>Develop prototypes</li> </ul>
Progression in Skills	<ul> <li>Select from a range of tools and equipment explaining their choices</li> <li>Select from a range of materials and components according to their characteristics</li> <li>Follow procedures for adjety</li> <li>Has and make own templates</li> <li>Measure, mark out, cut out and shops materials and components</li> <li>Assemble, join and combine materials and components</li> <li>Las simple foing materials e.g. temporary - paper dise, tage and permanent - glue, staples</li> <li>Use finishing techniques, including those from art and design</li> </ul>		<ul> <li>Motods</li> <li>Select tools and equipment suitable for the task</li> <li>Select materials and components suitable for the task</li> <li>Explain their choice of model and equipment in relation to the skills and techniques they will be using Select materials and components according to functional properties and aesthetia qu</li> <li>Order the main stages of materials and components according to functional properties and aesthetia qu</li> <li>Order the main stages of materials and components according to functional properties and aesthetia qu</li> <li>Order the main stages of materials and components according to functional properties and aesthetia qu</li> <li>Produce detailed lists of tools, equipment and materials that they need</li> <li>Fellow procedures for safety</li> <li>Us a wider range of materials and components</li> <li>Measure, mark out, cut and detrical components</li> <li>Accurately areaser to nearest mm</li> <li>Accurately areaser to nearest mm</li> <li>Accurately areaser to rearest mm</li> </ul>	Solution         Account of the task           Select tools and equipment suitable for the task         Explain their choice of tools and equipment in relation to the skills and techniques they will be using Select materials and components autochle for the task           Explain their choice of fools and equipment in relation to the skills and techniques they will be using Select materials and components according to functional properties and aesthetic qualities           Explain their choice of materials and components according to functional properties and aesthetic qualities           Order the main stages of materials and components according to functional properties and aesthetic qualities           Follow procedures for safety           Follow procedures for safety           Follow procedures for age of materials and components           Follow procedures for age of materials and components           Measure, mark out, cut and destrical components           Measure, mark out, cut and design, with           Measure, include those from art and design, with some accuracy apply a range of finishing techniques, include those from art and design, with accuracy           Assemble, join and combine materials and components           Assemble, join and combine materials and components           Assemble, join and combine materials and accuracity assemble, join and combine materials and components           Assemble, join and combine materials and assemble, join and combine materials and components           Astourately apply a range of finishing techniques, include
	<ul> <li>Talk about their design ideas and what they are making</li> <li>Make simple judgements about their products and ideas against design criteria</li> <li>Suggest how their products acued be improved Evoluating products and components used</li> <li>Investigate - what products are, who they are for, how they are made and what materials are used</li> </ul>	с	<b>Illutite</b> <b>Intertify</b> the strengths and weatknesses of their ideas and products Consider the views of others, including intended users, to improve their work. Refer back to their design criteria to evaluate their completed products and make Use their design criteria to evaluate their completed products Investigate - how well products have been used, how well products work, how well products the well products the well products work, how well products the view of their work and use research of designers to influence work what methods of construction how been used, how well products work, how well products the views of one their work and use research of designers to influence work factify the strengths and weathnesses of their ideas and consider the views of others, including intended users, they design and made the products. Investigate - who designed and made, when innovations products were designed and made, when products were designed and made whether products oan be regolad or reused products oan be regolad or reused	Allurate         Allurate           Identify the strengths and weaknesses of their ideas and products         Indentify the strengths and weaknesses of their ideas and products           Identify the strengths and weaknesses of their ideas and products         Intervent           Refer back to thin design criteria to evaluate their completed products         Intervent           Use their design criteria to evaluate their completed products         Intervent           Investigate - how well products have been designed, how well products work, how well products and their work and use research of designers to influence work         Intervent           what methods of construction have been used, how well products work, how well products and their works and works and works and intervents         Intervent           what methods of construction have been used, how well products work, how well products and their work and use research of designers to influence work         Intervent           Identify great designers and their works         Intervent         Intervent           Identify the strengths and wathresses of their ideas and they design and make         Intervent         Intervent           Consider the views of others, including intended users, intervent         Intervent         Interviews of their products are and products are and products are products.           Consider the views of others, including intended users, intervent         Intervention the intervence are inducted as products are and how waterinter           Investigate - who designe

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	lechnical Knowledge	
<ul> <li>Understand about the simple working characteristics of</li> </ul>	<ul> <li>Understand how to use learning from science and 000005 to help design and make products that work</li> </ul>	help design and make products that work
matarials and componants	<ul> <li>Know that materials have both functional properties and aesthetic qualities</li> </ul>	isthetio qualities
Understand about the movement of simple	<ul> <li>Know that materials can be combined and mixed to create more useful characteristics</li> </ul>	more useful characteristics
mechanisms including levers, sliders (Yeur 1) wheels	<ul> <li>Know that mechanical and electrical systems have an input, process and output</li> </ul>	t, process and output
and axles (Year 2)	<ul> <li>Use the correct technical vocabulary for the projects they are undertaking</li> </ul>	e undertaking
<ul> <li>Understand that food ingredients should be combined</li> </ul>	<ul> <li>Understand how levers and linkages or pneumatic</li> </ul>	<ul> <li>Understand how came, pulleys and gears create</li> </ul>
according to their sensory characteristics	systems create movement	movement
Know the correct technical vecolularu for the	<ul> <li>Understand how simple electrical circuits and</li> </ul>	<ul> <li>Understand how more complex electrical circuits and</li> </ul>
projects they are undertaking	components can be used to create functional products	components can be used to create functional products
al nos contributed an international sector of the sector o	<ul> <li>Understand how to program a computer to control their</li> </ul>	<ul> <li>Understand how to program a computer to monitor</li> </ul>
	products	changes in the environment / control their products
ווזמרא איניטווקאי, אינוער דומיא גימטא	<ul> <li>Know how to make strong, stiff shell structures</li> </ul>	<ul> <li>Know how to reinforce/strengthen a 3D framework</li> </ul>
	<ul> <li>Know that a single fabric shape can be used to make a</li> </ul>	<ul> <li>Know that a 3D textiles product can be made from a</li> </ul>
	3D textiles product	combination of fabric shapes
	<ul> <li>Know that food ingredients can be fresh, pre-cooked and</li> </ul>	<ul> <li>Know that a recipe can be adapted a by adding or</li> </ul>
	processed	substituting one or more ingredients
	Cooking and Nutrition	
Know where four comes from	<ul> <li>Know that food is grown (such as tomatoes, wheat and pot</li> </ul>	Know that food is grown (such as tomatoss, wheat and potatoss), reared (such as pigs, chickers and cattle) and caught
Use approximate sourcement to weight and massure	(such as fish) in the UK, Europe and the wider world	
ingradients	<ul> <li>Know that seasons may affect the food available</li> </ul>	
Prepare simple dishes safely and hugienically. without	<ul> <li>Understand how food is processed into ingredients that can be eaten or used in cooking</li> </ul>	be eaten or used in cooking
using a hadt source	<ul> <li>How to prepare and cook a variety of predominantly \$30,000</li> </ul>	How to prepare and cook a variety of predominantly <b>50400000</b> dishes safely and hygienically including. where appropriate,
Ilea tachniouse such as cutting	the use of a heat source	
<ul> <li>Name and cost foods into the five around of the 'out</li> </ul>	<ul> <li>How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</li> </ul>	, slicing, grating, mixing, spreading, kneading and baking
see and to advant to and there are a second to the second s	<ul> <li>Know that a healthy dist is made up from a variety and</li> </ul>	<ul> <li>Know that recipes can be adapted to change the</li> </ul>
anna poura a marairean airean aire	balance of different foods and drinks, as depicted in the	appearance, taste, texture and aroma
A MANUAL ALL ALL ALL ALL ALL ALL ALL ALL ALL	'eat well' plate	<ul> <li>Know that different foods contain different substances -</li> </ul>
for fuses more than the	<ul> <li>Know that to be active and healthy, food is needed to</li> </ul>	nutrients, water and figes - that are needed for health
	provide energy for the body	<ul> <li>Understand the need for correct storage</li> </ul>
	<ul> <li>Measure using grame</li> </ul>	<ul> <li>Measure accurately</li> </ul>
	<ul> <li>Follow a recipe</li> </ul>	<ul> <li>Work out ratios in recipes</li> </ul>

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