

# Design Technology

			EYFS			
Knowledge, Skills and Understanding breakdown for STEM Technology						
When	designing and making Design	pupils should be taught to. Make	 Evaluate	Technical knowledge	Cooking & Nutrition	
op and - To th	ork together to devel- realise creative ideas. ink about and discuss ney want to make.	- To construct using a range of materials. - To fold materials such as paper and card in different ways.	<ul> <li>Discuss problems and how they might be solved as they arise.</li> <li>To reflect on how they achieved their aims.</li> <li>To explain the process they have used.</li> </ul>	<ul> <li>To use different techniques for joining materials e.g. how to use tape and different types of glue.</li> <li>To use a range of materials and tools with care and precision.</li> <li>To promote independence.</li> </ul>	<ul> <li>To start to have an understanding of where ingredient comes from.</li> <li>To begin to have an awareness of healthy food choices and start to understand the concept of a balanced diet.</li> <li>To be able to prepare simple dishes with help such as a fruit salad or sandwich.</li> </ul>	
	Daring	Malua	Challenge	Tacharian buran da dar	Cashing 9 Natritian	
EYFS	<u>Design</u> To explain their choice of materials for a given project.	<u>Make</u> To select appropriate ma- terials and use with in- creased independence.	<u>Evaluate</u> To develop their knowledge of technical vocabulary and start to use it when evaluating their products.	<u>Technical knowledge</u> To use and select appro- priate tools and materi- als and use with in- creased confidence.	Cooking & Nutrition To give examples of where specific food comes from and ex- plain why a healthy and balanced diet is important.	



Design Technology

Term 1	Term 4
Term 2	Term 5
Term 3	Term 6

Skills developed throughout

the year

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### Knowledge, Skills and Understanding breakdown for STEM Technology

When designing and making pupils should be taught to...

	Design	Make	Evaluate	Technical knowledge	Cooking & Nutrition
Across	<u>KS1</u>	Across KS1	Across KS1	Across KS1	Across KS1
Design ( appealin and oth criteria. - Learn a explain design p Genera commu talking, where a	purposeful, functional, ng products for themselves er users based on a design appropriate vocabulary to their understanding of the	Across KS1 - Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Across KS1 - Select from and use a wide range of materials and compo- nents, including construction materials, textiles and ingredi- ents, according to their charac- teristics Across KS1 - To be able to make a rough estimate when creating to specification. Across KS1 - To know how to follow written instructions with in- creased independence.	Across KS1 - Explore and evaluate a range of existing products. - Evaluate their ideas and products against design crite- ria	Across KS1 - Build structures, exploring how they can be made stronger, stiffer and more stable Across KS1 To begin to remember different techniques and use them with increased inde- pendence.	Across KS1 Use the basic principles of a healthy and varied diet. (PSHE Link) - To understand where their ingredients comes. - To learn and demonstrate safe food preparation and hygiene. - To use their knowledge to prepare a simple dish.
			Challenge		
	<u>Design</u>	<u>Make</u>	<u>Evaluate</u>	Technical knowledge	Cooking & Nutrition
	<u>Year 1</u>	<u>Year 1</u>	<u>Year 1</u>	Year 1 and 2	Year 1 and 2
	Record their reasoning for selecting specific materials.	Using tools and materials with increased confidence, accuracy and independence.	To be able to record reasons for their opinions during the evaluation process.	To use appropriate technical language with increasing confidence.	To be able to explain the affect a healthy balanced diet has on our bodies.
Yea	Year 2	Year 2	Year 2		To have secure knowledge
Year 1 and 2	Record their reasoning in annotation for selecting	To be able to adapt their design during the making	To be able to explain using correct vocabulary how they		of a range of cooking tech- niques. E.g. cutting, slicing, mixing etc.
2	specific materials linking it to their knowledge of	process and explain their	would solve issues that arose during the making process.		Year 2
1	properties.	decisions.			To be able to explain with confidence the importance of safe food preparation and kitchen hygiene.



Year 1 and 2

**Design Technology** 

Term 1	Term 4
Term 2	Term 5
Term 3	Term 6

Skills developed throughout the year

food preparation and kitchen hygiene.

### Year 2

Knowledge, Skills and Understanding breakdown for STEM Technology

#### When designing and making pupils should be taught to..

Design	Make	Evaluate	Technical	<b>Cooking &amp; Nutrition</b>
-			knowledge	
Across KS1	Across KS1	Across KS1	Across KS1	Across KS1
<ul> <li>Design purposeful, functional, appealing products for themselves and other users based on a design criteria.</li> </ul>	- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]	- Explore and evaluate a range of existing products.	- Build structures, exploring how they can be made stronger, stiffer and more stable	Use the basic principles of a healthy and varied diet. (PSHE Link)
- Learn appropriate vocabulary to	Upper Key Stage 1 - As above but with increased control and	- Evaluate their ideas and products against design criteria	Upper Key Stage 1	- To understand where their ingredients comes.
explain their understanding of the	independence.			lingretients comes.
design process.		Upper Key Stage 1	- Explore and use mecha- nisms [for example, levers,	- To learn and demonstrate safe
- Generate, develop, model and	Across KS1	- Presenting their findings and evaluation to their peers.	sliders, wheels and axles], in their products.	food preparation and hygiene.
communicate their ideas through talking, drawing, templates, and, where appropriate, information	<ul> <li>Select from and use a wide range of materials and components, including construction materials, textiles and ingre- dients, according to their characteristics</li> </ul>	(Computing link)	Across KS1	- To use their knowledge to prepare a simple dish.
and communication technology. Upper Key Stage <u>1</u>	Upper Key Stage 1		- To begin to remember different techniques and used them with increased independence.	
- As above including write, label and mark on design drawings.	- Selecting appropriate materials for purpose with increased independence.			
	Across KS1			
	- To be able to make a rough estimate when creating to specification.			
	Year Upper Key Stage 1			
	- To be able to use standard tools to check estimates e.g rulers, tape measures.			
	Across KS1			
	- To know how to follow written instruc- tions with increased independence.			
	1	Challongo		

### Challenge

<u>Design</u>	Make	<u>Evaluate</u>	Technical knowledge	Cooking & Nutrition
<u>Year 1</u>	<u>Year 1</u>	<u>Year 1</u>	Year 1 and 2	Year 1 and 2
Record their reasoning for selecting specific materials.	Using tools and materials with increased confidence, accuracy and	To be able to record reasons for their	To use appropriate technical language with increasing confidence.	To be able to explain the affect a healthy balanced diet has on our bodies.
Year 2	independence.	opinions during the evaluation process.		To have secure knowledge of a
Record their reasoning	Year 2	Year 2		range of cooking techniques. E.g. cutting, slicing, mixing etc.
in annotation for se- lecting specific materi-	To be able to adapt their	To be able to explain using correct		
als linking it to their	design during the making	vocabulary how they would solve issues that arose during the making		Year 2
knowledge of proper- ties.	process and explain their	process.		
	decisions.			To be able to explain with confi- dence the importance of safe



## STEM Technology

#### Highlight by topic-Year 3

Autumn - Ancient Egypt– Houses– Textiles

Spring – Around The World– Fruit

Summer – They're Coming—Photo frames—Tech

k	nowledge, Skills and Un	derstanding breakdown f	or <u>STEM Technology</u>	
Design	Make	Evaluate	Technical knowledge	Cooking & Nutrition
Inderstanding Contexts, Users & <u>urposes</u> <u>cross KS2</u> Vork confidently within a range of ontexts, such a the home, school, eisure, culture, enterprise, industry and the wider environment. escribe the purpose of their prod- cts. Indicate the design features of their roducts that will appeal to intended sers. xplain how particular parts of their roducts work. <u>ower KS2</u> lather information about the needs and wants of particular individuals and roups. evelop their own design criteria and se these to inform their ideas. <u>ienerating, Developing, Modelling</u> and <u>Communicating Ideas</u> <u>cross KS2</u> hare & clarify ideas through discus- ion. Addel their ideas using prototypes and pattern pieces. Ise annotated sketches, cross- ectional drawings and exploded iagrams to develop and communicate heir ideas. Se computer-aided design to develop and communicate their ideas. Dower KS2 inenerate realistic ideas, focusing on he needs of the user.	Planning         Across KS2         Select tools and equipment suitable for the task.         Select materials and components suitable for the tasks.         Explain their choice of materials and components according to the functional properties and aesthetic qualities.         Practical Skills &         Techniques         Across KS2         Follow procedures for safety and hygiene.         Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components.         Lower KS2         Measure, mark out, cut and shape materials and components with come accuracy.         Assemble, join and combine materials and components with some accuracy.         Apply a range of finishing techniques, including those from art & design, with some accuracy.	Own Ideas & ProductsAcross KS2Identify the strengths and areasfor development in their ideasand products.Consider the views of others,including intended users, toimprove their work.Lower KS2Refer to their design criteria asthey design and make.Use their design criteria toevaluate their completed products.Existing Products -Investigating & Analysing.Across KS2How well products have beendesigned.How well products have been made.Why materials have been chosen.What methods of constructionhave been used.How well products work.How well products meet userneeds and wants.Lower KS2Who designed and made theproducts.When products were designedand made.When products were designedand made.Whether products can be recy-cled or reused.Key Events & IndividualsAbout inventors, designers,engineers, chefs and manufac-turers who have developedground-braking products.	Making Products Work         Across KS2         How to use learning from         science to help and make         products that work.         How to use learning from         mathematics to help design and         make products that work.         That materials have both functional properties and aesthetic         properties.         That mechanical and electrical         systems have an input, process         and output.         Lower KS2         How mechanical systems such         as levers and linkages or pneumatic systems create movement.         How simple electrical circuits         and components can be used to         create functional products.         How to make strong, stiff shell         structures.	Where Food Comes From Across KS2         That food is grown (such as tomatoes, wheat and pota- toes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.         Food Preparation, Cooking & Nutrition Across KS2         How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a hea source.         How to use a range of tech- niques such as peeling, chop ping, slicing, grating, mixing, spreading, kneading and baking.         Lower KS2         That a healthy diet is made up from a variety and balanc of different food and drink, a depicted in 'The Eatwell Plate'.         That to be active and healthy food and drink are needed to provide energy for the body.
		Challenge		
Design Make design decisions that take account of the availa- bility of resources.	<u>Make</u> Explain their choice of tools & equipment in relation to the skills and techniques they will be using. Order the main stages of making.	Evaluate Key Events & Individuals Know and understand about key events and individuals in design.	Making Products Work Know that materials can be combined and mixed to create more useful characteristics. Use the correct technical vocab- ulary for he projects they are undertaking. Know that a single fabric shape can be used to make a 3D textiles product. Know that food ingredients can be fresh, pre-cooked and pro- cessed.	Where Food Comes From           Know that food originates in           different parts of the world           and provide examples of           these.           Food Preparation, Cooking &           Nutrition           Know that foods can be           categorised in different food           groups and exemplify these.           Practical experience of a           range of cooking techniques.



## STEM Technology

#### Highlight by topic-Year 4

Autumn – Tudors - Textiles – Sewing

Spring - Splash- Tech- Wobblers

Summer – Wonderful Westbury – Food – Scones

	к	nowledge, Skills and Un	Year 4 derstanding breakdown f	or <u>STEM Technology</u>	
	Design	Make	Evaluate	Technical knowledge	Cooking & Nutrition
Purpose: Across K Work coi contexts leisure, co and the v Describe ucts. Indicate products users. Explain h products Lower K Gather ir and wan groups. Develop use these Generati and com Share & sion. Model th and path Use anno sectional diagrams their ide: Use com and com	anding Contexts, Users & 52 52 infidently within a range of such a the home, school, wider environment. the purpose of their prod- the design features of their that will appeal to intended itow particular parts of their work. 52 information about the needs ts of particular individuals and their own design criteria and e to inform their ideas. ing, Developing, Modelling imunicating Ideas 52 clarify ideas through discus- their ideas using prototypes ern pieces. totated sketches, cross- id rawings and exploded is to develop and communicate as. puter-aided design to develop municate their ideas.	Planning Across KS2         Select tools and equipment suitable for the task.         Select materials and compo- nents suitable for the tasks.         Explain their choice of materi- als and components according to the functional properties and aesthetic qualities.         Practical Skills & Techniques Across KS2         Follow procedures for safety and hygiene.         Use a wider range of materi- als and components than KS1, including construction materi- als and kits, textiles, food ingredients, mechanical components and electrical components.         Lower KS2         Measure, mark out, cut and shape materials and compo- nents with come accuracy.         Assemble, join and combine materials and components with some accuracy.         Apply a range of finishing techniques, including those from art & design, with some accuracy.	Own Ideas & ProductsAcross KS2Identify the strengths and areasfor development in their ideasand products.Consider the views of others,including intended users, toimprove their work.Lower KS2Refer to their design criteria asthey design and make.Use their design criteria toevaluate their completed products.Existing Products -Investigating & Analysing.Across KS2How well products have beenmade.Why materials have been chosen.What methods of constructionhave been used.How well products may theirHow well products may theirWhat methods of constructionhave been used.How well products meet userneeds and wants.Lower KS2Who designed and made theproducts.Where products were designedand made.Whether products can be recycled or reused.Key Events & IndividualsAbout inventors, designers,engineers, chefs and manufacturers who have developedground-braking products.	Making Products Work         Across KS2         How to use learning from         science to help and make         products that work.         How to use learning from         mathematics to help design and         make products that work.         That materials have both functional properties and aesthetic         properties.         That mechanical and electrical         systems have an input, process         and output.         Lower KS2         How mechanical systems such         as levers and linkages or pneumatic systems create movement.         How simple electrical circuits         and components can be used to         create functional products.         How to program a computer to         control their products.         How to make strong, stiff shell         structures.	Where Food Comes From Across KS2         That food is grown (such as tomatoes, wheat and pota- toes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.         Food Preparation, Cooking & Nutrition         Across KS2         How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.         How to use a range of tech- niques such as peeling, chop- ping, slicing, grating, mixing, spreading, kneading and baking.         Lower KS2         That a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eatwell Plate'.         That to be active and healthy, food and drink are needed to provide energy for the body.
			Challenge		
Year 4	Design Make design decisions that take account of the availa- bility of resources.	<u>Make</u> Explain their choice of tools & equipment in relation to the skills and techniques they will be using. Order the main stages of making.	<u>Evaluate</u> <u>Key Events &amp; Individuals</u> Know and understand about key events and individuals in design.	Making Products Work Know that materials can be combined and mixed to create more useful characteristics. Use the correct technical vocab- ulary for he projects they are undertaking. Know that a single fabric shape can be used to make a 3D textiles product. Know that food ingredients can be fresh, pre-cooked and pro- cessed.	Where Food Comes From         Know that food originates in         different parts of the world         and provide examples of         these.         Food Preparation, Cooking &         Nutrition         Know that foods can be         categorised in different food         groups and exemplify these.         Practical experience of a         range of cooking techniques.



## STEM-Technology

#### Highlight by topic

Autumn – Eureka! - Thrones

Spring - On the Latin Side—Pizza

Summer – Back to Britain—Cams

Design	Make	Evaluate	Technical knowledge	Cooking & Nutrition
nderstanding Contexts, Users &	Planning	Own Ideas & Products	Making Products Work	Where Food Comes From
And the second s	Across KS2 Select tools and equipment suitable for the task. Select materials and compo- nents suitable for the tasks. Explain their choice of materi- als and components according to the functional properties and aesthetic qualities. Practical Skills & Techniques. Across KS2 Follow procedures for safety and hygiene. Use a wider range of materials and components than KS1, including construction materi- als and kits, textiles, food ingredients, mechanical com- ponents and electrical compo- nents. Upper KS2 Accurately measure, mark out, cut and shape materials and components. Accurately assemble, join and combine materials and com- ponents. Accurately apply a range of finishing techniques, including those from art & design. Demonstrate resourcefulness when tackling practical prob- lems.	Across KS2 Identify the strengths and areas for development in their ideas and products. Consider the views of others, including intended users, to improve their work. Upper KS2 Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make. Existing Products - Investigating & Analysing. Across KS2 How well products have been designed. How well products have been made. Why materials have been cho- sen. What methods of construction have been used. How well products work. How well products meet user needs and wants. Upper KS2 How much products cost to make. How innovative products are. How sustainable the materials in products are. What inmpact products have beyond their intended purpose. Key Events & Individuals About inventors, designers, engineers, chefs and manufac- turers who have developed ground-braking products.	Across KS2 How to use learning from science to help and make products that work. How to use learning from mathe- matics to help design and make products that work. That materials have both func- tional properties and aesthetic properties. That mechanical and electrical systems have an input, process and output. <u>Upper KS2</u> How mechanical systems such as cams or pulleys or gears create movement. How more complex electrical circuits and components can be used to create functional prod- ucts. How to program a computer to monitor changes in the environ- ment and control their products. How to reinforce and strengthen a 3D framework.	Across KS2 That food is grown (such as toma- toes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Upper KS2 That seasons may affect the food available. How food is processed into ingre- dients that can be eaten or used i cooking. Food Preparation, Cooking & Nutrition Across KS2 How to prepare and cook a variet of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, knead- ing and baking. That different food and drink contain different substances - nutrients, water and fibre - that are needed for health.
Design	Maka	Challenge	Making Draduate Wark	Where Food Comes From
Design UCUP Develop a simple design specification to guide their thinking. <u>GDMCI</u> Make design decisions, taking account of constraints such as time, resources & cost.	Make <u>Planning</u> Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Produce appropriate lists of tools, equipment and materials that they need. Formulate step-by-step plans as a guide to making. <u>Practical Skills &amp; Techniques</u> Use techniques that involve a number of steps.	Evaluate Own Ideas and Products Evaluate their ideas and products against their original design specification. Key Events & Individuals Know and understand about key events and individuals in design.	Making Products Work Know that materials can be com- bined and mixed to create more useful characteristics. Use the correct technical vocabu- lary for he projects they are undertaking. Know that a 3D textiles product can be made from a combination of fabric shapes. Know that a recipe can be adapted by adding or substituting one or more ingredient.	Where Food Corres From           Know that food originates in           different parts of the world and           provide examples of these.           Food Preparation, Cooking &           Nutrition           Know that foods can be catego-           rised in different food groups and           exemplify these.           Practical experience of a range of           cooking techniques.



## STEM-Technology

#### Highlight by topic

Autumn - The Blitz—Make do and mend

Spring – Human Planet – Bread rolls

Summer – Bristol?—Electrical cars

Design		Make	Evaluate	Technical knowledge	Cooking & Nutrition
derstanding Context	s, Users &	Planning	Own Ideas & Products	Making Products Work	Where Food Comes From
rposes (UCUP)		Across KS2	Across KS2	Across KS2	Across KS2
ross KS2		Select tools and equipment	Identify the strengths and areas	How to use learning from science	That food is grown (such as toma-
ork confidently withi	-	suitable for the task.	for development in their ideas	to help and make products that	toes, wheat and potatoes), reared
contexts, such a the l	-	Select materials and compo-	and products.	work.	(such as pigs, chickens and cattle)
nool, leisure, culture,		nents suitable for the tasks.	Consider the views of others,	How to use learning from mathe-	and caught (such as fish) in the
se, industry and the v vironment.	wider	Explain their choice of materi- als and components according	including intended users, to improve their work.	matics to help design and make products that work.	UK, Europe and the wider world. Upper KS2
scribe the purpose of	their	to the functional properties	Upper KS2	That materials have both func-	That seasons may affect the food
ducts.	then	and aesthetic qualities.	Critically evaluate the quality of	tional properties and aesthetic	available.
licate the design feat	ures of	and destine the quanties?	the design, manufacture and	properties.	How food is processed into ingre-
ir products that will		Practical Skills & Techniques.	fitness for purpose of their	That mechanical and electrical	dients that can be eaten or used
ended users.		Across KS2	products as they design and	systems have an input, process	cooking.
olain how particular p	oarts of	Follow procedures for safety	make.	and output.	-
ir products work.		and hygiene.		Upper KS2	Food Preparation, Cooking &
per KS2		Use a wider range of materials	Existing Products - Investigating	How mechanical systems such as	Nutrition
rry out research, usin	-	and components than KS1,	& Analysing.	cams or pulleys or gears create	Across KS2
ys, interviews, questi		including construction materi-	Across KS2	movement.	How to prepare and cook a variet
d web-based resourc		als and kits, textiles, food	How well products have been	How more complex electrical	of predominantly savoury dishes
ntify the needs, wan		ingredients, mechanical com- ponents and electrical compo-	designed. How well products have been	circuits and components can be used to create functional prod-	safely and hygienically including,
ences and values of p lividuals and groups.	articular	ponents and electrical compo- nents.	How well products have been made.	used to create functional prod- ucts.	where appropriate, the use of a heat source.
and groups.		Upper KS2	Why materials have been cho-	How to program a computer to	How to use a range of techniques
nerating, Developing	. Model-	Accurately measure, mark out,	sen.	monitor changes in the environ-	such as peeling, chopping, slicing
g and Communicating		cut and shape materials and	What methods of construction	ment and control their products.	grating, mixing, spreading, knead
OMCI).		components.	have been used.	How to reinforce and strengthen	ing and baking.
ross KS2		Accurately assemble, join and	How well products work.	a 3D framework.	That different food and drink
are & clarify ideas th	ough	combine materials and com-	How well products achieve their		contain different substances -
cussion.		ponents.	purposes.		nutrients, water and fibre - that
odel their ideas using	proto-	Accurately apply a range of	How well products meet user		are needed for health.
pes and pattern piece		finishing techniques, including	needs and wants.		
e annotated sketches	-	those from art & design.	Upper KS2		
ctional drawings and		Demonstrate resourcefulness	How much products cost to		
agrams to develop &	communi-	when tackling practical prob-	make.		
te their ideas.		lems.	How innovative products are. How sustainable the materials in		
e computer-aided de velop and communic			products are.		
eas.	ate then		What impact products have		
wer KS2			beyond their intended purpose.		
enerate innovative ide	eas.		Key Events & Individuals		
awing on research.			About inventors, designers,		
			engineers, chefs and manufac-		
			turers who have developed		
			ground-braking products.		
			Challenge		
Design		Make	Evaluate	Making Products Work	Where Food Comes From
UCUP		Planning	Own Ideas and Products	Know that materials can be com-	Know that food originates in
Develop a sim	ple	Explain their choice of tools	Evaluate their ideas and products	bined and mixed to create more	
design specifi	•	and equipment in relation to	against their original design	useful characteristics.	different parts of the world and
guide their th		the skills and techniques they	specification.	Use the correct technical vocabu-	provide examples of these.
<u>GDMCI</u>	8.	will be using.	Key Events & Individuals	lary for he projects they are	Food Preparation, Cooking &
Make design	decisions,	Produce appropriate lists of	Know and understand about key	undertaking.	Nutrition
taking accourt		tools, equipment and materials	events and individuals in design.	Know that a 3D textiles product	Know that foods can be catego-
constraints su		that they need.	-	can be made from a combination	rised in different food groups and
time, resource	es & cost.	Formulate step-by-step plans		of fabric shapes.	
		as a guide to making.		Know that a recipe can be	exemplify these.
time, resource		Practical Skills & Techniques		adapted by adding or substituting	Practical experience of a range of
		Use techniques that involve a		one or more ingredient.	cooking techniques.
		number of steps.			cooking techniques.
					Know that recipes can be adapted
					to change the appearance, taste,
					texture and aroma and make
					these changes.