



Knowledge Organisers for the priority subject for each concept to be issued 2-3 weeks before the learning block is taught. Metacognition: Metacognition can take many forms; it includes knowledge about when and how to use particular strategies for learning or problem-solving.

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. This knowledge and skills organiser for design and technology demonstrates the progression through the year groups. It includes regular opportunities to revisit prior learning and build upon this.

Design and Technolog Y	Term		Term		Term	
EYFS	3-4 years		Reception		Early Learning Goal (ELG)	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge				n their previous learning, veloping their ability to	tools and technique colour, design, text	ore a variety of materials, es, experimenting with ure, form and function. ns, explaining the process





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Skill Progressio n	SSIO Understanding the World • Explore collections of materials with similar and/or different properties. Expressive Arts and Design • Explore different materials freely, in order to develop their ideas about how to use them and what to make. • Join different materials and explore different textures. • Create closed shapes with continuous lines, and begin to use these shapes to represent objects.		Physical Development • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons. Expressive Arts and Design • Create collaboratively sharing ideas, resources and skills		Physical Development Fine Motor Skills • Use a range of small tools, including scissors, paintbrushes and cutlery.	
Meta Cognition						
Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Rebellion and Invasion	Natural elements	Civilisation	Environmental	Discoveries	Culture
Knowledge	Technical knowledge: Structures (linked to the Great Fire of London – Tudor Houses) Revisit learning from EYFS Summer term Talk about the simple working characteristics of materials. Explain how freestanding structures can be made		Technical knowledge: Structures/Mechanisms (linked to Kings, Queens and Castles – Castles and making a working drawbridge) Revisit learning from Year 1 Autumn 1 Explain how freestanding structures can be made stronger, stiffer and more stable.		Technical knowledge: Mechanisms (linked to Trains/Transport through time – wheels and axles) Revisit learning from Year 1 Spring 1 • State what products they are designing and making. • Talk about their design ideas and what they are making.	Make: Cooking and Nutrition (linked to Seaside: a healthy picnic) Revisit learning from EYFS Summer term Say whether the products are for themselves or other users. Explain what products are, who products are for and what products are for.





	Talk about the movement of simple mechanisms: wheels and axles.	 Begin to recognise that all food comes from plants or animals. Begin to recognise that food has to be farmed, grown elsewhere or caught. Know that everyone should eat at least five portions of fruit and vegetables every day. Begin to know how to use techniques such as cutting, peeling and
(linked to Kings, Queens and Castles – Castles and making a working drawbridge) Revisit learning from Year 1 Autumn 1	Technical knowledge: Mechanisms (linked to Trains/Transport through time – wheels and axles) Revisit learning from Year 1 Spring 1 Plan by suggesting what to do next.	peeling and grating Food from around the world Make: Cooking and Nutrition (linked to Seaside: a healthy picnic) Revisit learning from EYFS Summer term Generate ideas by drawing on their own experiences.
	he. he. he. he. he. he. he. he.	he. he. he. he. he. he. he. he.





Meta	 Use materials and components to make a product. Begin to assemble, joining and combine materials and components. 		simple mechanisms: lever and pulley) into their product. Generate ideas by drawing on their own experiences. Plan by suggesting what to do next. Begin to use procedures for safety.		 Follow procedures for safety. Use materials and components to make a product. Assemble, join and combine materials and components. Incorporate the movement of simple mechanisms into their product: wheels and axles. 	 Follow procedures for health and safety. Begin to name and sort food into the five groups in the eat-well plate. Begin to use techniques such as cutting, peeling and grating. Food from around the world
Cognition Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Rebellion and Invasion	Natural elements	Civilisation	Environmental	Discoveries	Culture
concept						
Knowledge		Make: Cooking and Nutrition (linked to Science – Nutrition for humans/Geography – The Galapagos Islands) Revisit learning from Year 1 Summer 2 Know that all food comes from plants or animals.	Make: Textiles (linked to Queen Victoria - crowns) Revisit learning from EYFS Summer term Describe what their products are for. Use knowledge of existing products to help come up with ideas. Know that a 3D textiles product can		Technical knowledge: Mechanisms (linked to the Wright Brothers inventions) Revisit learning from Year 1 Summer 1 Say how their products will work. Explain safety procedures to others.	





	 Know that food has to be farmed, grown elsewhere or caught. Know that everyone should eat at least five portions of fruit and vegetables every day, suggesting different fruits and vegetables. Know how to prepare simple dishes safely and hygienically without using a heat source. Know how to 	be assembled from two identical fabric shapes. Explain who products are for. Suggest what materials products are made from. Crowns from different countries	 Explain how products work. Suggest what materials products are made from and suggest why materials have been chosen. Talk about the movement of simple mechanisms. Know the correct technical vocabulary for the products they are undertaking. 	
	use techniques such as cutting, peeling and grating Food from around the world			
Skill	Make: Cooking and	Make: Textiles (linked to	Technical knowledge:	
Progressio	Nutrition (linked to	Queen Victoria - crowns)	Mechanisms (linked to	
n	Science – Nutrition for	Revisit learning from EYFS	the Wright Brothers	
	humans/Geography –	Summer term	inventions)	
	The Galapagos Islands)	 Working 	Revisit learning from Year	
	Revisit learning from	confidently withing	1 Summer 1	
	Year 1 Summer 2	a range of		
		contexts.		





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 Able to name 	 Use simple design 	 Work confidently
and sort foods	criteria to help	within a range of
into the five	develop their ideas.	contexts.
groups in the	 Use knowledge of 	 Use simple design
eat-well plate.	existing products	criteria to help
 Prepare simple 	to help come up	develop their
dishes safely	with ideas.	ideas.
and hygienically	 Develop and 	 Model ideas by
without using a	communicate ideas	exploring
heat source.	by talking and	materials,
 Use techniques 	drawing.	components and
such as cutting,	 Select from a range 	construction kits
peeling and	tools and	and by making
grating.	equipment,	templates and
 Use a simple 	explaining their	mock-ups.
design criteria	choices.	 Develop and
to help develop	 Follow procedures 	communicate
their ideas.	for safety.	ideas by talking
 Develop and 	 Measure, mark 	and drawing.
communicate	out, cut and shape	 Select from a
ideas by talking	materials.	range of tools
and drawing.	 Assemble, join and 	and equipment,
■ Follow	combine materials.	explaining their
procedures for	 Use finishing 	choices.
safety and	techniques,	 Confidently
hygiene.	including those	follow procedures
 Use materials 	from art and	for safety.
and components	design.	 With increasing
including food	 Make simple 	accuracy,
ingredients.	judgements about	measure, mark
 Make simple 	their products and	out, cut and
judgements	ideas against	shape materials
about their	design criteria.	and components.
products and		 With confidence,
products driv		assemble, join





Meta		ideas against design criteria.	 Explain what they like and dislike about products. 		 and combine materials and components. Suggest how their products could be improved based on the success criteria. Use the correct technical vocabulary for the products they are undertaking. 	
Cognition						
Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Rebellion and Invasion	Natural elements	Civilisation	Environmental	Discoveries	Culture
Knowledge		Technical knowledge: Mechanical systems (linked to Science – forces and magnets) Revisit learning from Year 2 Summer 1 Begin to describe the purpose of their products. Explain how particular parts of their products work. Investigate and analyse: why	Structures (linked to Ancient Egypt) Revisit learning from Year 1 Spring 1 Begin to explain their choice of tools and equipment in relation to the skills and techniques they will be using. Begin to explain their choice of materials and components according to functional			Cooking and Nutrition (linked to Science - plants) Revisit learning from Year 2 Autumn 2 Begin to know of chefs who have developed ground-breaking products. That food ingredients can be fresh, pre- cooked and processed.





materials haveproperties and aesthetic qualities. how wellhow wellOrder the mainproductsstages of making. achieve theirachieve theirInvestigate and purposes, analyse: how wellwhetherproducts can be designed, how wellrecycled orproducts have been reused.reused.made, whyHow to usematerials have learning from make productslearning frombeen chosen, how science to helpwell productsgeigned and achieve theirmake productspurposes, when that work.that work.products wereHow mechanical systems such as inkages create movement.Begin to know of linkages create engineers who products.Begin to know ground-breaking products.How to use engineers to help design and mathematics to help design and matematics to help dusts and work.	 Is aware that a recipe can be adapted by adding or substituting one or more ingredients. That food is grown, reared and caught in the UK, Europe and the wider world. Begin to know how to prepare and cook a savoury dish safely and hygienically including, where appropriate, the use of a heat source. Start to know
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			balance of different food and drinks, as depicted in the eat well plate. That to be active and healthy, food and drink are needed to provide energy for the body.
Skill Progressio n	Technical knowledge:Mechanical systems(linked to Science –forces and magnets)Revisit learning fromYear 2 Summer 1• Work within a range of contexts.• Share and clarify ideas through discussion.• Use annotated sketches to develop and communicate their ideas.• Select tools and equipment suitable for the task.	Structures (linked to Ancient Egypt) Revisit learning from Year 1 Spring 1 • Work within a range of contexts. • Share and clarify ideas through discussion. • Use annotated sketches, cross- sectional drawings and exploded diagrams to develop and communicate their ideas. • Select tools and equipment suitable for the task.	Cooking and Nutrition (linked to Science - plants) Revisit learning from Year 2 Autumn 2 • Work within a range of contexts. • Share and clarify ideas through discussion. • Follow procedures for safety and hygiene. • Use a wider range of materials and components from KS1,









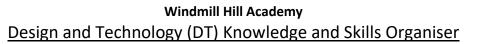
Knowledge	Technical knowledge:	Cooking and Nutrition	Design and technical
	electrical systems (linked	(linked to the Roman	knowledge: computer
	to science – electricity)	Empire)	aided design and
	Revisit learning from Year	Revisit learning from Year 3	programming (linked to
	<mark>3 Autumn 2</mark>	<mark>Summer 2</mark>	Computing)
	 Describe the 	 Investigate and 	<mark>Revisit learning from Year</mark>
	purpose of their	analyse: who	<mark>4 Autumn 1</mark>
	products.	designed and made	 Investigate and
	 Explain how 	the products,	analyse: how well
	particular parts	where products	products have
	of their products	were designed and	been designed,
	work.	made and when	how well
	 Explain their 	products were	products achieve
	choice of tools	designed and	their purposes.
	and equipment	made.	 Confidently talk
	in relation to the	 Know chefs who 	about designers
	skills and	have developed	who have
	techniques they	ground-breaking	developed
	will be using.	products.	ground-breaking
	 Explain their 	 Know that a recipe 	products.
	choice of	can be adapted by	 How to program
	materials and	adding or	a computer to
	components	substituting one or	control their
	according to	more ingredients.	products.
	functional	 Know that food is 	
	properties and	grown, reared and	
	aesthetic	caught in the UK,	
	qualities.	Europe and the	
	 Investigate and 	wider world.	
	analyse: how	Know how to	
	well products	prepare and cook a	
	have been	variety of	
	designed, how	predominantly	
	well products	savoury dishes	



			1
have been	safely and		
made, why	hygienically		
materials have	including, where		
been chosen,	appropriate, the		
what methods of	use of a heat		
construction	source.		
have been used,	 Know how to use a 		
how well	range of		
products work,	techniques such as		
how well	peeling, chopping,		
products meet	slicing, grating,		
user needs and	mixing, spreading,		
wants, who	kneading and		
designed and	baking.		
made the	 Know that a 		
products,	healthy diet is		
whether	made up from a		
products can be	variety and		
recycled or	balance of different		
reused.	food and drink, as		
 Know inventors, 	depicted in the eat		
engineers and	well plate.		
manufacturers	 Can explain that to 		
who have	be active and		
developed	healthy, food and		
ground-breaking	drink are needed to		
products.	provide energy for		
 Know how to use 	the body.		
learning from			
science to help			
and design and			
make products			
that work.			
 Know that 			
mechanical and			
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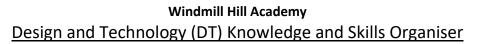
	electrical systems have an input, process and output. • Know how simple electrical circuits and components can be used to create functional products.			
Skill	Technical knowledge:	Cooking and Nutrition	Design and technical	
Progressio	electrical systems (linked	(linked to the Roman	knowledge: computer	
n	to science – electricity)	Empire)	aided design and	
	<mark>Revisit learning from Year</mark>	<mark>Revisit learning from Year 3</mark>	programming (linked to	
	<mark>3 Autumn 2</mark>	Summer 2	Computing)	
	 Work 	 Work confidently 	<mark>Revisit learning from Year</mark>	
	confidently	with a range of	<mark>4 Autumn 1</mark>	
	within a range of	contexts.	 Develop their 	
	contexts.	 Make design 	own design	
	 Describe the 	decisions that take	criteria and use	
	purpose of their	account of the	these to inform	
	products.	availability of	their ideas.	
	 Indicate the 	resources.	 Use computer 	
	design features	 Confidently order 	aided design to	
	of their products	the main stages of	develop and	
	that will appeal	making.	communicate	
	to intended	 Correctly follow 	ideas.	
	users.	procedures for	Generate realistic	
	 Gather 	safety and hygiene.	ideas, focusing on	
	information	 Confidently use a 	the needs of the	
	about the needs	wider range of	user.	
	and wants of	materials and	 Consider the 	
	particular	components than	views of others,	





individuals and	KS1, including food	including
groups.	ingredients.	intended users, to
 Share and clarify 	 Refer to their 	improve their
ideas through	design criteria as	work.
discussion.	they design and	 Use their design
 Model their 	make to inform the	criteria to
ideas using	marking process.	evaluate their
prototypes.	 Prepare and cook a 	completed
 Use annotated 	variety of	products
sketches, cross-	predominantly	considering the
sectional	savoury dishes	intended user.
drawings to	safely and	
develop and	hygienically	
communicate	including, where	
their ideas.	appropriate, the	
 Select tools and 	use of a heat	
equipment	source.	
suitable for the	■ Use a range of	
task.	techniques such as	
 Select materials 	peeling, chopping,	
and components	slicing, grating,	
suitable for the	mixing, spreading,	
task.	kneading and	
 Follow 	baking.	
procedures for	Food around the world	
safety.		
Use a wider		
range of		
materials and		
components		
from KS1,		
including		
electrical		
components.		







14/2.1			
 With ac 			
	re, mark		
out, cut			
	naterials		
and			
compor			
 With ac 	ccuracy,		
assemb	ole, join		
and con	nbine		
materia	als and		
compor	nents.		
 Apply a 	range of		
finishin	g		
techniq	ues.		
 Identify 			
strengti			
areas fo			
develop	oment in		
their ide	eas and		
product	ts.		
 Refer to 	o their		
	criteria as		
	sign and		
make.			
	rir design		
criteria			
evaluat	e their		
complex			
product			
 Use the 			
technico			
vocabu			
	jects they		
	lertaking.		
are una			





Meta						
Cognition						
Year 5	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Rebellion and Invasion	Natural elements	Civilisation	Environmental	Discoveries	Culture
Knowledge	Make: Structures (linked	Mechanical Systems		Cooking and Nutrition		
	to Vikings - making a	(linked to Carbon		(linked to		
	Viking Ship)	Footprint)		Geography/Science)		
	Revisit learning from Year	<mark>Revisit learning from</mark>		<mark>Revisit learning from Year 4</mark>		
	<mark>3 Spring 1</mark>	<mark>Year 3 Autumn 2</mark>		<mark>Spring 1</mark>		
	 Investigate and 	 Think about how 		 Investigate and 		
	analyse: why	particular parts		analyse: how well		
	materials have	of their products		products meet		
	been chosen,	work.		user needs and		
	what methods of	 Investigate and 		wants.		
	construction	analyse: how		 Investigate 		
	have been used.	well products		different chefs		
	 Investigate 	have been		who have		
	different	designed, how		developed ground-		
	designers and	well products		breaking products.		
	engineers who	have been		 Know that seasons 		
	have developed	made, why		may affect the		
	ground-breaking	materials have		food available.		
	products.	been chosen,		 Know how food is 		
		what methods		processed into		
		of construction		ingredients that		
		have been used,		can be eaten.		
		how well		 Know that recipes 		
		products work,		can be adapted to		
		how well		change the		
		products		appearance, taste,		
		achieve their		texture and		
		purposes.		aroma.		





 Investigate 	 Know that
different	different food and
inventors and	drink contain
engineers who	different
have developed	substances.
ground-breaking	
products.	
 Know that 	
mechanical	
systems have an	
input, process	
and output.	
 Know the 	
correct technical	
vocabulary for	
the projects they	
are undertaking.	





Skill	Make: Structures (linked	Mechanical Systems	Cooking and Nutrition	
Progressio	to Vikings - Making a	(linked to Carbon	(linked to	
n	Viking Ship)	Footprint)	Geography/Science)	
	Revisit learning from Year	Revisit learning from	Revisit learning from Year 4	
	<mark>3 Spring 1</mark>	<mark>Year 3 Autumn 2</mark>	Spring 1	
	 Develop a simple 	 Describe the 	Indicate the design	
	design	purpose of their	features of their	
	specification to	products.	products that will	
	guide their	 Carry out 	appeal to intended	
	thinking.	research, using	users.	
	 Share ideas 	surveys,	 Develop a simple 	
	through	interview,	design	
	discussion.	questionnaires	specification to	
	 Begin to use 	and web-based	guide their	
	annotated	resources.	thinking.	
	sketches, cross-	 Develop a 	 Formulate step-by- 	
	sectional	simple design	step plans as a	
	drawing and	specification to	guide to making.	
	exploded	guide their	 Accurately use a 	
	diagrams and	thinking.	wider range of	
	exploded	 Share and clarify 	materials and	
	diagrams to	ideas through	components than	
	develop and	discussion.	KS1, including food	
	communicate	 Model their 	ingredients.	
	their ideas.	ideas using	 Consider the views 	
	 Select tools and 	prototypes.	of others,	
	equipment	 Generate ideas 	including intended	
	suitable for the	for products.	users to improve	
	task.	 Select tools and 	their work.	
	 Select materials 	equipment	 Begin to critically 	
	and components	suitable for the	evaluate the	
	suitable for the	task.	quality of the	
	task.	 Follow 	design,	
	 Explain their 	procedures for	manufacture and	
	choice of	safety.	fitness for purpose	





materials and	 Accurately use a 	of their products	
components.	wider range of	as they design and	
 Produce 	materials and	make.	
appropriate lists	components	 Adapt recipes to 	
of tools,	than KS1,	change the	
equipment and	including	appearance, taste,	
materials that	mechanical	texture or aroma.	
they need.	components.	Food around the world	
■ Follow	 Demonstrate 		
procedures for	resourcefulness		
safety.	when tackling		
 Accurately use a 	practical		
wider range of	problems.		
materials and	 Begin to 		
components	critically		
than KS1,	evaluate the		
including	quality of their		
construction	design,		
materials.	manufactur4e		
 Accurately 	and fitness for		
measure, mark	the purpose of		
out, cut and	their product as		
shape materials	they design and		
and	make.		
components.	 Use the correct 		
	technical		
recurately			
assemble, join	vocabulary for		
and combine	the projects they		
materials and	are undertaking.		
components.			
 Identify the 			
strengths and			
areas for			
development in			





their ideas and products. Evaluate their ideas and products against their original design specification.			





Meta cognition						
Year 6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Concept	Rebellion and Invasion	Natural elements	Civilisation	Environmental	Discoveries	Culture
Knowledge		Technical knowledge: Electrical systems (linked to Science - Electricity) Revisit learning from Year 4 Autumn 1 • Explain how particular parts of their products work. • Explain their choice of tools and equipment in relation to the skills and techniques they will be using. • Explain their choice of materials and components according to their functional properties. • Investigate and analyse: how well products have been		Design and Technical knowledge: Computing to Program (linked to Computing) Revisit learning from Year 4 Summer 1 Investigate and analyse: how well have products been designed, how well products achieve their purposes, how innovative products are, what impact products have beyond their intended purpose.		Cooking and Nutrition (linked to Science – Animals including humans) Revisit learning from Year 5 Spring 2 Understand that a recipe can be adapted by adding or substituting one or more ingredients. Recognise what foods are available in different seasons. Know how food is processed into ingredients that can be eaten or used in cooking. Know that recipes can be adapted to change the





designed, how well products	appearance, taste, texture
have been	and aroma.
made, why	 Understand that
materials have	different food
been chosen,	and drink
what methods	contain different
of construction	substances –
have been used,	nutrients, water
how well	and fibre – that
products work,	are needed for
how well	health.
products	
achieve their	
purposes, how	
much products	
cost to make.	
 Independently 	
explore	
inventor,	
engineers and	
manufacturers	
who have	
developed	
ground-breaking	
products.	
 Know how more 	
complex	
electrical circuits	
and components	
can be used to	
create	
functional	
products.	





Skill	Technical knowledge:	Design and Technical	Cooking and Nutrition
Progressio	Electrical systems (linked	knowledge: Computing to	(linked to Science –
n	to Science - Electricity)	Program (linked to	Animals including
	Revisit learning from	Computing)	humans)
	Year 4 Autumn 1	Revisit learning from Year 4	Revisit learning from Year
	 Work 	Summer 1	<mark>5 Spring 2</mark>
	confidently	 Work confidently 	 Working
	within a	within a different	confidently
	different	context.	within a range of
	context.	 Indicate the design 	contexts.
	 Consider the 	features of their	 Carry out in
	design features	products that will	depth research,
	of their products	appeal to intended	using surveys,
	that will appeal	users.	interviews,
	to intended	 Consider the 	questionnaires
	users.	needs, wants,	and web-based
	 Explain how 	preferences and	resources.
	particular parts	values of	 Develop a design
	of their products	particular	specification to
	work.	individuals and	guide their
	 Develop a 	groups.	thinking.
	design	 Share and clarify 	 Formulate step-
	specification to	ideas through	by-step plans as
	guide their	discussion, taking	a guide to
	thinking.	on board the views	making for
	 Use annotated 	of others.	others to
	sketches, cross-	 Use computer- 	confidently
	sectional	aided design to	follow.
	drawings and	develop and	■ Follow
	exploded	communicate their	procedures for
	diagrams to	ideas.	safety and
	develop and	 Generate 	hygiene and
	communicate	innovative ideas.	supporting
	their ideas.	 Consider the views 	others to do so.
		of others,	







