Design and Technology Curriculum

Milestone 2 - Year 3 (S = Skill, K = Knowledge, U = Understanding)

National Curriculum Objectives (KS2)		IPC Objectives	Brainwave	Chocolate	Island Life	Temples, Tombs and Treasures
Design	*use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups	S. 2.02 To be able to design and make products to meet specific needs S. 2.03 To be able to make usable plans		X	X	X
	*generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	S. 2.02 To be able to design and make products to meet specific needs S. 2.03 To be able to make usable plans S. 2.04 To be able to make and use labelled sketches as designs		X	X	X
Make	*select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately	S. 2.05 To be able to use simple tools and equipment with some accuracy		X	X	X
	*select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	S. 2.05 To be able to use simple tools and equipment with some accuracy		X	X	X
Evaluate	*investigate and analyse a range of existing products	K. 2.01 Know that the way in which products in everyday use are designed and made affects their usefulness S. 2.08 To be able to suggest improvements to products in everyday use S. 2.07 To be able to identify the ways in which products in everyday use meet specific needs		X	X	
	*evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	S. 2.06 To be able to identify and implement improvements to their designs and products		X	X	X

	*understand how key events and individuals in design technology have helped shape the world	K. 2.01 Know that the way in which products in everyday use are designed and made affects their usefulness		X	X	X
Technical knowledge	*apply their knowledge of how to strengthen, stiffen and reinforce more complex structures					X
	*understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages)					X
	* understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors)					
	* apply their understanding of computing to programme, monitor and control their products					
Cooking and Nutrition	* understand and apply the principles of a healthy and varied diet	Cover in Science lessons				
	* prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques			X		
	*understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed			X		

Activities

Brainwave	Chocolate	Island Life	Temples, Tombs and Treasures
	-How to make our own chocolate -What we can add to chocolate -Designing chocolate wrappers	- Designing and making a bag	- Building mechanical structures to lift water

Milestone 2 - Year 4 (S = Skill, K = Knowledge, U = Understanding)

National Curriculum Objectives (KS2)		IPC Objectives	Active Planet	How Humans Work	Footprints from the Past	Scavengers And Settlers	Shaping Up…
Design	*use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups	S. 2.02 To be able to design and make products to meet specific needs S. 2.03 To be able to make usable plans	X X		X X	X X	
	*generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	S. 2.02 To be able to design and make products to meet specific needs S. 2.03 To be able to make usable plans S. 2.04 To be able to make and use labelled sketches as designs	X X X		X X X	X X X	
Make	*select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately	S. 2.05 To be able to use simple tools and equipment with some accuracy	X		X	X	
	*select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	S. 2.05 To be able to use simple tools and equipment with some accuracy	X		X	X	
Evaluate	*investigate and analyse a range of existing products	K. 2.01 Know that the way in which products in everyday use are designed and made affects their usefulness S. 2.08 To be able to suggest improvements to products in everyday use S. 2.07 To be able to identify the ways in which products in everyday use meet specific needs	 X X		X	X X	
	*evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	S. 2.06 To be able to identify and implement improvements to their designs and products	X		X	X	

	*understand how key events and individuals in design technology have helped shape the world	K. 2.01 Know that the way in which products in everyday use are designed and made affects their usefulness	X		X	X	
Technical knowledge	*apply their knowledge of how to strengthen, stiffen and reinforce more complex structures		X				
	*understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages)						
	* understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors)				X		
	* apply their understanding of computing to programme, monitor and control their products						
Cooking and Nutrition	* understand and apply the principles of a healthy and varied diet	(Taught in science)					
	* prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques						
	*understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed						

Activities

Active Planet	How Humans Work	Footprints from the Past	Scavengers and Settlers	Shaping Up
-What makes buildings strong		- Designing and making an electrical game	- Designing and making dishes for early settlers	

Milestone 3 - Year 5 (S = Skill, K = Knowledge, U = Understanding)

National Curriculum Objectives (KS2)		IPC Objectives	Brainwave	Go With the Flow	The Story of English	Weather and Climate
Design	*use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups	S. 3.07 Be able to consider the needs of users when designing and making S. 3.05 Be able to gather and use information to suggest solutions to problems S. 3.04 Be able to respond to identified needs, wants and opportunities with informed designs and products		X X X	X X X	X X X
	*generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	S. 3.06 Be able to devise and use step-by-step plans U. 3.13 Understand the need for accurate design and working		X X	X X	X X
Make	*select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately	S. 3.08 Be able to select the most appropriate available tools and materials for a task S. 3.09 Be able to work with a variety of tools and materials with some accuracy		X X	X X	X X
	*select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	S. 3.08 Be able to select the most appropriate available tools and materials for a task S. 3.09 Be able to work with a variety of tools and materials with some accuracy U. 3.15 Understand that different techniques, tools and materials are needed for different tasks		X X X	X X X	X X X
Evaluate	*investigate and analyse a range of existing products	S. 3.11 Be able to investigate the way in which simple products in everyday use are designed and made and how they work S. 3.12 Be able to evaluate the effectiveness of simple products in everyday use U. 3.16 Understand that the quality of a product depends on how well it is made and how it is made and how well it meets its intended purpose		X X X		X X X

		U. 3.14 Understand the ways in which technology can be used to meet needs, wants and opportunities		X		X
	*evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	S. 3.10 Be able to test and evaluate their own work and improve on it S. 3.13 Understand the need for accurate design and working		X X	X X	X X
	*understand how key events and individuals in design technology have helped shape the world	K.3.01 Know that technology affects people's lives K.3.02 Know how the lives of people in their host country are affected by the extent of technological advance K.3.03 Know how the lives of people in their home country are affected by the extent of technological advance		X X X	X X X	
Technical knowledge	*apply their knowledge of how to strengthen, stiffen and reinforce more complex structures			X	X	X
	*understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages)			X		X
	* understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors)					
	* apply their understanding of computing to programme, monitor and control their products	Covered in computing				X
Cooking and Nutrition	* understand and apply the principles of a healthy and varied diet	Covered in Science and PSHE				
	* prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques					
	*understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed					

Activities

Brainwave	Go With the Flow	The Story of English	Weather and Climate
	-About different types of bridges and how they are built -How to build our own bridge to span a gap and support a weight	-How the invention of the printing press changed our world -How to plan, design and create a book	-Pulleys and levers for 3D water cycle pop-up

Milestone 3 - Year 6 (S = Skill, K = Knowledge, U = Understanding)

National Curriculum Objectives (KS2)		IPC Objectives	Being Human	Mayans/ science	Express Yourself	Moving People	Earth as an Island
Design	*use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups	S. 3.07 Be able to consider the needs of users when designing and making	X	X		X	
		S. 3.05 Be able to gather and use information to suggest solutions to problems	X	X		X	
		S. 3.04 Be able to respond to identified needs, wants and opportunities with informed designs and products	X	X		X	
	*generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	S. 3.06 Be able to devise and use step-by-step plans	X	X		X	
		U. 3.13 Understand the need for accurate design and working	X	X		X	
Make	*select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately	S. 3.08 Be able to select the most appropriate available tools and materials for a task	X	X		X	
		S. 3.09 Be able to work with a variety of tools and materials with some accuracy	X	X		X	
	*select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	S. 3.08 Be able to select the most appropriate available tools and materials for a task	X	X		X	
		S. 3.09 Be able to work with a variety of tools and materials with some accuracy	X	X		X	

Evaluate	*investigate and analyse a range of existing products	S. 3.11 Be able to investigate the way in which simple products in everyday use are designed and made and how they work S. 3.12 Be able to evaluate the effectiveness of simple products in everyday use U. 3.16 Understand that the quality of a product depends on how well it is made and how it is made and how well it meets its intended purpose U. 3.14 Understand the ways in which technology can be used to meet needs, wants and opportunities	X X X X	 X X		X X X X	
	*evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	S. 3.10 Be able to test and evaluate their own work and improve on it S. 3.13 Understand the need for accurate design and working	X X	X X		X X	
	*understand how key events and individuals in design technology have helped shape the world	S.3.01 Know that technology affects people's lives S.3.02 Know how the lives of people in their host country are affected by the extent of technological advance S.3.03 Know how the lives of people in their home country are affected by the extent of technological advance		X		X	
Technical knowledge	*apply their knowledge of how to strengthen, stiffen and reinforce more complex structures			X		X	
	*understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages)			X			
	* understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors)			X			

	* apply their understanding of computing to programme, monitor and control their products			X			
Cooking and Nutrition	* understand and apply the principles of a healthy and varied diet		X				
	* prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques		X				
	*understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed		X				

Activities

Being Human	Mayans / link to science topic	Existing… Endangered… Extinct	Express Yourself	Moving People	Earth as an Island
-How to plan and prepare a healthy meal	- Making a fairground ride			- Making phone cases	