

# KS3 National Curriculum Map

## Design and Technology Units

The KS3 series of units has been written to satisfy the new National Curriculum for Design and Technology.

We recommend that, where possible, each NC requirement is covered by two or more units to ensure full coverage.

		Problem solving	Designing through sketching and modelling	Forces and stresses	Functionality and aesthetics	Innovation through iterative design	Mechanical systems and movement	Programming microcontrollers with Circuit Wizard	Principles of nutrition and health	3D printing and prototyping	Building a food repertoire
Design	Use research and exploration, such as the study of different cultures, to identify and understand user needs	✓			✓	✓			✓		
	Identify and solve their own design problems and understand how to reformulate problems given to them	✓	✓	✓		✓	✓			✓	
	Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations	✓				✓					
	Use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses	✓			✓	✓		✓			
	Develop and communicate design ideas using annotated sketches, detailed plans, 3D and mathematical modelling, oral and digital presentations and computer-based tools	✓	✓	✓	✓	✓	✓	✓		✓	
Make	Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture		✓	✓	✓	✓	✓			✓	
	Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties										✓
Evaluate	Investigate new and emerging technologies							✓		✓	
	Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups	✓	✓	✓		✓	✓		✓	✓	✓
	Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists				✓	✓			✓	✓	
Technical knowledge	Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions		✓	✓	✓		✓			✓	
	Understand how more advanced mechanical systems used in their products enable changes in movement and force						✓				
	Understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs]							✓			
	Apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers]							✓			
Cooking and nutrition	Understand and apply the principles of nutrition and health								✓		✓
	Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet										✓
	Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]								✓		✓
	Understand the source, seasonality and characteristics of a broad range of ingredients								✓		✓