Curriculum Grid

	National Curriculum Science Key Stage 3	Make It Move						Make It Smarter						Make a System					
		Video	With Wheels	And Display Speed	Without Wheels	Up an Incline	In a Pattern	Video	With a Sensor	And Faster	And Adaptable	With Communication	And Healthier	Video	That Moves a Ball	That Picks and Places	That Manufactures	That Sorts Colours	That Communicates
1 Key Concepts																			
1.1 Scientific thinking																			
a	Using scientific ideas and models to explain phenomena and developing them creatively to generate and test theories.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
b	Critically analysing and evaluating evidence from observations and experiments.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
1.2 Applications and implications of science																			
a	Exploring how the creative application of scientific ideas can bring about technological developments and consequent changes in the way people think and behave.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
b	Examining the ethical and moral implications of using and applying science.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
1.4 Collaboration																			
a	Sharing developments and common understanding across disciplines and boundaries.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
2 Key Practices																			
2.1 Practical and enquiry skills																			
	Pupils should be able to:																		
a	use a range of scientific methods and techniques to develop and test ideas and explanations		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	assess risk and work safely in the laboratory, field and workplace		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
c	plan and carry out practical and investigative activities, both individually and in groups.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
2.2 Critical understanding of evidence																			
	Pupils should be able to:																		
a	obtain, record and analyse data from a wide range of primary and secondary sources, including ICT sources, and use their findings to provide evidence for scientific explanations		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	evaluate scientific evidence and working methods.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
2.3 Communication																			
	Pupils should be able to:																		
a	use appropriate methods, including ICT, to communicate scientific information and contribute to presentations and discussions about scientific issues.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
3 Range and content																			
3.1 Energy, electricity and forces																			
a	energy can be transferred usefully, stored, or dissipated, but cannot be created or destroyed		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
b	forces are interactions between objects and can affect their shape and motion		●	●	●	●	●		◐	◐	◐	◐	◐		●	◐	◐	◐	◐
c	electric current in circuits can produce a variety of effects.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
4 Curriculum opportunities																			
a	research, experiment, discuss and develop arguments		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	pursue an independent enquiry into an aspect of science of personal interest		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
c	use real-life examples as a basis for finding out about science		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
f	use creativity and innovation in science, and appreciate their importance in enterprise		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●

	National Curriculum Maths Key Stage 3	Make It Move					Make It Smarter					Make a System				
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1 Key Concepts																			
1.1 Competence																			
a	Applying suitable mathematics accurately within the classroom and beyond.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	Communicating mathematics effectively.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	Selecting appropriate mathematical tools and methods, including ICT.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
1.2 Creativity																			
a	Combining understanding, experiences, imagination and reasoning to construct new knowledge.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	Using existing mathematical knowledge to create solutions to unfamiliar problems.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	Posing questions and developing convincing arguments.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
1.3 Application and implications of mathematics																			
a	Knowing that mathematics is a rigorous, coherent discipline.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	Understanding that mathematics is used as a tool in a wide range of contexts.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
d	Engaging in mathematics as an interesting and worthwhile activity.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
1.4 Critical understanding																			
a	Knowing that mathematics is essentially abstract and can be used to model, interpret or represent situations.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	Recognising the limitations and scope of a model or representation.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
2 Key Processes																			
2.1 Representing																			
	Pupils should be able to:																		
a	identify the mathematical aspects of a situation or problem		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	choose between representations		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	simplify the situation or problem in order to represent it mathematically, using appropriate variables, symbols, diagrams and models		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
d	select mathematical information, methods and tools to use.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
2.2 Analysing																			
	Use mathematical reasoning																		
	Pupils should be able to:																		
a	make connections within mathematics		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	use knowledge of related problems		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
e	make and begin to justify conjectures and generalisations, considering special cases and counter-examples		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
f	explore the effects of varying values and look for invariance and covariance		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
g	take account of feedback and learn from mistakes		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
h	work logically towards results and solutions, recognising the impact of constraints and assumptions		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
j	reason inductively and deduce.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
2.3 Interpreting and evaluating																			
	Pupils should be able to:																		
a	form convincing arguments based on findings and make general statements		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	consider the assumptions made and the appropriateness and accuracy of results and conclusions		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	be aware of the strength of empirical evidence and appreciate the difference between evidence and proof		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
d	look at data to find patterns and exceptions		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
e	relate findings to the original context, identifying whether they support or refute conjectures		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
f	engage with someone else's mathematical reasoning in the context of a problem or particular situation		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
g	consider the effectiveness of alternative strategies.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●

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2.4 Communicating																			
	Pupils should be able to:																		
a	communicate findings effectively		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	engage in mathematical discussion of results		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	consider the elegance and efficiency of alternative solutions		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
d	look for equivalence in relation to both the different approaches to the problem and different problems with similar structures		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
e	make connections between the current situation and outcomes, and situations and outcomes they have already encountered.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
3 Range and content																			
3.1 Number and algebra																			
c	applications of ratio and proportion		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
d	accuracy and rounding		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
f	linear equations, formulae, expressions and identities		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
g	analytical, graphical and numerical methods for solving equations		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
3.2 Geometry and measures																			
a	properties of 2D and 3D shapes						◐												
f	points, lines and shapes in 2D coordinate systems						◐												
3.3 Statistics																			
a	the handling data cycle		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	presentation and analysis of grouped and ungrouped data, including time series and lines of best fit		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
c	measures of central tendency and spread		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
d	experimental and theoretical probabilities, including those based on equally likely outcomes.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
4 Curriculum opportunities																			
a	develop confidence in an increasing range of methods and techniques		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	work on sequences of tasks that involve using the same mathematics in increasingly difficult or unfamiliar contexts, or increasingly demanding mathematics in similar contexts		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
c	work on open and closed tasks in a variety of real and abstract contexts that allow them to select the mathematics to use		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
d	work on problems that arise in other subjects and in contexts beyond the school		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
e	work on tasks that bring together different aspects of concepts, processes and mathematical content		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
f	work collaboratively as well as independently in a range of contexts		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
g	become familiar with a range of resources, including ICT, so that they can select appropriately.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●

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1 Key Concepts																			
1.1 Designing and making																			
a	Understanding that designing and making has aesthetic, environmental, technical, economic, ethical and social dimensions and impacts on the world.	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
b	Applying knowledge of materials and production processes to design products and produce practical solutions that are relevant and fit for purpose.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	Understanding that products and systems have an impact on quality of life.	◐	●	●	●	●	●	◐	●	●	●	●	●	◐	●	●	●	●	●
d	Exploring how products have been designed and made in the past, how they are currently designed and made, and how they may develop in the future.	◐						◐						◐					
1.3 Creativity																			
a	Making links between principles of good design, existing solutions and technological knowledge to develop innovative products and processes.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
c	Exploring and experimenting with ideas, materials, technologies and techniques.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
1.4 Critical Evaluation																			
a	Analysing existing products and solutions to inform designing and making.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
b	Evaluating the needs of users and the context in which products are used to inform designing and making.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
c	Exploring the impact of ideas, design decisions and technological advances and how these provide opportunities for new design solutions.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
2 Key Processes																			
	Pupils should be able to:																		
a	generate, develop, model and communicate ideas in a range of ways, using appropriate strategies		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	respond creatively to briefs, developing their own proposals and producing specifications for products		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	apply their knowledge and understanding of a range of materials, ingredients and technologies to design and make their products		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
d	use their understanding of others' designing to inform their own		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
g	solve technical problems		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
h	reflect critically when evaluating and modifying their ideas and proposals		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
3 Range and Content																			
a	The curriculum should include resistant materials, systems and control and at least one of food or textiles product areas.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
In each product area the study of designing should include understanding of:																			
b	users' needs and the problems arising from them		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
e	aesthetic, technical, constructional and relevant wider issues that may influence designing, selection of materials, making and product development.	◐						◐						◐					
The study of making in resistant materials and textiles should include:																			
k	the behaviour of structural elements in a variety of materials	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
l	how to use materials, smart materials, technology and aesthetic qualities to design and make products of worth	◐	●	●	●	●	●	◐	●	●	●	●	●	◐	●	●	●	●	●
m	how to prepare and assemble components to achieve functional results.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	

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	National Curriculum Design and Technology Key Stage 3	Make It Move						Make It Smarter						Make a System					
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The study of making in systems and control should include:																			
n	the practical application of systems and control in design proposals	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
o	electrical, electronic, mechanical, microprocessor and computer control systems and how to use them effectively		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
p	using systems and control to assemble subsystems into more complex systems		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
q	feedback and how a variety of inputs can give rise to a variety of outputs.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
4 Curriculum opportunities																			
a	analyse products to learn how they function	◐						◐						◐					
c	engage in design and make assignments in different and progressively more complex contexts, including for purposes and uses beyond the classroom		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
d	work individually and in teams, taking on different roles and responsibilities		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
f	use ICT as appropriate for image capture and generation; data acquisition, capture and handling; controlling; and product realisation		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
g	make links between design and technology and other subjects and areas of the curriculum.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●

	National Curriculum Science Key Stage 4	Make It Move						Make It Smarter						Make a System					
		Video	With Wheels	And Display Speed	Without Wheels	Up an Incline	In a Pattern	Video	With a Sensor	And Faster	And Adaptable	With Communication	And Healthier	Video	That Moves a Ball	That Picks and Places	That Manufactures	That Sorts Colours	That Communicates
1. Data evidence, theories and explanations																			
	Pupils should be taught:																		
a	how scientific data can be collected and analysed		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	how interpretation of data, using creative thought, provides evidence to test ideas and develop theories		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	how explanations of many phenomena can be developed using scientific theories, models and ideas		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
2. Practical and enquiry skills																			
	Pupils should be taught to:																		
a	plan to test a scientific idea, answer a scientific question, or solve a scientific problem		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	collect data from primary or secondary sources, including using ICT sources and tools		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	work accurately and safely, individually and with others, when collecting first-hand data		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
d	evaluate methods of collection of data and consider their validity and reliability as evidence.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
3. Communication skills																			
	Pupils should be taught to:																		
a	recall, analyse, interpret, apply and question scientific information or ideas		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	use both qualitative and quantitative approaches		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	present information, develop an argument and draw a conclusion, using scientific, technical and mathematical language, conventions and symbols and ICT tools.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
4. Applications and implications of science																			
	Pupils should be taught to:																		
a	about the use of contemporary scientific and technological developments and their benefits, drawbacks and risks		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
b	to consider how and why decisions about science and technology are made, including those that raise ethical issues, and about the social, economic and environmental effects of such decisions		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
7. Energy, electricity and radiations																			
	In their study of science, the following should be covered:																		
a	energy transfers can be measured and their efficiency calculated, which is important in considering the economic costs and environmental effects of energy use								◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
b	evaluate scientific evidence and working methods.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	radiations, including ionising radiations, can transfer energy								◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
d	radiations in the form of waves can be used for communication.								◐	◐	◐	◐	◐		◐	◐	◐	◐	◐

	National Curriculum Maths Key Stage 4	Make It Move						Make It Smarter						Make a System					
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1 Key Concepts																			
1.1 Competence																			
a	Applying suitable mathematics accurately within the classroom and beyond	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
b	Communicating mathematics effectively.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	Selecting appropriate mathematical tools and methods, including ICT	◐	●	●	●	●	●	◐	●	●	●	●	●	◐	●	●	●	●	●
1.2 Creativity																			
a	Combining understanding, experiences, imagination and reasoning to construct new knowledge.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	Using existing mathematical knowledge to create solutions to unfamiliar problems.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	Posing questions and developing convincing arguments.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
1.3 Application and implications of mathematics																			
a	Knowing that mathematics is a rigorous, coherent discipline.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	Understanding that mathematics is used as a tool in a wide range of contexts.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
d	Engaging in mathematics as an interesting and worthwhile activity.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
1.4 Critical understanding																			
a	Knowing that mathematics is essentially abstract and can be used to model, interpret or represent situations.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	Recognising the limitations and scope of a model or representation.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
2 Key Processes																			
2.1 Representing																			
	Pupils should be able to:																		
a	identify the mathematical aspects of a situation or problem		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	compare and evaluate representations of a situation before making a choice		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	simplify the situation or problem in order to represent it mathematically, using appropriate variables, symbols, diagrams and models		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
d	select mathematical information, methods and tools to use.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
2.2 Analysing																			
	Use mathematical reasoning																		
	Pupils should be able to:																		
a	make connections within mathematics		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	use knowledge of related problems		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
e	make and begin to justify conjectures and generalisations, considering special cases and counter-examples		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
f	explore the effects of varying values and look for invariance and covariance		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
g	take account of feedback and learn from mistakes		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
h	work logically towards results and solutions, recognising the impact of constraints and assumptions		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
i	identify a range of techniques that could be used to tackle a problem, appreciating that more than one approach may be necessary		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
j	reason inductively, deduce and prove.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●

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	National Curriculum Maths Key Stage 4	Make It Move						Make It Smarter						Make a System					
		Video	With Wheels	And Display Speed	Without Wheels	Up an Incline	In a Pattern	Video	With a Sensor	And Faster	And Adaptable	With Communication	And Healthier	Video	That Moves a Ball	That Picks and Places	That Manufactures	That Sorts Colours	That Communicates
	Use appropriate mathematical procedures																		
	Pupils should be able to:																		
k	make accurate mathematical diagrams, graphs and constructions on paper and on screen		◐	◐	◐	◐	◐		●	◐	◐	◐	◐		◐	◐	◐	◐	◐
l	calculate accurately, using mental methods or calculating devices as appropriate		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
m	manipulate numbers, algebraic expressions and equations and apply routine algorithms		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
n	use accurate notation, including correct syntax when using ICT		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
o	record methods, solutions and conclusions		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
p	estimate, approximate and check working.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
2.3 Interpreting and evaluating																			
	Pupils should be able to:																		
a	form convincing arguments based on findings and make general statements		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	consider the assumptions made and the appropriateness and accuracy of results and conclusions		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	appreciate the strength of empirical evidence and distinguish between evidence and proof		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
d	look at data to find patterns and exceptions		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
e	relate their findings to the original question or conjecture, and indicate reliability		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
f	make sense of someone else's findings and judge their value in the light of the evidence they present		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
g	critically examine strategies adopted.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
2.4 Communicating																			
	Pupils should be able to:																		
a	use a range of forms to communicate findings to different audiences		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	engage in mathematical discussion of results		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	consider the elegance and efficiency of alternative solutions		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
d	look for equivalence in relation to both the different approaches to the problem and different problems with similar structures		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
e	give examples of similar contexts they have previously encountered and identify how these contexts differed from or were similar to the current situation and how and why the same, or different, strategies were used.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
3 Range and content																			
3.1 Number and algebra																			
a	real numbers, their properties and their different representations		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
b	rules of arithmetic applied to calculations and manipulations with real numbers, including standard index form and surds		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
d	upper and lower bounds		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
e	linear, quadratic and other expressions and equations		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐

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	National Curriculum Maths Key Stage 4	Make It Move						Make It Smarter						Make a System					
		Video	With Wheels	And Display Speed	Without Wheels	Up an Incline	In a Pattern	Video	With a Sensor	And Faster	And Adaptable	With Communication	And Healthier	Video	That Moves a Ball	That Picks and Places	That Manufactures	That Sorts Colours	That Communicates
3.2 Geometry and measures																			
a	properties and mensuration of 2D and 3D shapes						◐												
c	trigonometrical relationships		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
g	conversions between measures and compound measures		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
3.3 Statistics																			
a	the handling data cycle		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	presentation and analysis of large sets of grouped and ungrouped data, including box plots and histograms, lines of best fit and their interpretation		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
c	measures of central tendency and spread		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
4 Curriulum opportunities																			
a	develop confidence in an increasing range of methods and techniques		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
b	work on sequences of tasks that involve using the same mathematics in increasingly difficult or unfamiliar contexts, or increasingly demanding mathematics in similar contexts		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
c	work on open and closed tasks in a variety of real and abstract contexts that allow them to select the mathematics to use		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐
d	work on problems that arise in other subjects and in contexts beyond the school		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
e	work on tasks that bring together different aspects of concepts, processes and mathematical content		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
f	work collaboratively as well as independently in a range of contexts		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●
g	become familiar with a range of resources, including ICT, so that they can select appropriately.		●	●	●	●	●		●	●	●	●	●		●	●	●	●	●