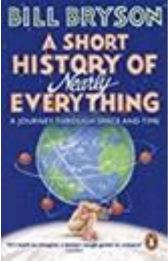
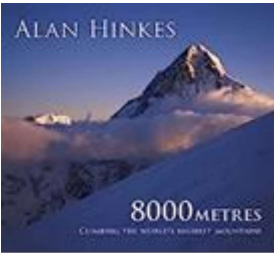
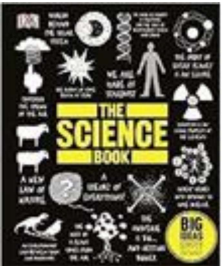
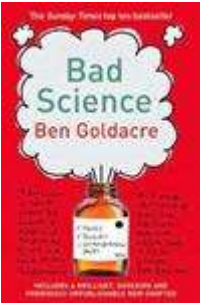
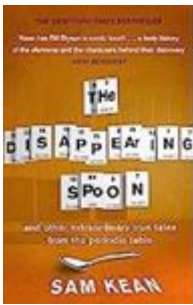
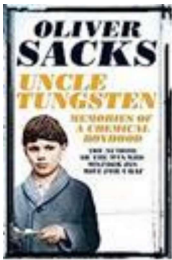




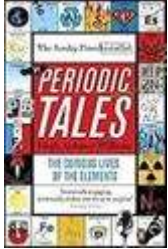

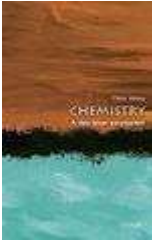
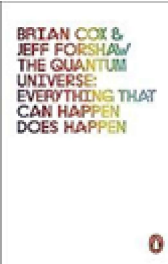
**Science Year 12 & 13 Reading Lists**

Title	Author	Information
<b>General Science</b>		
<p>A Short History of Nearly Everything</p> 	<p>Bill Bryson</p>	<p>Bill Bryson describes himself as a reluctant traveller: but even when he stays safely in his own study at home, he can't contain his curiosity about the world around him. A Short History of Nearly Everything is his quest to find out everything that has happened from the Big Bang to the rise of civilization - how we got from there, being nothing at all, to here, being us.</p>
<p>8000 metres Climbing the World's highest mountains</p> 	<p>Alan Hinkes</p>	<p>In this book, renowned British mountaineer Alan Hinkes relates his experiences of climbing all 14 of the peaks over 8000m: the world's highest mountains. Alongside stunning photography, he describes his expeditions - many as Alpine-style ascents - capturing the beauty, harshness and danger of these mountains.</p>
<p>The Science Book, Big Ideas Simply Explained</p> 	<p>Dan Green</p>	<p>Discover 80 trail-blazing scientific ideas, which underpin our modern world, giving us everything from antibiotics to gene therapy, electricity to space rockets and batteries to smart phones. What is string theory or black holes? And who discovered gravity and radiation? The Science Book presents the fascinating story behind these and other of the world's most important concepts in maths, chemistry, physics and biology in plain English, with easy to grasp "mind maps" and eye-catching artworks.</p>
<p>Bad Science</p> 	<p>Ben Goldacre</p>	<p>Since 2003 Dr Ben Goldacre has been exposing dodgy medical data in his popular Guardian column. In this eye-opening book he takes on the MMR hoax and misleading cosmetics ads, acupuncture and homeopathy, vitamins and mankind's vexed relationship with all manner of 'toxins'. Along the way, the self-confessed 'Johnny Ball cum Witchfinder General' performs a</p>

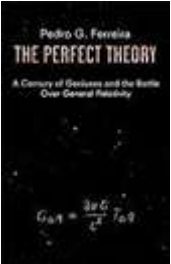
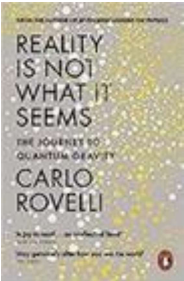
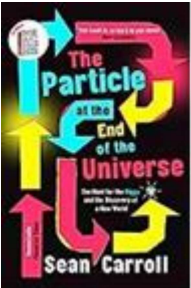


		successful detox on a Barbie doll, sees his dead cat become a certified nutritionist and probes the supposed medical qualifications of 'Dr' Gillian McKeith. Full spleen and satire, Ben Goldacre takes us on a hilarious, invigorating and ultimately alarming journey through the bad science we are fed daily by hacks and quacks.
<b>Chemistry</b>		
<p>The Disappearing Spoon</p> 	Sam Kean	Why did Gandhi hate iodine (I, 53)? Why did the Japanese kill Godzilla with missiles made of cadmium (Cd, 48)? How did radium (Ra, 88) nearly ruin Marie Curie's reputation? And why did tellurium (Te, 52) lead to the most bizarre gold rush in history? The periodic table is one of our crowning scientific achievements, but it's also a treasure trove of passion, adventure, betrayal and obsession. The fascinating tales in The Disappearing Spoon follow carbon, neon, silicon, gold and every single element on the table as they play out their parts in human history, finance, mythology, conflict, the arts, medicine and the lives of the (frequently) mad scientists who discovered them.
<p>Uncle Tungsten – Memories of a chemical boyhood</p> 	Oliver Sacks	Long before Oliver Sacks became a distinguished neurologist and bestselling writer, he was a small English boy fascinated by metals—also by chemical reactions (the louder and smellier the better), photography, squids and cuttlefish, H.G. Wells, and the periodic table. In this endlessly charming and eloquent memoir, the author of The Man Who Mistook His Wife for a Hat and Awakenings chronicles his love affair with science and the magnificently odd and sometimes harrowing childhood in which that love affair unfolded.
<p>Periodic Tales: The Curious Lives of the Elements</p>	Hugh Aldersey Williams	Like you, the elements have personalities, attitudes, talents, shortcomings, stories rich with meaning. Here you'll meet iron that rains from the heavens and noble gases that light the way to vice. You'll learn how lead can tell your future while zinc may one day line your coffin. You'll discover what connects the bones in your body with the Whitehouse in Washington, the glow of a streetlamp with the salt on your dinner



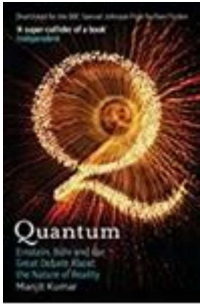
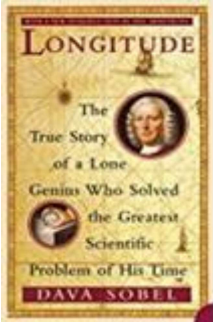
		table. Unlocking their astonishing secrets and colourful pasts, Periodic Tales is a voyage of wonder and discovery, showing that their stories are our stories, and their lives are inextricable from our own.
<p>Stuff Matters: Exploring the Marvelous Materials That Shape Our Man-Made World</p> 	Mark Miodownik	In Stuff Matters, Miodownik entertainingly examines the materials he encounters in a typical morning, from the steel in his razor and the graphite in his pencil to the foam in his sneakers and the concrete in a nearby skyscraper. He offers a compendium of the most astounding histories and marvellous scientific breakthroughs in the material world.
<p>CHEMISTRY – A Very Short Introduction</p> 	Peter Atkins	Chemistry: A Very Short Introduction encourages us to look at chemistry anew, through a chemist's eyes, in order to understand its central concepts and to see how it contributes towards our material comfort and to human culture. It shows how chemistry provides the infrastructure of our world, through the chemical industry, the fuels of heating, power generation, and transport, as well as the fabrics of our clothing and furnishings.
<b>Physics</b>		
<p>The Quantum Universe: Everything that can happen does happen”</p> 	Jeff Forshaw and Brian Cox	From the bestselling authors of Why does E=mc <sup>2</sup> ? comes The Quantum Universe, in which Brian Cox, presenter of the BBC's Wonders of the Solar System and Wonders of the Universe, and Jeff Forshaw go on a brilliantly ambitious mission to show that everyone can understand the deepest questions of science. But just what is quantum physics? How does it help us understand our amazing world? Where does it leave Newton and Einstein? And why, above all, can we be sure that the



		<p>theory is good? Here, Brian Cox and Jeff Forshaw give us the real science behind the bizarre behaviour of the atoms and energy that make up the universe, and reveal exactly how everything that can happen, does happen.</p>
<p>The Perfect Theory: A Century of Geniuses and the Battle Over General Relativity</p> 	<p>Pedro G. Ferreira</p>	<p>Albert Einstein's General Theory of Relativity is possibly the most perfect intellectual achievement in modern physics. Anything that involves gravity, the force that powers everything on the largest, hottest or densest of scales, can be explained by it. From the moment Einstein first proposed the theory in 1915, it was received with enthusiasm yet also with tremendous resistance, and for the following ninety years was the source of a series of feuds, vendettas, ideological battles and persecutions featuring a colourful cast of characters.</p>
<p>Reality is not what it seems</p> 	<p>Carlo Rovelli</p>	<p>Do space and time truly exist? What is reality made of? Can we understand its deep texture? Scientist Carlo Rovelli has spent his whole life exploring these questions and pushing the boundaries of what we know. In this mind-expanding book, he shows how our understanding of reality has changed throughout centuries, from Democritus to loop quantum gravity. Taking us on a wondrous journey, he invites us to imagine a whole new world where black holes are waiting to explode, spacetime is made up of grains, and infinity does not exist -- a vast universe still largely undiscovered.</p>
<p>The particle at the end of the universe</p> 	<p>Sean Carroll</p>	<p>The Higgs boson is one of our era's most fascinating scientific frontiers and the key to understanding why mass exists. The most recent book on the subject, The God Particle, was a bestseller. Now, Caltech physicist Sean Carroll documents the doorway that is opening—after billions of dollars and the efforts of thousands of researchers at the Large Hadron Collider in Switzerland—into the mindboggling world of dark matter. The Particle at the End of the Universe has it all: money and politics, jealousy and self sacrifice, history and</p>

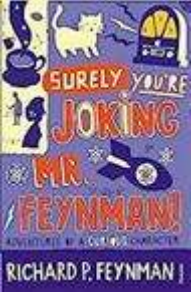
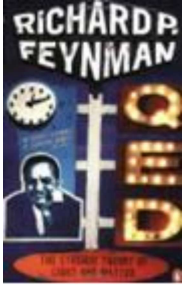
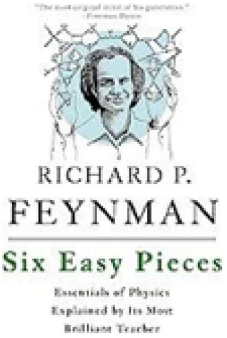


FAKENHAM  
SIXTH FORM

		cutting-edge physics—all grippingly told by a rising star of science writing.
Quantum 	Manjit Kumar	For most people, quantum theory is a byword for mysterious, impenetrable science. And yet for many years it was equally baffling for scientists themselves. In this magisterial book, Manjit Kumar gives a dramatic and superbly-written history of this fundamental scientific revolution, and the divisive debate at its core. Quantum theory looks at the very building blocks of our world, the particles and processes without which it could not exist. Yet for 60 years most physicists believed that quantum theory denied the very existence of reality itself. In this tour de force of science history, Manjit Kumar shows how the golden age of physics ignited the greatest intellectual debate of the twentieth century.
Longitude 	Dava Sobel	The dramatic human story of an epic scientific quest and of one man's forty-year obsession to find a solution to the thorniest scientific dilemma of the day--"the longitude problem." Anyone alive in the eighteenth century would have known that "the longitude problem" was the thorniest scientific dilemma of the day-and had been for centuries. Lacking the ability to measure their longitude, sailors throughout the great ages of exploration had been literally lost at sea as soon as they lost sight of land. Thousands of lives and the increasing fortunes of nations hung on a resolution. One man, John Harrison, in complete opposition to the scientific community, dared to imagine a mechanical solution-a clock that would keep precise time at sea, something no clock had ever been able to do on land.
Surely you are joking Mr Feynman	Richard P. Feynman	Winner of the Nobel Prize for Physics in 1965, Richard Feynman was one of the world's greatest theoretical physicists, but he was also a man who fell, often jumped, into adventure. An artist, safecracker, practical joker and storyteller, Feynman's life was a series of combustible combinations made possible by his unique mixture of high intelligence, unquenchable curiosity and eternal scepticism.



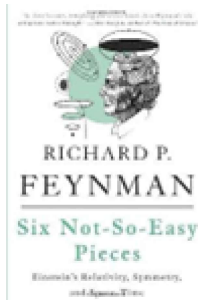
## FAKENHAM SIXTH FORM

		<p>Over a period of years, Feynman's conversations with his friend Ralph Leighton were first taped and then set down as they appear here, little changed from their spoken form, giving a wise, funny, passionate and totally honest self-portrait of one of the greatest men of our age.</p>
<p>QED - The Strange Theory of Light and Matter</p> 	Richard P. Feynman	<p>Quantum electrodynamics - or QED for short - is the theory that explains how light and electrons interact, and in doing so illuminates the deepest and most complex mysteries of the world around us.</p> <p>Thanks to Richard Feynman and his colleagues, who won the Nobel Prize for their groundbreaking work in this area, it is also one of the rare parts of physics that is known for sure - a theory that has stood the test of time. In these entertaining lectures Feynman uses clear everyday examples to provide the definitive introduction to QED.</p>
<p>Six easy pieces</p> 	Richard P. Feynman	<p>It was Richard Feynman's outrageous and scintillating method of teaching that earned him legendary status among students and professors of physics. From 1961 to 1963, Feynman delivered a series of lectures at the California Institute of Technology that revolutionised the teaching of physics around the world. <i>Six Easy Pieces</i>, taken from these famous Lectures on Physics, represent the most accessible material from the series.</p> <p>In these classic lessons, Feynman introduces the general reader to the following topics: atoms, basic physics, energy, gravitation, quantum mechanics, and the relationship of physics to other topics. With his dazzling and inimitable wit, Feynman presents each discussion with a minimum of jargon. Filled with wonderful examples and clever illustrations, <i>Six Easy Pieces</i> is the ideal introduction to the fundamentals of physics by one of the most admired and accessible physicists of modern times.</p>



## FAKENHAM SIXTH FORM

Six not so easy pieces



Richard P. Feynman

It was Richard Feynman's outrageous and scintillating method of teaching that earned him legendary status among students and professors of physics. From 1961 to 1963, Feynman delivered a series of lectures at the California Institute of Technology that revolutionised the teaching of physics. In *Six Not-So-Easy Pieces*, taken from these famous *Lectures on Physics*, Feynman delves into one of the most revolutionary discoveries in twentieth-century physics: Einstein's theory of relativity. The idea that the flow of time is not a constant, that the mass of an object depends on its velocity, and that the speed of light is a constant no matter what the motion of the observer, at first seemed shocking to scientists and laymen alike. But as Feynman shows, these tricky ideas are not merely dry principles of physics, but things of beauty and elegance.