



Topic Name	Term	Skills Developed	Link to NC Subject Content	Next link in curriculum	Other Notes
Heating & Cooling	Autumn	<ul style="list-style-type: none">• Collect data• Present data• Analyse patterns• Draw conclusions• Construct explanations	<ul style="list-style-type: none">• heating and thermal equilibrium: temperature difference between 2 objects leading to energy transfer from the hotter to the cooler one, through contact (conduction) or radiation; such transfers tending to reduce the temperature difference; use of insulators• energy as a quantity that can be quantified and calculated; the total energy has the same value before and after a change• comparing the starting with the final conditions of a system and describing increases and decreases in the amounts of energy associated with movements, temperatures, changes in positions in a field, in elastic distortions and in chemical compositions• using physical processes and mechanisms, rather than energy, to explain the intermediate steps that bring about such changes	<ul style="list-style-type: none">• Y9 Autumn – Density and Matter	Further links to KS4 - Y10 Topic 4 Internal Energy and Topic 5 Heating & Infrared



The Universe	Spring	<ul style="list-style-type: none"> understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review understand and use SI units use simple equations and carry out appropriate calculations 	<ul style="list-style-type: none"> gravity force, weight = mass x gravitational field strength (g), on Earth $g=10 \text{ N/kg}$, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and sun (qualitative only) our sun as a star, other stars in our galaxy, other galaxies the seasons and the Earth's tilt, day length at different times of year, in different hemispheres the light year as a unit of astronomical distance 	<ul style="list-style-type: none"> Y11 Spring - Space physics 	
Forces Extension Topic	Summer	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> friction and friction between surfaces, with pushing things out of the way; resistance to motion of air and water force-extension linear relation; Hooke's Law as a special case work done and energy changes on deformation <p>Pressure</p> <ul style="list-style-type: none"> atmospheric pressure, decreases with increase of height as weight of air above decreases with height moment as the turning effect of a force 	<ul style="list-style-type: none"> 	



			<ul style="list-style-type: none">• forces: associated with deforming objects; stretching and squashing – springs; wit• pressure in liquids, increasing with depth; upthrust effects, floating and sinking• pressure measured by ratio of force over area – acting normal to any surface•		
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