

Subject	Y9 Threshold Knowledge – Autumn/Spring/Summer term	How to support students' learning
Science - Physics	<p>Autumn Term</p> <ol style="list-style-type: none"> 1. Recall the 8 stores of energy. 2. Recall the 4 energy transfers. 3. Apply the concept of conservation of energy to situations. 4. Define and calculate Power. 5. Define and calculate Work Done. 6. Understand dissipation. 7. Describe ways to reduce unwanted energy transfers. 8. Define and calculate Efficiency. 9. Compare conduction, convection and radiation transfers. 10. Compare renewable and non-renewable energy resources and give examples. <p>Spring Term</p> <ol style="list-style-type: none"> 11. Describe the arrangement and motion of particles in the three states of matter. 12. Recall the names of the changes of state. 13. Calculate the density of objects. 14. Explain how to measure the density of objects. 15. Understand that heating can change either the temperature or the state of an object. 16. Explain the features of a heating/cooling curve. 17. Define and calculate specific heat capacity. 18. Investigate how to measure the specific heat capacity of materials. 19. Define and calculate specific latent heat. 20. Explain how the motion of particles in a gas is related to the gases temperature and pressure. <p>Summer Term</p> <ol style="list-style-type: none"> 21. Describe the basic structure of the atom. 22. Know the size of the atom and the nucleus. 23. Describe why atoms have no overall charge. 24. Understand and compare mass and atomic number. 25. Define isotope and ion. 26. Describe the discovery of the atom and the nucleus. 27. Describe the results of the alpha scattering experiment 28. Describe what radioactive decay is. 	<ul style="list-style-type: none"> • Use BBC bitesize: https://www.bbc.co.uk/bitesize/subjects/z4882hv • Get pupils to set themselves quizzes on Educake (The Science Department's homework platform) to help them revise topics they are trying to understand. • Talk about science at home and what students have learnt today. As well as discuss new scientific advances in the news. • Watch David Attenborough documentaries about the planet e.g., Blue planet. • Watch BBC Four's 'Chemistry: A volatile history' documentary. • Watch 'Into the universe with Stephen Hawking' documentary. • Use the link below to help find lessons you need to refresh and want to revise; https://continuityoak.org.uk/lessons • For topics that exceed the national curriculum you may need to look at the GCSE topics to.

	<p>29. Know the difference between activity and count rate.</p> <p>30. Describe the 3 types of nuclear radiation - alpha, beta and gamma decay.</p>	
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