

Subject	Year 8 Threshold Knowledge – Autumn/Spring/Summer term	How to support students' learning
Physics	<p><b>Autumn Term</b></p> <ol style="list-style-type: none"> <li>1. Recall and use the equation to calculate the Power of an appliance.</li> <li>2. Recall the equation for efficiency and use it to calculate the efficiency of different appliances.</li> <li>3. Calculate the cost of using different appliances and recall the information provided on an energy bill.</li> <li>4. Recall a range of different energy resources, describing the advantages and disadvantages of using each for electricity generation.</li> <li>5. Describe current using different models.</li> <li>6. Describe the difference between a series and parallel circuit.</li> <li>7. Recall examples of electrical conductors and insulators.</li> <li>8. Recall circuit symbols and use them to construct circuit diagrams.</li> <li>9. Explain what static electricity is and some of the dangers of this.</li> <li>10. Recall how sound travels through different mediums.</li> <li>11. Explain how sound is produced by vibrations.</li> <li>12. Define the term frequency and its units.</li> <li>13. Explain how the ear works and recall the auditory range for humans.</li> <li>14. Recall the speed of sound and carry out calculations using this value.</li> <li>15. Recall the applications of sound waves.</li> <li>16. Recall some properties of light.</li> <li>17. Explain the law of reflection using ray diagrams to show this.</li> <li>18. Define refraction and explain why it happens.</li> <li>19. Label the parts of the eye and recall their functions.</li> </ol>	<ul style="list-style-type: none"> <li>• Use BBC bitesize Physics: <a href="https://www.bbc.co.uk/bitesize/subjects/zh2xsbk">https://www.bbc.co.uk/bitesize/subjects/zh2xsbk</a></li> <li>• Get pupils to set themselves quizzes on Educake (The Science Department's homework platform) to help them revise topics they are trying to understand.</li> <li>• Talk about science at home and what students have learnt today. As well as discuss new scientific advances in the news.</li> <li>• Watch 'Into the universe with Stephen Hawking' documentary.</li> <li>• Use the link below to help find lessons you need to refresh and want to revise; <a href="https://continuityoak.org.uk/lessons">https://continuityoak.org.uk/lessons</a></li> </ul>

20. Show an understanding of the primary and secondary colours of light and how a spectrum can be produced from white light.

**Spring Term**

21. Show an understanding of the relative magnitudes of stars, solar systems, galaxies and the universe.
22. Recall the stages of how stars are formed.
23. Explain how we get day and night.
24. Explain why and how we have seasons.
25. Show an understanding of why we observe different phases of the moon.
26. Recall that mass and weight are different but related.
27. Explain that mass is a property of an object, but weight also depends on gravitational field strength.
28. Use the equation  $\text{Weight} = \text{Mass} \times \text{Gravitational Field Strength}$  to calculate different.
29. Draw force diagrams for systems involving gravity.
30. Calculate the weight of objects on different planets.
31. Draw the shape of the magnetic field around a bar magnet and the earth.
32. Describe where the magnetic field is strongest when given a magnetic field diagram.
33. Describe and explain how to make an induced magnet.
34. Describe how a compass works.
35. Understand the difference between a permanent and an induced magnet.
36. Recall some magnetic materials.
37. Recall the factors that affect pressure.
38. Recall and use the equation for pressure.
39. Describe the difference between pressure and stress.
40. Explain what causes objects to float or sink.

	<p><b>Summer Term</b></p> <ol style="list-style-type: none"><li>41. Define potential difference.</li><li>42. Describe potential difference using an appropriate model.</li><li>43. Recall the rules for p.d in series and parallel circuits.</li><li>44. Define electrical resistance.</li><li>45. Calculate resistance using Ohm's law.</li><li>46. Investigate resistance in circuits.</li><li>47. Describe how to make an electromagnet.</li><li>48. Recall different uses of electromagnets.</li><li>49. Explain how to increase the strength of an electromagnet.</li><li>50. Describe the advantages and disadvantages of electromagnets compared to bar magnets.</li><li>51. Define speed and the equation to calculate speed.</li><li>52. Describe the features of a distance-time graph.</li><li>53. Draw distance-time graphs accurately.</li><li>54. Plan and carry out an investigation of factors that affect speed.</li><li>55. Explain the term relative motion and calculate relative speed.</li></ol>	
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