

Target	Triple Physics Tick List		
P1 Energy			
1.	<i>Describe infrared radiation</i>		
2.	<i>Describe what happens to an object if it absorbs more radiation than it emits-link to the Earth.</i>		
P2 Electricity			
3.	<i>Describe how static electricity is produced and describe the effects of attraction and repulsion</i>		
4.	<i>Draw the electric field pattern for an isolated sphere</i>		
5.	<i>Explain the concept of an electric field and use it to explain the non-contact force between charged objects and sparking</i>		
P3 Particle Model of Matter			
6.	<i>Describe the effect of pressure changes in a gas</i>		
7.	<i>Describe how changing volume effects the pressure in a gas</i>		
8.	<i>Calculate the change in pressure of a gas or the volume of a gas</i>		
9.	<i>Define work and describe the effect of doing work on a gas</i>		
P4 Radiation			
10.	<i>Describe what background radiation is and where it comes from</i>		
11.	<i>Explain why the hazards associated with radioactive material depend on its half life</i>		
12.	<i>Describe and evaluate the use of nuclear radiation in medicine</i>		
13.	<i>Describe the process of nuclear fission and draw and interpret diagrams</i>		
14.	<i>Describe what nuclear fusion is</i>		

P5 Forces

Moments

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| 1. | Describe what a moment is | | | |
| 2. | Recall and rearrange the equation to calculate a moment and identify its units | | | |
| 3. | Explain the principle of moments | | | |
| 4. | Calculate the weight of an object using $M = F \times d$ and the idea of balanced moments | | | |
| 5. | Describe what a simple lever is and can be used for | | | |
| 6. | Describe what a simple gear system is and can be used for | | | |

Momentum

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| 7. | <i>Use the momentum equation and the conservation equation to complete calculations for an event, such as a collision of two objects</i> | | | |
| 8. | <i>Describe how we can calculate the force in a collision</i> | | | |
| 9. | <i>Use and rearrange the equation given on the physics sheet to calculate the change in momentum and/or an impact force</i> | | | |
| 10. | <i>Explain, in terms of rate of change of momentum, safety feature such as air bags and seat belts in cars, crash mats and cushioned surfaces in playgrounds and cycle helmets</i> | | | |

P6 Waves

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| 11. | Describe the effect of amplitude and frequency on a sound wave | | | |
| 12. | Construct ray diagrams to show the refraction of a wave at the boundary between two different mediums | | | |
| 13. | Describe the different types of seismic waves and how they can be used inform about the structure of the Earth | | | |
| 14. | Describe the uses of ultrasound | | | |
| 15. | Calculate the distance travelled by a wave using the speed of ultrasound equation | | | |

Visible Light

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| 16. | Describe the order of light in the visible light spectrum including their wavelengths in nm (red, blue & green) | | | |
| 17. | Describe the difference between specular and diffuse reflection | | | |
| 18. | Describe how colour filters work | | | |
| 19. | Describe the difference between transparent, translucent and opaque | | | |
| 20. | Describe why an opaque object has a specific colour, in terms of absorption/reflection of light | | | |
| 21. | Describe how a lens works to form an image | | | |
| 22. | Describe the difference between convex (converging) and concave (diverging) lenses | | | |
| 23. | Describe the difference between a real and virtual image | | | |
| 24. | Identify which type of images a convex and a concave lens produces | | | |
| 25. | Use and rearrange the equation to calculate magnification (GIVEN on the physics equations sheet) | | | |

Black Body Radiation

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| 26. | Describe the relationship between temperature and the amount of infrared radiation emitted in a given time | | | |
| 27. | Describe what a perfect black body is in terms of absorption and emission of radiation | | | |
| 28. | <i>Compare the rate of absorption and emission of a body at constant temperature</i> | | | |
| 29. | <i>Link radiation absorption and emission to the temperature of the Earth's surface and atmosphere</i> | | | |

P7 Magnetism & Electromagnetism

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| 30. | Interpret a diagram of an electromagnet to explain how it works. | | | |
| 31. | <i>Describe the factors that affect the size and direction of the force on the conductor</i> | | | |
| 32. | <i>Use and rearrange the equation to calculate magnetic flux density and identify the units (GIVEN on sheet)</i> | | | |
| 33. | <i>Describe what an electric motor is</i> | | | |
| 34. | <i>Explain how the force on the conductor in a magnetic field causes the rotation of a coil in an electric motor</i> | | | |
| 35. | <i>Explain how a moving coil loudspeaker and headphones work</i> | | | |
| 36. | <i>Describe what the generator effect is</i> | | | |
| 37. | <i>Identify the factors which effect the size and direction of the induced potential difference/induced current</i> | | | |

38.	<i>Explain how the generator effect is used in an alternator to generate ac and in a dynamo to generate dc</i>			
39.	<i>Draw & interpret graphs of potential difference generated in the coil against time</i>			
40.	<i>Explain how a moving-coil microphone is used to convert pressure variations in a sound wave into current in electrical circuits.</i>			
41.	<i>Describe and explain the structure of a basic transformer</i>			
42.	<i>Describe how a step-up and step-down transformer works, in terms of number of turns & potential difference in both primary and secondary coils</i>			
43.	<i>Use and rearrange the equation to calculate the potential difference or number of turns across a primary or secondary coil of a transformer (GIVEN on sheet)</i>			
44.	<i>Use and rearrange the equation to calculate the current and/or the potential difference across a primary or secondary coil of a transformer (GIVEN on sheet)</i>			
45.	<i>Link the power input, power output, current and potential difference to explain the benefits of power transmission at high potential differences</i>			
Space				
46.	Describe the life cycle of a star the same size as the Sun			
47.	Describe the life cycle of a star much more massive than the Sun			
48.	Describe what a nebula			
49.	Explain how a protostar is formed			
50.	Explain, in terms forces, why a main sequence star is in equilibrium.			
51.	Explain how fusion reactions lead to formation of new elements			
52.	Describe and explain red shift			
53.	Explain how red-shift is evidence for the Big Bang model			
Pressure				
54.	Describe how pressure in fluids causes a force normal (at right angles) to any surface			
55.	Recall, rearrange and use the equation that links pressure, force and area.			
56.	<i>Explain why the pressure increases with the height of a column and the density of a liquid</i>			
57.	<i>Explain what causes upthrust, in terms of pressure on a submerged object</i>			
58.	Use and rearrange the equation that links pressure, height of a column, density and gravitational field strength (GIVEN ON EQUATION SHEET)			
59.	Describe the factors which influence floating and sinking			
60.	Describe a simple model of the Earth's atmosphere and of atmospheric pressure			
61.	Explain why atmospheric pressure varies with height above a surface			