

Year 9 Science - Physics Outcomes

Basics of energy

1. What is meant by the terms: energy, transfer of energy, transformation of energy
2. What are the effects, uses and dangers of heat energy
3. Explain, using the kinetic theory of matter, what happens as a solid is heated (until it becomes a gas)

Heat

4. Explain, using the kinetic theory of matter, how heat is transferred by conduction
5. Explain, using the kinetic theory of matter, how heat is transferred by convection
6. Explain how heat is transferred by radiation
7. Describe how colour affects heat transfer
8. Explain what an insulating material does and give examples of where they are used
9. Explain what double glazing is and why it is useful
10. Explain the difference between heat and temperature
11. Explain how heat causes expansion of solids, liquids and gases
12. Explain how a thermometer works
13. Explain how a thermostat works

Electricity

14. List some of the effects of static electricity
15. Explain how electric charges cause these effects of static electricity
16. Explain the difference between an electrical conductor and insulator
17. Explain how to set up a simple torch circuit (include a diagram)
18. Draw a series circuit and a parallel circuit
19. Identify which lights would turn on and off in a variety of series and parallel circuits.
20. Briefly describe methods of generating an electric current (wet cell, dry cell, lead acid battery, magnets, heat, light)
21. List the purpose of the different components in an electric motor and generator
22. Give the units of measurement for electrical energy and perform a calculation to determine the cost of using electrical energy provided by a power company
23. Describe what voltage, current and resistance are and how they are related