Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
Chapter 1: Energy					
1.1	Potential energy	• Consider what happens when a spring is stretched. • Describe what is meant by gravitational potential energy. • Calculate the energy stored by an object raised above ground level.	4.1.1.1 4.1.1.2	Worksheet 1.1.1, 1.1.2 and 1.1.3; Practical sheets 1.1, Technician's notes 1.1	Quick starter Homework worksheet Homework quiz
1.2	Investigating kinetic energy	• Describe how the kinetic energy store of an object changes as its speed changes • Calculate kinetic energy. • Consider how energy is transferred.	4.1.1.1 4.1.1.2	Worksheet 1.2.1, 1.2.2 and 1.2.3; Practical sheet 1.2.1 and 1.2.2; Technician's notes 1.2	Quick starter Homework worksheet Homework quiz Slideshow
1.3	Work done and energy transfer	• Understand what is meant by work done. • Explain the relationship between work done and force applied. • Identify the transfers between energy stores when work is done against friction.	4.1.1.1 4.5.2	Worksheet 1.3.1, 1.3.2 and 1.3.3; Practical sheet 1.3.1 and 1.3.2; Technician's notes 1.3	Quick starter Homework worksheet Homework quiz Slideshow
1.4	Understanding power	• Define power. • Compare the rate of energy transfer by various machines and electrical appliances. • Calculate power.	4.1.1.4	Worksheet 1.4.1 and 1.4.2; Practical sheet 1.4.1 and 1.4.2; Technician's notes 1.4	Quick starter Homework worksheet Homework quiz
1.5	Specific heat capacity	• Understand how things heat up. • Find out about heating water. • Find out about specific heat capacity.	4.1.1.3	Worksheet 1.5.1, 1.5.2 and 1.5.3; Practical sheet 1.5; Technician's notes 1.5	Quick starter Homework worksheet Homework quiz

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
1.6	Required practical: Investigating specific heat capacity	• Use theories to develop a hypothesis. • Evaluate a method and suggest improvements. • Perform calculations to support conclusions.	4.1.1.3 Prac 1 Investigating specific heat capacity	Worksheet 1.6; Practical sheet 1.6; Technician's notes 1.6	Quick starter Homework worksheet Homework quiz
1.7	Dissipation of energy	• Explain ways of reducing unwanted energy transfer. • Describe what affects the rate of cooling of a building. • Understand that energy is dissipated.	4.1.2.1	Worksheet 1.7.1, 1.7.2 and 1.7.3; Practical sheet 1.7.1 and 1.7.2; Technician's notes 1.7	Quick starter Homework worksheet Homework quiz Slideshow
1.8	Energy efficiency	• Explain what is meant by energy efficiency. • Calculate the efficiency of energy transfers. • Find out about conservation of energy.	4.1.2.2	Worksheet 1.8.1 and 1.8.2; Practical sheet 1.8.1, 1.8.2, 1.8.3 and 1.8.4	Quick starter Homework worksheet Homework quiz
1.9	Using energy resources	• Describe the main energy sources available for use on Earth. • Distinguish between renewable and non-renewable sources. • Explain the ways in which the energy resources are used.	4.1.3	Worksheet 1.9; Practical sheet 1.9; Technician's notes 1.9	Quick starter Homework worksheet Homework quiz
1.10	Global energy supplies	• Analyse global trends in energy use. • Understand what the issues are when using energy resources.	4.1.3	Worksheet 1.10.1, 1.10.2 and 1.10.3; Practical sheet 1.10; Technician's notes 1.10	Quick starter Homework worksheet Homework quiz Slideshow

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
1.11	Key Concept: Energy transfer	• To be able to recognise objects with energy • To be able to recognise the different types of energy • To be able to describe energy transfers • To be able to use and describe the law of conservation of energy	4.1	Worksheet 1.11; Practical sheet 1.11.1 and 1.11.2; Technician's notes 1.11.1 and 1.11.2	Quick starter Homework worksheet Homework quiz Slideshow
1.12	Maths skills: Calculations using significant figures	• Substitute numerical values into equations and use appropriate units. • Change the subject of an equation. • Give an answer to an appropriate number of significant figures	4.1	Worksheets 1.12.1, 1.12.2 and 1.12.3, Technician's notes 1. 12	Quick starter Homework worksheet Homework quiz
1.13	Maths skills: Handling data	• Recognise the difference between mean, mode and median. • Explain the use of tables and frequency tables. • Explain when to use scatter diagrams, bar charts and histograms.	4.1.1.1 4.1.3	Worksheets 1.13.1, 1.13.2 and 1.13.3, Practical sheet 1.13, Technician's notes 1.13	Quick starter Homework worksheet Homework quiz
Chapter 2: Electricity					
2.1	Electric current	• Know circuit symbols. • Recall that current is a rate of flow of electric charge. • Recall that current (I) depends on resistance (R) and potential difference (V) • Explain how an electric current passes round a circuit.	4.2.1.1 4.2.1.2 4.2.1.3	Worksheets 2.1.1, 2.1.2 and 2,1.3	Quick starter Homework worksheet Homework quiz

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
2.2	Series and parallel circuits	• Recognise series and parallel circuits. • Describe the changes in the current and potential difference in series and parallel circuits.	4.2.2	Worksheets 2.2.1, 2.2.2 and 2.2.3	Quick starter Homework worksheet Homework quiz Slideshow
2.3	Investigating circuits	• Use series circuits to test components and make measurements. • Carry out calculations on series circuits.	4.2.2	Worksheets 2.3.1, 2.3.2 and 2.3.3; Practical sheet 2.3; Technician's notes 2.3	Quick starter Homework worksheet Homework quiz
2.4	Circuit components	• Set up a circuit to investigate resistance. • Investigate the changing resistance of a filament lamp. • Compare the properties of a resistor and filament lamp.	4.2.1.4	Practical sheet 2.4; Technician's notes 2.4	Quick starter Homework worksheet Homework quiz Slideshow
2.5	Required practical: Investigate, using circuit diagrams to construct circuits, the I-V characteristics of a filament lamp, a diode and a resistor at constant temperature	• Understand how an experiment can be designed to test an idea. • Evaluate how an experimental procedure can yield more accurate data. • Interpret and explain graphs using scientific ideas.	4.2.1.4	Practical sheet 2.5; Technician's notes 2.5	Quick starter Homework worksheet Homework quiz

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
2.6	Required practical: Use circuit diagrams to set up and check appropriate circuits to investigate the factors affecting the resistance of electrical circuits, including the length of a wire at constant temperature and combinations of resistors in series and parallel	• Use a circuit to determine resistance. • Gather valid data to use in calculations. • Apply the circuit to determine the resistance of combinations of components.	4.2.1.3 Prac 3 Investigate factors affecting resistance 4.2.1.4 Prac 4 Investigate the I–V characteristics of circuit elements	Worksheet 2.6; Practical sheet 2.6 and Technician's notes 2.6	Quick starter Homework worksheet Homework quiz
2.7	Control circuits	• Use a thermistor and light-dependent resistor (LDR). • Investigate the properties of thermistors, LDRs and diodes.	4.2.1.4	Worksheet 2.7; Practical sheet 2.7; Technician's notes 2.7	Quick starter Homework worksheet Homework quiz
2.8	Electricity in the home	• Recall that the domestic supply in the UK is a.c. at 50 Hz and about 230 V. • Describe the main features of live, neutral and earth wires.	4.2.3.1 4.2.3.2	Worksheets 2.8.1, 2.8.2 and 2.8.3	Quick starter Homework worksheet Homework quiz Slideshow
2.9	Transmitting electricity	• Describe how electricity is transmitted using the National Grid. • Explain why electrical power is transmitted at high potential differences. • Understand the role of transformers.	4.2.4.3	Worksheet 2.9	Quick starter Homework worksheet Homework quiz
2.10	Power and energy transfers	• Describe the energy transfers in different domestic appliances. • Describe power as a rate of energy transfer. • Calculate the energy transferred.	4.2.4.2	Worksheets 2.10.1, 2.10.2 and 2.10.3; Practical sheet 2.10; Technician's notes 2.10	Quick starter Homework worksheet Homework quiz

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
2.11	Calculating power	• Calculate power. • Use power equations to solve problems. • Consider power ratings and changes in stored energy.	4.2.4.1 4.1.1.1 4.1.1.2 4.1.1.3	Worksheets 2.11.1, 2.11.2 and 2.11.3; Practical sheet 2.11; Technician's notes 2.11	Quick starter Homework worksheet Homework quiz
2.12	Key concept: What's the difference between potential difference and current?	• Understand and be able to apply the concepts of current and potential difference. • Use these concepts to explain various situations.	4.2.1	Worksheet 2.12; Practical sheet 2.12.1, 2.12.2 and 2.12.3; Technician's notes 2.12	Quick starter Homework worksheet Homework quiz Slideshow
2.13	Maths skills: Using formulae and understanding graphs	• Recognise how algebraic equations define the relationships between variables. • Solve simple algebraic equations by substituting numerical values. • Describe relationships expressed in graphical form.	4.2	Worksheet 2.13.1, 2.13.2 and 2.13.3; Practical sheet 2.13; Technician's notes 2.13	Quick starter Homework worksheet Homework quiz
Chapter 3: Particle model of matter					
3.1	Density	• Use the particle model to explain the different states of matter and differences in density. • Calculate density.	4.3.1.1	Worksheet 3.1; Practical sheet 3.1; Technician's notes 3.1	Quick starter Homework worksheet Homework quiz Slideshow
3.2	Required practical: To investigate the densities of regular and irregular solid objects and liquids	• Interpret observations and data. • Use spatial models to solve problems. • Plan experiments and devise procedures. • Use an appropriate number of significant figures in measurements and calculations.	4.3.1.1 Prac 5 Determine the densities of regular and irregular solid objects	Worksheet 3.2; Practical sheet 3.2; Technician's notes 3.2	Quick starter Homework worksheet Homework quiz

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
3.3	Changes of state	• Describe how, when substances change state, mass is conserved. • Describe energy transfer in changes of state. • Explain changes of state in terms of particles.	4.3.1.3	Worksheet 3.3; Practical sheet 3.3; Technician's notes 3.3	Quick starter Homework worksheet Homework quiz Slideshow
3.4	Internal energy	• Describe the particle model of matter. • Understand what is meant by the internal energy of a system. • Describe the effect of heating on the energy stored within a system.	4.3.2.1	Worksheet 3.4; Practical sheet 3.4, 3.4.1, 3.4.2, 3.4.3, 3.4.4, 3.4.5, 3.4.6; Technician's notes 3.4	Quick starter Homework worksheet Homework quiz
3.5	Specific heat capacity	• Describe the effect of increasing the temperature of a system in terms of particles. • State the factors that are affected by an increase in temperature of a substance. • Explain specific heat capacity.	4.3.2.2	Worksheet 3.5; Practical sheet 3.5; Technician's notes 3.5	Quick starter Homework worksheet Homework quiz Slideshow
3.6	Latent heat	• Explain what is meant by latent heat. • Describe that when a change of state occurs it changes the energy stored but not the temperature. • Perform calculations involving specific latent heat.	4.3.2.3	Worksheet 3.6; Practical sheet 3.6; Technician's notes 3.6	Quick starter Homework worksheet Homework quiz Slideshow

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
3.7	Particle motion in gases	• Relate the temperature of a gas to the average kinetic energy of the particles. • Explain how a gas has a pressure. • Explain that changing the temperature of a gas held at constant volume changes its pressure.	4.3.3.1	Worksheet 3.7; Practical sheet 3.7; Technician's notes 3.7	Quick starter Homework worksheet Homework quiz
3.8	Key concept: Particle model and changes of state	• Use the particle model to explain states of matter. • Use ideas about energy and bonds to explain changes of state. • Explain the relationship between temperature and energy.	4.3	Worksheet 3.8; Practical sheet 3.8; Technician's notes 3.8	Quick starter Homework worksheet Homework quiz
3.9	Maths skills: Drawing and interpreting graphs	• Draw a graph of temperature against time. • Interpret a graph of temperature against time.	4.3.2.3	Worksheet 3.9; Practical sheet 3.9; Technician's notes 3.9	Quick starter Homework worksheet Homework quiz
Chapter 4: Atomic Structure					
4.1	Atomic Structure	• Describe the structure of the atom. • Use symbols to represent particles. • Describe ionisation.	4.4.1.1 4.4.1.2	Worksheets 4.1.1, 4.1.2 and 4.1.3	Quick starter Homework worksheet Homework quiz
4.2	Radioactive decay	• Describe radioactive decay. • Describe the types of nuclear radiation. • Understand the processes of alpha decay and beta decay.	4.4.2.1	Worksheets 4.2.1, 4.2.2 and 4.2.3	Quick starter Homework worksheet Homework quiz Slideshow

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
4.3	Properties of radiation and its hazards	• Describe radioactive contamination. • Give examples of how radioactive tracers can be used.	4.4.2.4	Worksheets 4.3.1, 4.3.2 and 4.3.3	Quick starter Homework worksheet Homework quiz
4.4	Nuclear equations	• Understand nuclear equations. • Write balanced nuclear equations.	4.4.2.4	Worksheets 4.4.1, 4.4.2 and 4.4.3	Quick starter Homework worksheet Homework quiz
4.5	Radioactive half-life	• Explain what is meant by radioactive half-life. • Calculate half-life. • Choose the best radioisotope for a task.	4.4.2.3	Worksheets 4.5.1, 4.5.2 and 4.5.3, Practical sheet 4.5, Technician's notes 4.5	Quick starter Homework worksheet Homework
4.6	Irradiation	• Explain what is meant by irradiation. • Understand the distinction between contamination and irradiation. • Appreciate the importance of communication between scientists.	4.4.2.4	Worksheets 4.6.1, 4.6.2 and 4.6.3	Quick starter Homework worksheet Homework quiz
4.7	Key concept: Developing ideas for the structure of the atom	• Understand how ideas about the structure of the atom have changed. • How evidence is used to test and improve models.	4.4.1.3	Worksheet 4.7.1, 4.7.2, 4.7.3 and 4.7.4	Quick starter Homework worksheet Homework quiz Slideshow
4.8	Maths skills: Using ratios and proportional reasoning	• Calculate radioactive half-life from a curve of best fit. • Calculate the net decline in radioactivity.	4.4.2.3		Quick starter Homework worksheet Homework quiz Slideshow
Chapter 5: Forces					
5.1	Forces	• Describe a force. • Recognise the difference between contact and non-contact forces. • State examples of scalar and vector quantities.	4.5.1.1 4.5.1.2 4.5.6.1.3	Worksheet 5.1.1, 5.1.2 and 5.1.3	Quick starter Homework worksheet Homework quiz

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
5.2	Speed	• Calculate speed using distance travelled divided by time taken. • Calculate speed from a distance–time graph. • Measure the gradient of a distance–time graph at any point.	4.5.6.1.1 4.5.6.1.2 4.5.6.1.4	Worksheet 5.2.1, 5.2.2 and 5.2.3; Practical sheet 5.2; Technician's notes 5.2	Quick starter Homework worksheet Homework quiz Slideshow
5.3	Acceleration	• Describe acceleration. • Calculate acceleration. • Explain motion in a circle.	4.5.6.1.3 4.5.6.1.5	Worksheets 5.3.1, 5.3.2 and 5.3.3	Quick starter Homework worksheet Homework quiz
5.4	Velocity–time graphs	• Draw velocity–time graphs. • Calculate acceleration using a velocity–time graph. • Calculate displacement using a velocity–time graph.	4.5.6.1.1 4.5.6.1.3 4.5.6.1.5	Worksheets 5.4.1, 5.4.2 and 5.4.3; Practical sheet 5.4; Technician's notes 5.4	Quick starter Homework worksheet Homework quiz Slideshow
5.5	Calculations of motion	• Describe uniform motion. • Use an equation for uniform motion. • Apply this equation to vertical motion.	4.5.6.1.5	Worksheets 5.5.1, 5.5.2, 5.5.3, 5.5.4, 5.5.5 and 5.5.6	Quick starter Homework worksheet Homework quiz
5.6	Heavy or massive?	• Identify the correct units for mass and weight. • Explain the difference between mass and weight. • Understand how weight is an effect of gravitational fields.	4.5.1.3	Worksheet 5.6.1, 5.6.2 and 5.6.3; Practical sheet 5.6; Technician's notes 5.6	Quick starter Homework worksheet Homework quiz
5.7	Forces and motion	• Understand what a force does. • Explain what happens to an object if all the forces acting on it cancel each other out. • Analyse how this applies to everyday situations.	4.5.6.1.5 4.5.6.2.1	Worksheets 5.7.1, 5.7.2 and 5.7.3, Practical sheet 5,7, Worksheet 5.7	Quick starter Homework worksheet Homework quiz

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
5.8	Resultant forces	• Calculate the resultant of a number of forces. • Draw free-body diagrams to find resultant forces. • Understand that a force can be resolved into two components acting at right angles to each other.	4.5.1.3 (centre of mass) 4.5.1.4	Practical sheets 5.8.1, 5.8.2 and 5.8.3; Technician's notes 5.8	Quick starter Homework worksheet Homework quiz
5.9	Forces and acceleration	• Explain what happens to the motion of an object when the resultant force is not zero. • Analyse situations in which a non-zero resultant force is acting. • Explain what inertia is.	4.5.6.2.1 (inertia) 4.5.6.2.2	Worksheets 5.9.1, 5.9.2 and 5.9.3, Technician's notes 5.9	Quick starter Homework worksheet Homework quiz
5.10	Required practical: Investigating the acceleration of an object	• Plan an investigation to explore an idea. • Analysing results to identify patterns and draw conclusions. • Compare results with scientific theory.	4.5.6.2.2 Prac 7 Investigate the effect of varying force or mass on acceleration	Practical sheet 5.10, Technician's notes 5.10	Quick starter Homework worksheet Homework quiz
5.11	Newton's third law	• Identify force pairs. • Understand and be able to apply Newton's third law.	4.5.6.2.3	Worksheets 5.11.1, 5.11.2 and 5.11.3	Quick starter Homework worksheet Homework quiz
5.12	Momentum	• Explain what is meant by momentum. • Total momentum is always concerned in collisions.	4.5.7.1 4.5.7.2 4.5.7.3	Worksheets 5.12.1, 5.12.2 and 5.12.3	Quick starter Homework worksheet Homework quiz
5.13	Keeping safe on the road	• Explain the factors that affect stopping distance. • Explain the dangers caused by large deceleration.	4.5.6.3.1 4.5.6.3.2 4.5.6.3.3 4.5.6.3.4	Worksheets 5.13.1, 5.13.2 and 5.13.3	Quick starter Homework worksheet Homework quiz

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
5.14	Forces and energy in springs	• Explain why you need two forces to stretch a spring. • Describe the difference between elastic and inelastic deformation. • Calculate extension, compression and elastic potential energy.	4.5.3	Worksheets 5.14.1 and 5.14.2, Practical sheet 5.14, Technician's notes 5.14	Quick starter Homework worksheet Homework quiz Slideshow
5.15	Required practical: Investigate the relationship between force and the extension of a spring	• Interpret readings to show patterns and trends. • Interpret graphs to form conclusions. • Apply the equation for a straight line to the graph.	4.5.3 Prac 6 Investigate the relationship between force and extension for a spring	Practical sheet 5.15, Technician's notes 5.15	Quick starter Homework worksheet Homework quiz
5.16	Key concept: Forces and acceleration	• Recognise examples of balanced and unbalanced forces. • Apply ideas about speed and acceleration to explain sensations of movement. • Apply ideas about inertia and circular motion to explain braking and cornering.	4.5	Worksheets 5.16.1, 5.16.2 and 5.16.3, Practical sheet 5.16, Technician's notes 5.16	Quick starter Homework worksheet Homework quiz Slideshow
5.17	Maths skills: Making estimates of calculations	• Estimate the results of simple calculations. • Round numbers to make an estimate. • Calculate order of magnitude.	4.5	Worksheets 5.17.1, 5.17.2 and 5.17.3	Quick starter Homework worksheet Homework quiz
Chapter 6: Waves					

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
6.1	Describing waves	• Describe wave motion. • Define wavelength and frequency. • Apply the relationship between wavelength, frequency and wave velocity.	4.6.1.2	Worksheets 6.6.1, 6.6.2, 6.6.3 and 6.6.4	Quick starter Homework worksheet Homework quiz
6.2	Transverse and longitudinal waves	• Compare the motion of transverse and longitudinal waves. • Explain why water waves are transverse waves. • Explain why sound waves are longitudinal waves.	4.6.1.1 4.6.1.2	Worksheets 6.2.1, 6.2.2 and 6.2.3; PowerPoint presentation	Quick starter Homework worksheet Homework quiz
6.3	Key concept: Transferring energy or information by waves	• To understand that all waves have common properties • To understand how waves can be used to carry information • To understand various applications of energy transfer by different types of electromagnetic waves	4.6	Worksheets 6.3.1, 6.3.2, 6.3.3, 6.3.4 and 6.3.5	Quick starter Homework worksheet Homework quiz
6.4	Measuring wave speeds	• Explain how the speed of sound in air can be measured. • Explain how the speed of water ripples can be measured.	4.6.1.2 4.6.1.5 (echo sounding)	Worksheets 6.4.1, 6.4.2, 6.4.3; Practical sheet 6.4; Technician's notes 6.4	Quick starter Homework worksheet Homework quiz Slideshow
6.5	Required practical: Measuring the wavelength, frequency and speed of waves in a ripple tank and waves in a solid	• Develop techniques for making observations of waves. • Select suitable apparatus to measure frequency and wavelength. • Use data to answer questions.	4.6.1.2 Prac 8 Measuring the wavelength, frequency and speed of waves in a ripple tank and waves in a solid	Practical sheet 6.5, Technician's notes 6.5	Quick starter Homework worksheet Homework quiz

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
6.6	Reflection and refraction of waves	• Describe reflection, transmission and absorption of waves. • Construct ray diagrams to illustrate reflection. • Construct ray diagrams to illustrate refraction.	4.6.1.3	Worksheets 6.6.1, 6.6.2 and 6.6.3; Practical sheets 6.6.1, 6.6.2 and 6.6.3; Technician's notes 6.6.1 and 6.6.2	Quick starter Homework worksheet Homework quiz
6.7	The electromagnetic spectrum	• Recall the similarities and differences between transverse and longitudinal waves. • Recognise that electromagnetic waves are transverse waves. • Describe the main groupings and wavelength ranges of the electromagnetic spectrum.	4.6.2.1	Worksheets 6.7.1, 6.7.2 and 6.7.3	Quick starter Homework worksheet Homework quiz
6.8	Reflection, wave velocity and wave fronts	• Explain reflection and refraction and how these may vary with wavelength. • Construct ray diagrams to illustrate refraction. • Use wave front diagrams to explain refraction in terms of the difference in velocity of the waves in different substances.	4.6.1.3 4.6.2.2	Worksheets 6.8.1, 6.8.2, 6.8.3; Practical sheet 6.8.1; Technician's notes 6.8.1	Quick starter Homework worksheet Homework quiz
6.9	Gamma rays and X-rays	• List the properties of gamma rays and X-rays. • Compare gamma rays and X-rays.	4.6.2.1 4.6.2.2 4.6.2.3 4.6.2.4	Worksheets 6.9.1, 6.9.2 and 6.9.3	Quick starter Homework worksheet Homework quiz
6.10	Ultraviolet and infrared radiation	• Describe the properties of ultraviolet and infrared radiation. • Describe some uses and hazards of ultraviolet radiation. • Describe some uses of infrared radiation.	4.6.2.1 4.6.2.2 4.6.2.3 4.6.2.4	Worksheet 6.10; Practical sheet 6.10; Technician's notes 6.10	Quick starter Homework worksheet Homework quiz Slideshow

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
6.11	Required practical: Investigate how the amount of infrared radiation absorbed or radiated by a surface depends on the nature of that surface	• Explain reasons for the equipment used to carry out an investigation. • Explain the rationale for carrying out an investigation. • Apply ideas from an investigation to a range of practical contexts.	4.6.2.2 Prac 10 Investigate how the amount of infrared radiation absorbed or radiated by a surface depends on the nature of that surface	Practical sheet 6.11; Technician's notes 6.11	Quick starter Homework worksheet Homework quiz Slideshow
6.12	Microwaves	• List some properties of microwaves. • Describe how microwaves are used for communications.	4.6.2.1 4.6.2.2 4.6.2.4	Worksheet 6.12	Quick starter Homework worksheet Homework quiz
6.13	Radio and microwave communication	• Describe how radio waves are used for television and radio communications. • Describe how microwaves are used in satellite communications. • Describe the reflection and refraction of radio waves.	4.6.2.1 4.6.2.2 4.6.2.3 4.6.2.4	Worksheets 6.13.1, 6.13.2 and 6.13.3	Quick starter Homework worksheet Homework quiz
6.14	Maths skills: Using and rearranging equations	• Select and apply the equations $T = 1/f$ and $v = f \lambda$ • Substitute numerical values into equations using appropriate units. • Change the subject of an equation.	4.6.1.2	Worksheet 6.14	Quick starter Homework worksheet Homework quiz
Chapter 7: Electromagnetism					
7.1	Magnetism and magnetic forces	• Explain what is meant by the poles of a magnet. • Plot the magnetic field around a bar magnet. • Describe magnetic materials and induced magnetism.	4.7.1.1 4.7.1.2	Worksheet 7.1; Practical sheet 7.1; Technician's notes 7.1; PowerPoint presentation	Quick starter Homework worksheet Homework quiz

Lesson number	Lesson title	Lesson objectives	AQA specification reference	Lesson resources (on CD ROM)	Collins Connect resources
7.2	Compasses and magnetic fields	• Describe the Earth's magnetic field. • Describe the magnetic effect of a current.	4.7.1.2 4.7.2.1	Worksheet 7.2; Practical sheet 7.2; Technician's notes 7.2; PowerPoint presentation	Quick starter Homework worksheet Homework quiz Slideshow
7.3	The magnetic effect of a solenoid	• Draw the magnetic field around a conducting wire and a solenoid. • Describe the force on a wire in a magnetic field.	4.7.2.1 4.7.2.2	Worksheets 7.3.1 and 7.3.2; Practical sheet 7.3; Technician's notes 7.3; PowerPoint presentation;	Quick starter Homework worksheet Homework quiz Slideshow
7.4	Calculating the force on a conductor	• Explain the meaning of magnetic flux density, *B*. • Calculate the force on a current-carrying conductor in a magnetic field.	4.7.2.2	Worksheets 7.4.1 and 7.4.2; Technician's notes 7.4; PowerPoint presentation	Quick starter Homework worksheet Homework quiz Slideshow
7.5	Electric motors	• List equipment that uses motors. • Describe how motors work. • Describe how to change the speed and direction of rotation of a motor.	4.7.2.3	Worksheets 7.5.1 and 7.5.2; Practical sheet 7.5; Technician's notes 7.5; PowerPoint presentation	Quick starter Homework worksheet Homework quiz
7.6	Key concept: The link between electricity and magnetism	• Explore how electricity and magnetism are connected. • Describe simple uses of electromagnets.	4.7	Worksheets 7.6.1 and 7.6.2; Practical sheet 7.6.1, 7.6.2, 7.6.3 and 7.6.4; Technician's notes 7.6; PowerPoint presentation	Quick starter Homework worksheet Homework quiz Slideshow
7.7	Maths skills: Rearranging equations	• Change the subject of an equation.	4.7.3.4 *(see also Lesson 2.13)*	Worksheets 7.7.1 and 7.7.2; PowerPoint presentation; cards for F = BIL, cards for transformers	Quick starter Homework worksheet Homework quiz
Assessments		End of chapter test Student Book End of chapter test Collins Connect End of teaching block test Collins Connect End of course test Collins Connect			