



# KS3 Science: Physics

## Contents

### Contents summary

<b>Mini quizzes:</b>	<b>37</b>
<b>Super quizzes:</b>	<b>4</b>
<b>Extension quizzes:</b>	<b>4</b>
<b>Skills quizzes:</b>	<b>6</b>
<b>TOTAL</b>	<b>51</b>

### What are MyWorks quizzes?

MyWorks quizzes are short individual learning tasks that can be set as homework or as a lesson task. There are four different types of quiz in KS3 Science.

#### Mini quizzes

Mini quizzes are short, versatile quizzes suitable for most abilities. Each quiz is worth 25 marks and takes around 10 minutes to complete. They cover small, bite-sized topics equivalent to around one lesson's work, and contain recap pages to remind students of the key points if they are struggling. Each quiz matches a small section from one of the Boardworks KS3 Science PowerPoint presentations, but can also be used independently of other products.

#### Super quizzes

Super quizzes are longer tests ideal for revision or assessment at the end of a larger unit of work. They are worth 50 marks and do not contain recap pages.

#### Extension quizzes

Extension quizzes are designed to stretch more able students. They either extend a previously covered topic by asking more difficult questions, or cover a new, but related topic. Questions are often more contextualised and require a greater degree of precision in finding the correct answer. The quizzes are out of 25 marks and include recap pages to explain where students may have gone wrong.

#### Skills quizzes

Skills quizzes are designed to cover important elements of the How Science Works requirements at KS3. The quizzes focus on three key areas: practical skills, data analysis and discoveries and society. Topics covered include planning and carrying out a fair, accurate and reliable experiment, representing results, drawing conclusions and the impact of science on society. The quizzes are out of 30 marks and contain recap pages to reinforce understanding.



# KS3 Science: Physics

## Contents

Mini Quizzes	<b>Quiz</b>	<b>Contents</b>	<b>Relevant Boardworks PowerPoint</b>
	<b>What are circuits? mini quiz</b>	<ul style="list-style-type: none"> <li>• Benjamin Franklin’s early experiments with electricity</li> <li>• What a circuit is</li> <li>• How to draw a circuit</li> <li>• Circuit components</li> </ul>	<i>Current and Voltage</i>
	<b>Series circuits mini quiz</b>	<ul style="list-style-type: none"> <li>• What series circuits are</li> <li>• Investigating current in a series circuit</li> <li>• Investigating voltage in a series circuit</li> <li>• Changing the number of cells in a series circuit</li> </ul>	<i>Current and Voltage</i>
	<b>Parallel circuits mini quiz</b>	<ul style="list-style-type: none"> <li>• What parallel circuits are</li> <li>• Current and voltage in a parallel circuit</li> </ul>	<i>Current and Voltage</i>
	<b>Using electricity mini quiz</b>	<ul style="list-style-type: none"> <li>• Types of energy in a circuit</li> <li>• Outputs of everyday devices</li> <li>• Useful and wasteful energy outputs</li> </ul>	<i>Using Electricity</i>
	<b>Energy efficiency mini quiz</b>	<ul style="list-style-type: none"> <li>• What energy efficiency is</li> <li>• How to calculate energy efficiency</li> <li>• Ways of reducing electricity usage</li> </ul>	<i>Using Electricity</i>
	<b>What is energy? mini quiz</b>	<ul style="list-style-type: none"> <li>• What energy is</li> <li>• Types of energy</li> <li>• Input and output energies</li> </ul>	<i>Energy Resources</i>
	<b>Fossil fuels mini quiz</b>	<ul style="list-style-type: none"> <li>• The Sun as an energy source</li> <li>• Non-renewable energy sources</li> <li>• Coal formation and extraction</li> <li>• Oil and gas formation and extraction</li> </ul>	<i>Energy Resources</i>
	<b>Using fossil fuels mini quiz</b>	<ul style="list-style-type: none"> <li>• How electricity is produced in power stations using fossil fuels</li> <li>• The environmental consequences of burning fossil fuels</li> </ul>	<i>Energy Resources</i>
	<b>Alternative energy resources mini quiz</b>	<ul style="list-style-type: none"> <li>• The need for renewable energy resources</li> <li>• Types of renewable energy resources</li> <li>• Advantages and disadvantages of different energy resources</li> </ul>	<i>Energy Resources</i>

Mini Quizzes	<b>Quiz</b>	<b>Contents</b>	<b>Relevant Boardworks PowerPoint</b>
	<b>Light and seeing mini quiz</b>	<ul style="list-style-type: none"> <li>• What light is</li> <li>• Which materials let light through</li> <li>• How we see</li> <li>• How the eye works</li> </ul>	<i>Light</i>
	<b>Reflection mini quiz</b>	<ul style="list-style-type: none"> <li>• Why different surfaces have different reflective qualities</li> <li>• How reflection works</li> </ul>	<i>Light</i>
	<b>Refraction mini quiz</b>	<ul style="list-style-type: none"> <li>• What refraction is</li> <li>• How refraction works</li> <li>• The effects of refraction</li> </ul>	<i>Light</i>
	<b>Colour mini quiz</b>	<ul style="list-style-type: none"> <li>• The visible light spectrum</li> <li>• How we see different colours</li> <li>• Filtering of primary and secondary colours</li> <li>• Seeing colours in coloured light</li> </ul>	<i>Light</i>
	<b>What is sound? mini quiz</b>	<ul style="list-style-type: none"> <li>• What sound is</li> <li>• How sound travels</li> <li>• Frequency, amplitude, wavelength and pitch</li> </ul>	<i>Sound and Hearing</i>
	<b>The speed of sound mini quiz</b>	<ul style="list-style-type: none"> <li>• The speed of sound in different materials</li> <li>• Breaking the sound barrier</li> <li>• Reflected sound</li> <li>• Calculating speed</li> </ul>	<i>Sound and Hearing</i>
	<b>The ear and hearing mini quiz</b>	<ul style="list-style-type: none"> <li>• How the human ear works</li> <li>• The hearing ranges of people and animals</li> <li>• The issue of noise pollution</li> </ul>	<i>Sound and Hearing</i>
	<b>Heat and temperature mini quiz</b>	<ul style="list-style-type: none"> <li>• Heat</li> <li>• Temperature</li> <li>• Types of heat transfer</li> <li>• Heat transfer and the particle model</li> </ul>	<i>Heating and Cooling</i>
	<b>Conduction and convection mini quiz</b>	<ul style="list-style-type: none"> <li>• What conduction is</li> <li>• Conduction through different materials</li> <li>• How convection works</li> </ul>	<i>Heating and Cooling</i>
<b>Infra-red radiation mini quiz</b>	<ul style="list-style-type: none"> <li>• What infra-red radiation is</li> <li>• Which surfaces absorb radiation well</li> <li>• Uses of radiation</li> </ul>	<i>Heating and Cooling</i>	

Mini Quizzes	<b>Quiz</b>	<b>Contents</b>	<b>Relevant Boardworks PowerPoint</b>
	<b>Changing states mini quiz</b>	<ul style="list-style-type: none"> <li>• The effect of temperature on substance state</li> <li>• Heating and cooling curves</li> <li>• Evaporation</li> </ul>	<i>Heating and Cooling</i>
	<b>Heat loss and insulation mini quiz</b>	<ul style="list-style-type: none"> <li>• How heat is lost from houses</li> <li>• Methods of minimising heat loss from a house</li> </ul>	<i>Heating and Cooling</i>
	<b>Magnetism mini quiz</b>	<ul style="list-style-type: none"> <li>• The history of magnetism</li> <li>• Magnetic materials</li> <li>• Magnetic fields</li> </ul>	<i>Magnets and Electromagnets</i>
	<b>Electromagnets and their uses mini quiz</b>	<ul style="list-style-type: none"> <li>• How current affects magnetism</li> <li>• What an electromagnet is</li> <li>• Uses of electromagnets</li> </ul>	<i>Magnets and Electromagnets</i>
	<b>What are forces? mini quiz</b>	<ul style="list-style-type: none"> <li>• What a force is</li> <li>• Types of forces</li> <li>• Balanced and unbalanced forces</li> <li>• Effects of forces</li> </ul>	<i>Forces and Gravity</i>
	<b>Calculating resultant forces mini quiz</b>	<ul style="list-style-type: none"> <li>• What resultant forces are</li> <li>• Balanced and unbalanced forces</li> <li>• Working out the resultant force</li> </ul>	<i>Forces and Gravity</i>
	<b>Gravity mini quiz</b>	<ul style="list-style-type: none"> <li>• What gravity is</li> <li>• Gravity on different planets</li> <li>• Mass and weight</li> </ul>	<i>Forces and Gravity</i>
	<b>Friction and upthrust mini quiz</b>	<ul style="list-style-type: none"> <li>• What friction is</li> <li>• Air resistance and drag</li> <li>• The effects of upthrust</li> </ul>	<i>Forces and Gravity</i>
	<b>Pressure mini quiz</b>	<ul style="list-style-type: none"> <li>• What pressure is</li> <li>• High pressure and low pressure</li> <li>• How to calculate pressure</li> <li>• Using high and low pressure in everyday life</li> </ul>	<i>Pressure and Moments</i>
<b>Pressure in liquids mini quiz</b>	<ul style="list-style-type: none"> <li>• Pressure in liquids</li> <li>• How hydraulic systems work</li> <li>• The hydraulic car braking system</li> <li>• How to calculate pressure in hydraulic systems</li> <li>• Pressure in gases</li> </ul>	<i>Pressure and Moments</i>	

<b>Mini Quizzes</b>	<b>Quiz</b>	<b>Contents</b>	<b>Relevant Boardworks PowerPoint</b>
	<b>Moments mini quiz</b>	<ul style="list-style-type: none"> <li>• What a moment is</li> <li>• Increasing moments</li> <li>• Moment calculations</li> </ul>	<i>Pressure and Moments</i>
	<b>Distance, speed and time mini quiz</b>	<ul style="list-style-type: none"> <li>• Words and units</li> <li>• Distance, speed and time calculations</li> <li>• Changing units in these calculations</li> </ul>	<i>Speed</i>
	<b>Graphing speed mini quiz</b>	<ul style="list-style-type: none"> <li>• Interpreting distance-time graphs</li> <li>• Interpreting speed-time graphs</li> <li>• Calculating speed using graphs</li> <li>• Calculating average speed</li> </ul>	<i>Speed</i>
	<b>Days, years and seasons mini quiz</b>	<ul style="list-style-type: none"> <li>• The rotation of the Earth</li> <li>• Time differences</li> <li>• The path of the Sun in the sky</li> <li>• How seasons occur</li> </ul>	<i>Space</i>
	<b>Earth, Moon and Sun mini quiz</b>	<ul style="list-style-type: none"> <li>• Phases of the Moon</li> <li>• Solar and lunar eclipses</li> </ul>	<i>Space</i>
	<b>Artificial satellites mini quiz</b>	<ul style="list-style-type: none"> <li>• Natural and artificial satellites</li> <li>• What orbits are</li> <li>• Geostationary and polar orbits</li> <li>• The Hubble Space Telescope</li> </ul>	<i>Space</i>
	<b>The Solar System mini quiz</b>	<ul style="list-style-type: none"> <li>• What the Solar System is</li> <li>• The history of the Solar System</li> <li>• Ideas about the Solar System</li> </ul>	<i>Space</i>
<b>Eco-housing mini quiz</b>	<ul style="list-style-type: none"> <li>• The different features of eco-housing</li> <li>• Thermal imaging</li> <li>• The benefits of eco-housing</li> </ul>	<i>Physics Around Us</i>	



<b>Super Quizzes</b>	<b>Quiz</b>	<b>Contents</b>	<b>Relevant Boardworks PowerPoint</b>
	<b>Electricity and magnetism super quiz</b>	<ul style="list-style-type: none"> <li>• Current and voltage</li> <li>• Series and parallel circuits</li> <li>• Magnets and electromagnets</li> </ul>	<b><i>Current and Voltage, Magnets and Electromagnets</i></b>
	<b>Generating and using electricity super quiz</b>	<ul style="list-style-type: none"> <li>• Methods of generating electricity</li> <li>• Renewable and non-renewable energy sources</li> <li>• Output energies</li> <li>• Energy efficiency</li> </ul>	<b><i>Using Electricity, Energy Resources</i></b>
	<b>Light and sound super quiz</b>	<ul style="list-style-type: none"> <li>• What light and sound are</li> <li>• Reflection, refraction and dispersion</li> <li>• How we see and hear</li> </ul>	<b><i>Light, Sound and Hearing</i></b>
	<b>Forces, pressure and speed super quiz</b>	<ul style="list-style-type: none"> <li>• Calculating forces, moments and speed</li> <li>• Friction and air resistance</li> <li>• Pressure</li> </ul>	<b><i>Forces and Gravity, Pressure and Moments, Speed</i></b>



<b>Skills Quizzes</b>	<b>Quiz</b>	<b>Contents</b>
	<b>Physics practical skills quiz 1</b>	<ul style="list-style-type: none"> <li>• Measuring instruments and their units</li> <li>• Controlling variables</li> <li>• Carrying out experiments</li> </ul>
	<b>Physics practical skills quiz 2</b>	<ul style="list-style-type: none"> <li>• Planning experiments</li> <li>• Controlling variables</li> <li>• Choosing the correct apparatus</li> </ul>
	<b>Physics analysing experiments skills quiz</b>	<ul style="list-style-type: none"> <li>• Evaluating scientific methods</li> <li>• Interpreting the results of experiments</li> </ul>
	<b>Physics calculations and formulae skills quiz</b>	<ul style="list-style-type: none"> <li>• Understanding and rearranging formulae</li> <li>• Using formulae in calculations</li> </ul>
	<b>Physics discoveries and society skills quiz 1</b>	<ul style="list-style-type: none"> <li>• Discoveries and inventions in physics</li> <li>• The effect of developments in physics on society</li> </ul>
	<b>Physics discoveries and society skills quiz 2</b>	<ul style="list-style-type: none"> <li>• Uses of the electromagnetic spectrum</li> <li>• Science in design and engineering</li> <li>• Energy issues</li> </ul>



<b>Extension Quizzes</b>	<b>Quiz</b>	<b>Contents</b>
	<b>Forces and motion extension quiz</b>	<ul style="list-style-type: none"> <li>• Distance-time graphs</li> <li>• Speed-time graphs</li> <li>• The forces acting on moving and stationary objects</li> <li>• Calculations based on the extensions of springs</li> </ul>
	<b>Electricity and magnetism extension quiz</b>	<ul style="list-style-type: none"> <li>• Voltage, current and resistance in circuits</li> <li>• The thermistor and the light-dependent resistor</li> <li>• Simple devices using electromagnets</li> </ul>
	<b>Energy and heat extension quiz</b>	<ul style="list-style-type: none"> <li>• Energy efficiency</li> <li>• Types of energy transfer</li> <li>• Energy resources</li> </ul>
	<b>Light and sound extension quiz</b>	<ul style="list-style-type: none"> <li>• Refraction of light</li> <li>• Seeing colours using coloured lights and filters</li> <li>• Comparing sound waves</li> <li>• Using ultrasound</li> </ul>