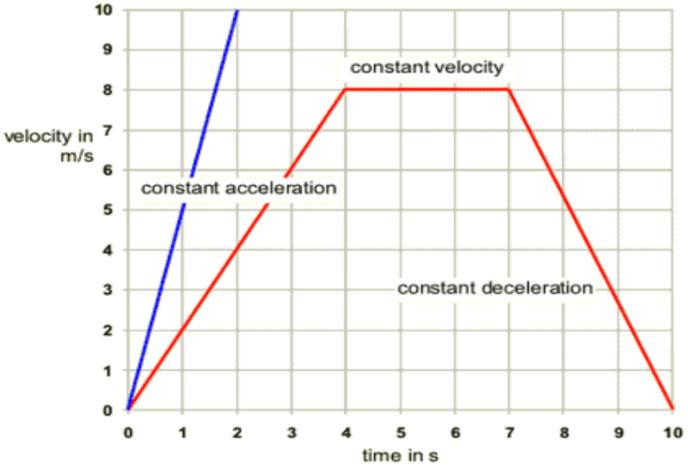


<p>Explain how objects are charged using static electricity?</p>	<p>What type of objects can be charged through friction?</p>	<p>What particles move, and what charge do they have?</p>	<p>If one object has a static charge of -7, what will the other object have a charge of? Why?</p>
<p>What happens with opposite charges? What happens with like charges?</p>	<p>Describe the structure of an atom, including masses, charges and positions of particles. (4)</p>	<p>Describe what happens to the electrons when a rod and cloth are charged. (4)</p>	<p>Describe why a plane can become charged with static electricity while flying. (4)</p>
<p>Describe how lightning takes place.</p>	<p>Describe why a balloon can be attracted to a wall.</p> <p>Describe how a comb can pick up small pieces of paper.</p>	<p>What is earthing?</p>	<p>Describe two situations where earthing has important safety benefits.</p>
<p>Define current. What particles move when current is moving? What charge do they have? What is charge?</p>	<p>Explain how electrostatics can be used for paint spraying. Explain how electrostatics can be used for insecticide spraying.</p>	<p>What is Direct Current? Where do we get it from? What is Alternating Current? Where do we get it from?</p>	<p>Give the equations for how charge relates to current and time, including symbols and units.</p>

<p>Draw a parallel circuit in which you could measure current and voltage. Explain how the meters are placed within the circuit.</p>	<p>What happens to current at junctions in parallel circuits?</p>	<p>How could you calculate current through a parallel circuit</p>	<p>What is potential difference? How do we measure it?</p> <p>What is the unit?</p>
<p>What is the relationship between potential difference, current and resistance? Include units and symbols.</p>	<p>What is resistance? What causes it? What happens in a resistor?</p>	<p>How does current vary with potential difference in a filament lamp? Draw a graph.</p>	<p>How does current vary with potential difference in a diode? Draw a graph.</p>
<p>How does current vary with potential difference in a fixed resistor? Draw a graph.</p>	<p>How does resistance of a Light Dependent Resistor vary with light intensity?</p>	<p>How does resistance of a Thermistor vary with light intensity?</p>	<p>List the advantages and disadvantages of the heating effect of electric current. Give three objects where this effect is a positive, and three where it is a negative.</p>
<p>What is electrical power?</p>	<p>Give an equation relating power to current and voltage. Give symbols and formulae.</p>	<p>Give an equation relating energy to current and potential difference. Give symbols and formulae.</p>	

Edexcel Additional Science revision P2 –Topic 3: Motion and Forces.

<p>What is the difference between Vector and Scalar quantities?</p>	<p>Define: displacement, velocity, acceleration and force.</p>	<p>What is the equation for speed? Units?</p>	<p>What is the difference between a velocity time graph and a displacement/time graph.</p>
<p>Sketch a velocity/time graph and a displacement/time graph.</p>	<p>Sketch a displacement/time graph.</p>	<p>Draw a free body diagram showing the forces acting on a stationary car. The weight of the car is 10,000N.</p>	<p>What is the equation for acceleration?</p> <p>What is the unit of acceleration? Why?</p>
<p>Draw a free body diagram showing the car accelerating. The driving force is now 2000N.</p>	<p>Draw a free body diagram showing the forces acting on the car at a constant speed of 10m/s. The driving force is 1000N, show the forces that slow it down.</p>	<p>Calculate the acceleration of the three different line on the graph. Calculate the distance travelled.</p>	 <p>The graph plots velocity in m/s on the y-axis (0 to 10) against time in s on the x-axis (0 to 10). A blue line starts at (0,0) and goes to (2,10), labeled 'constant acceleration'. A red line starts at (2,0), goes to (4,8), stays at 8 m/s until 7s (labeled 'constant velocity'), and then goes to (10,0) (labeled 'constant deceleration').</p>
<ol style="list-style-type: none"> 1. When the forces are balanced on an object, what happens to its speed? 2. When the forces are unbalanced on an object what happens to its speed? 3. If the resultant force on an object is zero, what happens to its speed? 4. What happens to an object when the resultant force is not zero? 	<p>Acceleration of an object depends on resultant force and mass. Give an equation (with formula and units) that relates these together.</p> <p>What happens to accelerating objects in a vacuum? What is the difference in air?</p>	<ol style="list-style-type: none"> 1. What is the relationship between weight, mass and gravitational field strength? 2. What unit do we measure gravitational field strength in? What is the strength on earth? 	<ol style="list-style-type: none"> 1. As speed of a falling object increases, what happens to the air resistance? 2. What is terminal velocity? When does it occur? Describe the forces on an object travelling at terminal velocity.

Edexcel Additional Science revision P2 – Topic 4: Momentum, Energy, Work and Power.

What is stopping distance? How do we calculate it?	Explain how stopping distance changes when speed increase. Why?	What factors affect the friction of a block sliding across a surface?	What factors can affect the rate of change of momentum in a car crash or an object falling to the ground?
What happens to momentum in a collision.	What are safety features in cars and how do they prevent damage?	Explain the formula $F = (mv - mu)/t$ to calculate change in momentum of a system	Explain what work done is and how we calculate it. Give the formula and symbols. Explain what unit it is measured in.
Define a Watt. Give a formula for calculation.	What is gravitational potential energy? Give a formula and units.	What is kinetic energy? Give a formula and units.	What happens to energy when it is converted from one form to another?
Describe the energy changes that take place when a ball is dropped and bounces repeatedly on the ground.	Describe the energy changes that take place when a person is sitting on a swing	State 6 factors that affect the stopping distance of a vehicle.	

Edexcel Additional Science revision P2 – Topic 5: Nuclear Fission and Nuclear Fusion

<p>How do atoms become ions?</p>	<p>What is ionising radiation?</p>	<p>What are the three types of ionising radiation?</p> <p>Describe their speeds, masses, ionising power and penetrating power.</p>	<p>What types of atoms emit radiation? Is the process ordered or random?</p>
<p>Describe nuclear fission and how it is used to produce energy.</p>	<p>Why is nuclear fission described as a chain reaction? Explain why we use moderators and control rods in nuclear power stations, and how they control the process.</p>	<p>How is the thermal energy in the process of nuclear fission converted in to electrical energy?</p>	<p>Describe nuclear fusion.</p>
<p>Explain why it cannot happen at low temperatures. Explain why it is difficult to get nuclear fusion to happen on earth.</p>	<p>What is 'cold fusion'? Is it an accepted theory?</p>	<p>Compare and contrast nuclear fission and nuclear fusion</p>	

Edexcel Additional Science revision P2 – Topic 6: Advantages and Disadvantages of using radioactive materials.

<p>How did we initially discover the hazards associated with radioactive sources? How have our ideas about these changed over time?</p>	<p>What is background radiation? What causes regional variations in background radiation in the UK?</p> <p>What are the causes of background radiation from earth and space?</p>	<p>Explain how radiation is used in:</p> <p>Smoke alarms – which type of radiation is used and why?</p> <p>Irradiating food – which type of radiation is used and why?</p> <p>Sterilising Equipment – which type of radiation is used and why?</p> <p>Measuring paper and metal thickness – which type of radiation is used and why?</p> <p>Diagnosing and treating cancer – which type of radiation is used and why?</p>	<p>What happens to the radioactivity of a source over time?</p>
<p>What unit do we measure activity of a radioactive source in?</p>	<p>What is half life?</p> <p>What is the unit of half life</p>	<p>What are the advantages and disadvantages of using nuclear power to generate electricity?</p>	<p>What are the dangers of working with radiation? What are the long term problems with the storage and disposal of nuclear waste?</p>