

YEAR 7	Bronze	Bronze/Silver	Gold	Platinum	Platinum +
Cells, Organs and Systems	<p>SK - relate drawings to observations made using a microscope</p> <p>KK - recognise that all organisms are made from cells and name some parts of a cell</p>	<p>SK - relate drawings to observations made using a microscope</p> <p>KK - recognise that all organisms are made from cells and name some parts of a cell</p>	<p>SK -describe some earlier ideas about the structure of living things and relate these to evidence from microscope observations; make observations using a microscope and record them in simple drawings;</p> <p>KK - identify and name features of cells and describe some differences between plant and animal cells;</p>	<p>SK -describe some earlier ideas about the structure of living things and relate these to evidence from microscope observations; make observations using a microscope and record them in simple drawings;</p> <p>KK - identify and name features of cells and describe some differences between plant and animal cells; describe how cells are grouped to form tissues</p>	<p>SK - explain how evidence from microscope observations changed ideas about the structure of living things; estimate sizes of specimens viewed under the microscope</p> <p>KK - identify and name features of cells and describe some differences between plant and animal cells; describe how cells are grouped to form tissues; recognise that viruses are not cells and describe how some cells in an organism are specialised to carry out particular functions</p> <p>Organ failure- what can be done if an organ fails (transplant/ machines/dialysis to complete processes)</p>

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Particles and Solutions	<p><u>Particles</u> SK describe observations and try to offer explanations for them KK classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p><u>Solutions</u> SK - make measurements of temperature and mass; produce simple line graphs of results and point out patterns in these; separate a sample of salt from rock salt KK - name some soluble and insoluble solids; describe how pure water can be obtained from sea water and how different colours can be separated from some inks</p>	<p><u>Particles</u> SK describe observations and try to offer explanations for them KK classify materials as solid, liquid or gas and recognise that materials are made of particles</p> <p><u>Solutions</u> SK - make measurements of temperature and mass; produce simple line graphs of results and point out patterns in these; separate a sample of salt from rock salt KK - name some soluble and insoluble solids; describe how pure water can be obtained from sea water and how different colours can be separated from some inks</p>	<p><u>Particles</u> SK describe and explain observations, using the particle model KK classify materials as solid, liquid or gas; explain their classification of some 'difficult' materials; describe materials as being made of particles and describe the movement and arrangement of these, and begin to use the particle model to explain phenomena, <i>eg the mixing of liquids, the expansion of a metal bar</i></p> <p><u>Solutions</u> SK -make measurements of temperature and mass; present experimental results as line graphs, pointing out patterns; describe observations and explain these; identify patterns in data about solubility, and make predictions from these; interpret data from chromatograms; use</p>	<p><u>Particles</u> SK compare explanations of a phenomenon and evaluate whether evidence supports or refutes them KK use the particle model to explain a range of phenomena</p> <p><u>Solutions</u> SK - make measurements of temperature and mass; interpret and explain the significance of data from chromatograms; evaluate their method for obtaining pure salt in terms of the mass obtained KK - use the particle model to explain a range of phenomena</p>	<p><u>Particles</u> SK compare explanations of a phenomenon and evaluate whether evidence supports or refutes them KK use the particle model to explain a range of phenomena</p> <p><u>Solutions</u> SK - make measurements of temperature and mass; interpret and explain the significance of data from chromatograms; evaluate their method for obtaining pure salt in terms of the mass obtained KK - use the particle model to explain a range of phenomena</p>

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			<p>scientific knowledge and understanding to plan how to separate pure salt from rock salt KK - classify some solids as soluble or insoluble and explain the meaning of the term 'saturated solution'; describe how mixtures can be separated by distillation and chromatography and begin to use the particle model to explain what happens when a solid dissolves in water, explaining why mass is conserved</p>		

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Forces and Motion	<p>SK - make predictions about upthrust, test these and identify patterns in their results; with help plot graphs of their results; make relevant observations using appropriate equipment</p> <p>KK - identify forces, eg friction, upthrust and weight; recognise that friction opposes motion, upthrust pushes upwards and weight pulls downwards; compare speeds qualitatively</p>	<p>SK - make predictions about upthrust, test these and identify patterns in their results; with help plot graphs of their results; make relevant observations using appropriate equipment</p> <p>KK - identify forces, eg friction, upthrust and weight; recognise that friction opposes motion, upthrust pushes upwards and weight pulls downwards; compare speeds qualitatively</p>	<p>SK - make predictions about upthrust, test these and identify patterns in their results; with help plot graphs of their results; make relevant observations using appropriate equipment</p> <p>KK - identify forces, eg friction, upthrust and weight; recognise that friction opposes motion, upthrust pushes upwards and weight pulls downwards; compare speeds qualitatively</p>	<p>SK -make predictions about upthrust, test these and relate their findings to scientific knowledge; make suitably precise observations, including repeats to check reliability, and use these to plot graphs; investigate friction, identifying and controlling key factors</p> <p>KK - identify directions in which forces act and describe situations in which forces are balanced; distinguish between mass and weight, giving examples; describe some ways of reducing friction and some situations in which friction is useful; describe what is meant by speed</p>	<p>SK -explain how they made a fair comparison in their investigation of friction; interpret their results on floating, using knowledge of balanced forces to explain conclusions; explain how the scales they chose and lines they drew on graphs enabled them to show data effectively</p> <p>KK - show how forces can combine to give a resultant effect which depends on both the sizes and directions of the forces; describe how weight is caused by gravity and how gravity is different on the Earth and on the Moon; explain contact friction in simple terms</p>

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<p>Acids, Alkalis and Indicators</p>	<p>SK - obtain and present qualitative results; describe some hazards of acids and alkalis; explain how they made a fair comparison in their investigation into antacids</p> <p>KK - name some common acids and alkalis; state some everyday uses of acids and alkalis and classify solutions using indicators</p>	<p>SK - obtain and present qualitative results; describe some hazards of acids and alkalis; explain how they made a fair comparison in their investigation into antacids</p> <p>KK - name some common acids and alkalis; state some everyday uses of acids and alkalis and classify solutions using indicators</p>	<p>SK -obtain and present qualitative results in a way which helps to show patterns; describe how to deal with hazards relating to acids and alkalis; suggest how to investigate a question about antacids, planning and making a fair comparison</p> <p>KK - name some common acids and alkalis and classify solutions as acidic, alkaline or neutral, using indicators and pH values; describe what happens to the pH of a solution when it is neutralised; describe some everyday uses of acids, alkalis and neutralisation</p>	<p>SK - explain how their conclusions match the evidence obtained and suggest ways in which the data collected could be improved</p> <p>KK - explain how a neutral solution can be obtained and relate the pH value of an acid or alkali to its hazards and corrosiveness</p>	<p>SK - explain how their conclusions match the evidence obtained and suggest ways in which the data collected could be improved</p> <p>KK - explain how a neutral solution can be obtained and relate the pH value of an acid or alkali to its hazards and corrosiveness</p>

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Plants	<p>SK - suggest how to control variables identified for them in an investigation of photosynthesis, making appropriate observations and measurements and producing a graph</p> <p>KK - identify carbon dioxide from the air and water as the raw materials for photosynthesis; recognise that plants take in water through their roots and that photosynthesis takes place in leaves</p>	<p>SK - suggest how to control variables identified for them in an investigation of photosynthesis, making appropriate observations and measurements and producing a graph</p> <p>KK - identify carbon dioxide from the air and water as the raw materials for photosynthesis; recognise that plants take in water through their roots and that photosynthesis takes place in leaves</p>	<p>SK - suggest how to control variables identified for them in an investigation of photosynthesis, making appropriate observations and measurements and producing a graph</p> <p>KK - identify carbon dioxide from the air and water as the raw materials for photosynthesis; recognise that plants take in water through their roots and that photosynthesis takes place in leaves</p>	<p>SK - identify variables relevant to an investigation of photosynthesis and suggest how these might be controlled; make observations and measurements using an appropriate technique, and use measurements to produce a graph; explain patterns in graphs using scientific knowledge and understanding</p> <p>KK - identify carbon dioxide from the air and water as the raw materials, and light as the energy source, for photosynthesis; explain photosynthesis as the source of biomass and represent photosynthesis by a word equation; describe how leaves are adapted for photosynthesis and how roots are adapted to take in water; distinguish between photosynthesis and respiration in plants</p>	<p>SK - relate findings about the production of oxygen in photosynthesis to wider environmental issues, <i>eg seasonal changes</i></p> <p>KK - describe how cells in the leaf and root are adapted for photosynthesis and for taking in water; represent photosynthesis as a symbol equation; describe the relationship between photosynthesis and respiration in plants</p>

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Electricity	<p>SK - explore circuits using appropriate equipment; identify patterns in their results and use these to describe the behaviour of simple circuits; identify and report on hazards associated with electricity</p> <p>KK - construct simple electrical circuits and represent these diagrammatically; give examples of useful circuits; state safety rules for use of electricity</p>	<p>SK - explore circuits using appropriate equipment; identify patterns in their results and use these to describe the behaviour of simple circuits; identify and report on hazards associated with electricity</p> <p>KK - construct simple electrical circuits and represent these diagrammatically; give examples of useful circuits; state safety rules for use of electricity</p>	<p>SK - explore circuits using appropriate equipment; identify patterns in their results and use these to describe the behaviour of simple circuits; identify and report on hazards associated with electricity</p> <p>KK - construct simple electrical circuits and represent these diagrammatically; give examples of useful circuits; state safety rules for use of electricity</p>	<p>SK - select and use appropriate equipment to investigate circuits which include cells, bulbs and switches; measure current; identify patterns in their results and draw conclusions about series and parallel circuits; describe hazards associated with electricity and how to deal with them</p> <p>KK - construct a range of working electrical circuits and represent these in circuit diagrams; state that electric current is the same at all points in a series circuit and divides along the branches of a parallel circuit; distinguish between electric current and energy transfer in a circuit; compare and contrast the advantages of series and parallel circuits in use, <i>eg fuses, ring main</i></p>	<p>SK - plan and carry out a systematic investigation of series and parallel circuits to obtain sufficient evidence to draw conclusions; give examples of the development of scientific ideas about electricity, <i>eg Galvani and Volta on electric current</i>, and explain how electricity can be hazardous to humans</p> <p>KK - relate voltage of cells and batteries qualitatively to energy transfer in circuits; use a flow model to explain the difference between electric current and energy transfer; apply the idea that nerves are electrical conductors to explain electrical hazards</p>