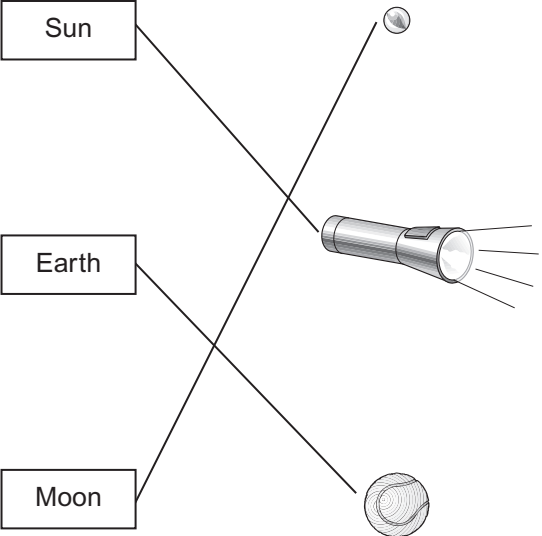


Tier 3–6	Q No 1					
Part	Mark	Answer	Accept	Additional guidance		
a i 3/2g	1	* 52	accept '40 + 12'			
a ii 3/2a	1	* liquid <i>into a solid</i>		both states are required for the mark		
b 3/1d	1	any one from * iron * steel	accept 'cobalt' or 'nickel'			
c i 4/1d	1	* <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>N</td><td>S</td></tr></table>	N	S		both poles are required for the mark
N	S					
c ii 4/1d	1	* it would be repelled	accept 'pushed away' accept 'it would fall down or drop'	'they would not attract' is insufficient		
Total	5					

Tier 3–6	Q No 2											
Part	Mark	Answer	Accept									
<p>a 4/4b 4/4d</p>	<p>2</p>	<p>* </p>	<p>Additional guidance</p> <p>if all three lines are correct, award two marks if one or two lines are correct, award one mark if more than one line is drawn from any part of the solar system, award no credit for that part</p>									
<p>b 4/4b</p>	<p>2</p>	<p>* <table border="1" data-bbox="360 953 1234 1016"> <tr> <td>Sun</td> <td><i>Mercury</i></td> <td><i>Venus</i></td> <td>Earth</td> <td><i>Mars</i></td> <td><i>Jupiter</i></td> <td><i>Saturn</i></td> <td><i>Uranus</i></td> <td>Neptune</td> </tr> </table></p>	Sun	<i>Mercury</i>	<i>Venus</i>	Earth	<i>Mars</i>	<i>Jupiter</i>	<i>Saturn</i>	<i>Uranus</i>	Neptune	<p>award one mark for the Sun in the correct position award one mark for both Earth and Neptune in the correct positions</p>
Sun	<i>Mercury</i>	<i>Venus</i>	Earth	<i>Mars</i>	<i>Jupiter</i>	<i>Saturn</i>	<i>Uranus</i>	Neptune				

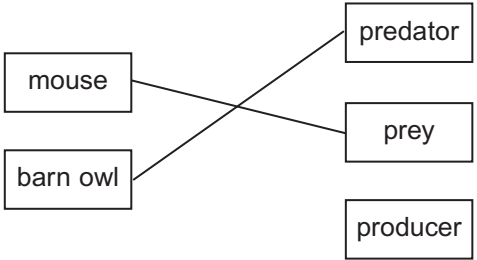
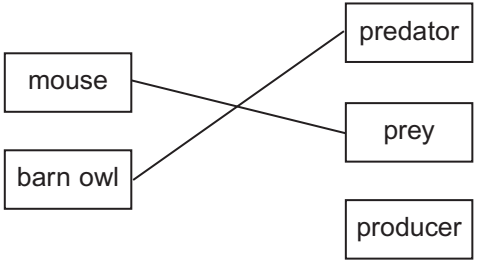
Tier 3–6	Q No 2			
Part	Mark	Answer	Accept	Additional guidance
c i 4/4e	1	any one from * weather forecasting * communications * telescopes * global positioning system * TV * spying * internet	accept 'weather' accept 'phone' or 'fax' accept 'GPS' accept 'taking photographs'	
c ii 4/4c	1	* gravity ✓		if more than one box is ticked, award no mark
Total	6			

Tier 3–6	Q No 3		
Part	Mark	Answer	Additional guidance
a 1/2e	1	any one from * stopwatch * stopclock accept 'timer'	'watch' is insufficient 'clock' is insufficient 'seconds' or 's' are insufficient
b 1/2g BS/2a	1	* s ✓	if more than one box is ticked, award no mark
c 1/2d	1	* the type of trainer ✓	if more than one box is ticked, award no mark
d 1/2d	2	* the angle of the ramp ✓ * the length of the ramp ✓ * the surface of the ramp ✓	if all three answers are correct, award two marks if one or two answers are correct, award one mark if more than three boxes are ticked, deduct one mark for each incorrect tick minimum mark zero
Total	5		

Tier 3–6	Q No 4			
Part	Mark	Answer	Accept	Additional guidance
a i 4/2c	1	* an arrow labelled R, to the right, drawn on the rope	accept a labelled arrow to the right, drawn parallel to the rope	
a ii 4/2b	1	* an arrow labelled G, vertically downwards		
b 4/2d	1	any one from * snow is smoother * snow is more slippery	accept 'snow is slippery' accept 'concrete or the path is rough'	'snow is soft' or 'concrete is hard' are insufficient
Total	3			

Tier 3–6	Q No 5			
Part	Mark	Answer	Additional guidance	
a 3/1d	1	* base of a saucepan	It does not rust.	if more than one line is drawn from an object, award no mark for that object
	1	* coin	It is a good conductor of electricity.	
	1	* wires in a cable	It is a good conductor of heat.	
			It is not magnetic.	
b 3/1d	1	* Brass does not bend as easily as copper. ✓		if more than two boxes are ticked, deduct one mark for each incorrect tick minimum mark zero
	1	* Brass is harder than copper. ✓		
c 3/1a	1	* liquid zinc and solid copper ✓		if more than one box is ticked, award no mark
Total	6			

Tier 3–6	Q No 6			
Part	Mark	Answer	Accept	Additional guidance
a i 3/1h	1	* filtration ✓		if more than one box is ticked, award no mark
a ii 3/1h	1	* A: sand	accept 'residue'	
a iii 3/1h	1	* B: filter paper	accept 'paper' or 'filter'	<i>do not accept</i> 'funnel' or 'filter funnel'
b i 1/2k	1	* 100		
b ii 3/2c	1	* it had evaporated	accept 'it went into the air'	<i>do not accept</i> 'it disappeared'
b iii 3/1h	1	* salt	accept 'sodium chloride' accept 'salts' or 'minerals' or 'crystals'	
Total	6			

Tier 3–6	Q No 7			
Part	Mark	Answer	Accept	Additional guidance
a i 2/5c	2	any two from * large or sharp claws or nails or talons * large or strong or sharp beak * large eyes or eyes that face forward * wings for hovering	accept 'curved beak' accept 'it can see in the dark' accept 'it can hover' accept 'it can fly silently'	'claws' or 'nails' or 'talons' are insufficient 'beak' is insufficient 'eyes' is insufficient 'it has wings' or 'it flies' are insufficient
a ii 2/5e	1 1	*  * 		if more than one line is drawn from an animal, award no mark for that animal
b 2/5c	1	any one from * to keep warm * for insulation	accept 'protection from cold' accept 'for flight'	<i>do not accept</i> 'to keep the cold out'
c i 2/5d	1	any one from * fewer places to nest * fewer places to lay eggs * they lay fewer eggs * less food for owls * owls can be frightened by traffic or people * loss of habitat	accept 'nowhere to nest' or 'no home' accept 'nowhere to lay eggs' accept 'they cannot lay eggs' accept 'fewer mice' or 'no mice' or 'no food' accept 'it is too noisy'	
c ii 2/5d	1	* they catch or kill mice	accept 'to stop mice eating the crops' accept 'to keep mice away'	'to protect the crop or grain' is insufficient
Total	7			

Tier 3–6	Q No 8			
Part	Mark	Answer	Accept	Additional guidance
a i 2/5a BS/1a	1	any one from * it protects them from frost * the soil is kept moist * it protects them against birds or insects or animals	accept 'protects them from the cold or weather' accept 'it keeps them warm' accept 'it warms the soil' accept 'they do not dry out' accept 'it stops animals digging them up'	'protects them' is insufficient
	1	* light		answers may be in either order
	1 1	* air * water		
b 2/5a	1	any one from * so (potato) plants can grow * it prevents pollution * it protects the environment * it will not get tangled with machinery or animals * it does not have to be picked up	accept 'more space to grow'	'more space' is insufficient
c i 2/5e c ii 2/5a 2/5d	1	* ladybirds eat aphids	accept 'they eat them'	'they kill them' is insufficient
	1	* insecticide ✓		if more than one box is ticked, award no mark
Total	7			

Tier 3–6 5–7	Q No 9 1			
Part	Mark	Answer	Accept	Additional guidance
a 4/5e	1	any one from * she is not moving or falling * she is standing still	accept 'she has not dived or jumped' accept 'she is still'	award a mark for an answer which implies she is not moving
b i 4/5g	1	* 8		
b ii 4/5g	1	any one from * the total energy is the same * the gravitational potential and the kinetic energy add up to 8	accept 'they are the same' accept 'they all add up to 8'	
c i 4/2b	1	* gravity	accept 'gravitational' or 'gravitational pull' accept 'weight'	<i>do not accept 'mass'</i>
c ii 4/2a	1	any one from * the distance between stages or drawings increases * she falls further each time	accept 'they are further apart' accept 'the positions are further apart' accept 'the arrows get longer' accept 'her kinetic energy increases'	'by the position of her body' is insufficient
d 4/2d	1	any one from * friction * drag	accept 'water resistance' accept 'upthrust'	<i>do not accept 'air resistance'</i> 'resistance' is insufficient
Total	6			

Tier 3–6 5–7	Q No 10 2		
Part	Mark	Answer	Additional guidance
a 4/1a	1	* E	
b 4/1a	1 1	* * * * *	award one mark for each correct row
c 4/1b	1	* 0.8 0.8 ✓	if more than one box is ticked, award no mark
Total	4		

Tier 3–6 5–7	Q No 11 3	Part	Mark	Answer	Accept	Additional guidance
		a 1/2k	1	any one from * the clock works * the time on the clock	accept 'when the light goes on' accept 'it shows 12.30'	'it is making electricity' is insufficient
		b 1/2e	1	* voltmeter		'multimeter' is insufficient
		c 1/2d	1	any one from * the fruit or lemon * condition of metal * temperature	accept 'the size or surface area of the metal' accept 'the distance between them' accept 'the amount of metal' accept 'how far they push them in'	<i>do not accept</i> 'the acid'
		d 1/2k	1	* copper <i>and</i> magnesium	accept 'most reactive with least reactive'	answers may be in either order both metals are required for the mark
		e 1/2k	1	any one from * no difference in reactivity * they produce zero voltage	accept 'there would be no reaction between them' accept 'it would not work' accept 'there would be no difference'	
		Total	5			

Tier 3–6 5–7	Q No 12 4	Part	Mark	Answer	Accept	Additional guidance
		a i 3/3d	1	* a number less than 7		
		a ii 3/3e	1	* it would turn milky or cloudy	accept 'white or chalky'	
		b 3/3h	1	* magnesium sulphate		
		c i 3/3d	1	* a number less than 7		
		c ii 3/2f	1	* lava		do not accept 'magma'
		Total	5			

Tier 3–6 5–7	Q No 13 5																	
Part	Mark	Answer	Accept	Additional guidance														
d 1/2k	2	* true false cannot tell				if all four rows are correct, award two marks if two or three rows are correct, award one mark if more than one box is ticked on any row, award no credit for that row												
		<table border="1"> <tbody> <tr> <td>✓</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>✓</td> <td></td> <td></td> </tr> <tr> <td></td> <td>✓</td> <td></td> </tr> </tbody> </table>	✓					✓	✓				✓					
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Total	6																	

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Tier 3–6 5–7	Q No 14 6			
Part	Mark	Answer	Accept	Additional guidance
a 3/1e	1	any one from * the mixture glowed * there was a colour change * a black solid formed * a new substance has been formed	accept 'the temperature increased' accept 'a compound or iron sulphide was formed' accept 'there is no longer any sulphur or yellow or iron or grey'	
b 3/1d 3/1e	2	* <i>iron</i> : metallic element * <i>sulphur</i> : non-metallic element * <i>iron sulphide</i> : compound	accept 'metal' accept 'non-metal'	if all three answers are correct, award two marks if two answers are correct, award one mark
c 3/1d	1	* <i>sulphur</i> : no <i>iron</i> : yes		both answers are required for the mark
d i 3/3h	1	* zinc sulphide		<i>do not accept</i> 'zinc sulphate'
d ii 3/1e 3/2i	1	* sulphur dioxide	accept 'sulphur oxide' or 'sulphur trioxide'	
Total	6			

Tier 3–6 5–7	Q No 15 7	Part	Mark	Answer	Accept	Additional guidance
		a i 2/2a 2/2d	1	* fat		
		a ii 2/2a 2/2d	1	* carbohydrate		
		a iii 2/2a 2/2d	1	* protein		
		b 1/2k	1	* 200 g ✓		if more than one box is ticked, award no mark
		c 2/2a	1	any one from * vitamins * water * fibre	accept a named vitamin accept 'roughage' accept 'minerals' or a named mineral	<i>do not accept</i> 'calcium'

Tier 3–6 5–7	Q No 15 7			
Part	Mark	Answer	Accept	Additional guidance
d i 2/2d	1	* 1100	accept a number from 1000 to 1300	
d ii 2/2d	1	any one from * to make milk * milk contains calcium * a breast-fed baby needs calcium for growth or for bones or teeth * she has to have enough calcium for herself and the baby	accept 'the baby needs calcium' accept 'to feed herself and the baby' accept 'the baby needs 600 and she needs 500' accept 'this is recommended for mother and baby'	'to feed the baby' is insufficient
Total	7			

Tier 3–6 5–7	Q No 16 8			
Part	Mark	Answer	Accept	Additional guidance
a 2/1b	1 1	* chloroplast any one from * photosynthesis * absorbs or traps light	accept 'chlorophyll' accept 'it produces food or glucose or sugar or carbohydrate'	'contains chlorophyll' is insufficient
b 2/1b	1 1	* nucleus * it controls the cell	accept 'it tells the cell what to do' accept 'it transfers or contains genetic information or chromosomes'	'brain of the cell' is insufficient <i>do not accept</i> 'for reproduction' 'it controls substances entering or leaving the cell' is insufficient
c 2/1b	1	any two from * A * B * D	accept 'chloroplast' or 'chlorophyll' accept 'vacuole' accept 'cell wall'	
d 2/1b	1	* it has chloroplasts or chlorophyll	accept 'it is green'	'it is a different shape' is insufficient 'it does not have a hair' is insufficient
Total	6			