



**Cambridge Assessment**  
International Education

# **Cambridge Primary Progression Test**

## **Science mark scheme**

### **Stage 5**

## General guidelines on marking

Many descriptive answers can be expressed in a variety of ways. Professional judgement can be used in these cases, providing it matches the marking points and further information in the mark scheme.

Answers may have words spelt incorrectly. Credit is normally given for a phonetically correct answer, unless the word has a scientifically different meaning. For example, where the answer should be antennae, credit will be given for antena but not for anthen (too close to anther).

Only the science is being assessed so answers do not need to be grammatically correct.

Significant figures will be indicated in the question or in the mark scheme.

Unless specified all marking points are independent.

### Annotations and abbreviations

/ OR	alternate responses for the same marking point
( ) brackets	the words or units in brackets do not need to be stated, for example, (recycles or releases or provides) minerals = minerals scores the mark
<b>Accept</b>	an acceptable response
<b>Do not accept</b>	indicates an incorrect response that would contradict another otherwise correct alternative
<b>Ignore</b>	indicates an irrelevant answer that is not creditworthy. Full marks can still be achieved even with answers that are ignored.
ecf	error carried forward; marks are awarded if an incorrect response has been carried forward from earlier working, provided the subsequent working is correct
ora	or reverse argument; for example, as mass increases, volume increases could be written as mass decreases, volume decreases

## Stage 5 Paper 1 Mark scheme

Question	1		
Part	Mark	Answer	Further Information
(a)	2	bright petals <input checked="" type="checkbox"/> green leaves <input type="checkbox"/> seed pod <input type="checkbox"/> small petals <input type="checkbox"/> sweet smell <input checked="" type="checkbox"/>	<b>each</b> correct tick = 1 mark <b>three</b> ticks, <b>two</b> correct = 1 mark <b>two</b> incorrect ticks = 0 marks
(b)	1	the insect drinks the pollen the insect eats the pollen the insect holds the pollen in its hands <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;"> <b>the pollen sticks to the insect</b> </div>	more than one answer circled = 0 marks <b>Accept</b> any indication of the correct answer, e.g. ticking or underlining but circling takes precedence
<b>Total</b>	<b>3</b>		

Question	2		
Part	Mark	Answer	Further Information
(a)	1	The Earth spins on its axis once every <b>day</b> .	
(b)	1	The Earth orbits the Sun once every <b>year</b> .	
<b>Total</b>	<b>2</b>		

Question	3		
Part	Mark	Answer	Further Information
(a)	1	condensation	
(b)	1	evaporation	<b>Do not accept</b> boiling
(c)	1	the salt does not evaporate	<b>Accept</b> (when sea water evaporates) the salt is left behind
(d)	2	the temperature is low the water freezes / the rain freezes	<b>Accept</b> it is colder <b>Accept</b> the temperature is less than 0°C = 2 marks
<b>Total</b>	<b>5</b>		

Question	4														
Part	Mark	Answer	Further Information												
(a)	2	<table border="1"> <thead> <tr> <th>transparent</th> <th>translucent</th> <th>opaque</th> </tr> </thead> <tbody> <tr> <td>plastic</td> <td>(cotton)</td> <td>metal</td> </tr> <tr> <td>glass</td> <td></td> <td>wood</td> </tr> <tr> <td>water</td> <td></td> <td></td> </tr> </tbody> </table>	transparent	translucent	opaque	plastic	(cotton)	metal	glass		wood	water			<b>five</b> correct = 2 marks <b>three</b> or <b>four</b> correct = 1 mark <b>one</b> or <b>two</b> correct = 0 marks <b>Accept</b> partial names, e.g. lens / door
transparent	translucent	opaque													
plastic	(cotton)	metal													
glass		wood													
water															
(b)	1	<table border="0"> <thead> <tr> <th>word</th> <th></th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>transparent</td> <td>—</td> <td>allows no light to pass through</td> </tr> <tr> <td>translucent</td> <td>—</td> <td>allows some light to pass through</td> </tr> <tr> <td>opaque</td> <td>—</td> <td>allows all light to pass through</td> </tr> </tbody> </table>	word		meaning	transparent	—	allows no light to pass through	translucent	—	allows some light to pass through	opaque	—	allows all light to pass through	all <b>three</b> lines correct = 1 mark  more than one line from a word or to a meaning = 0 marks
word		meaning													
transparent	—	allows no light to pass through													
translucent	—	allows some light to pass through													
opaque	—	allows all light to pass through													
<b>Total</b>	<b>3</b>														

Question	5		
Part	Mark	Answer	Further Information
(a)	1	to get enough results / the seeds may not germinate	<b>Accept</b> increased reliability <b>Accept</b> seeds may rot
(b)	1	(idea that) seed opens up / splits / shoot seen / root seen	
(c)	1	time (taken to germinate) / how many seeds have germinated	<b>Accept</b> any other reasonable measurement, e.g. size of shoot after 5 days
<b>Total</b>	<b>3</b>		

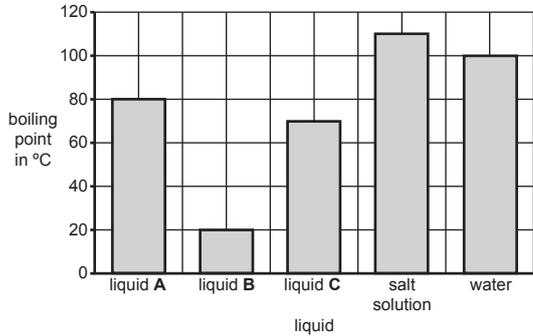
Question	6		
Part	Mark	Answer	Further Information
(a)	2	the temperature at which a solid changes into a liquid	<b>each point = 1 mark</b>
(b)	1	evaporation	<b>Do not accept</b> boiling
(c)	1	(provide a) cool (surface) / lower the temperature	<b>Accept</b> condense it
<b>Total</b>	<b>4</b>		

Question	7		
Part	Mark	Answer	Further Information
(a)	1	change in length / change in size / change in position	<b>Accept</b> any stated change, e.g. gets longer / gets smaller / moves to the left <b>Accept</b> moved <b>Accept</b> change in greyness
(b)	1	do the (same investigation) on different days	<b>Do not accept</b> repeat without reference to different days
(c)	1	always use Blessy / (make Blessy stand) in the same pose / (make Blessy stand) in the same place / do it at the same time each day	<b>Accept</b> any reasonable idea of a fair test condition
<b>Total</b>	<b>3</b>		

Question	8		
Part	Mark	Answer	Further Information
	3	<p>blackberry</p> <p>coconut</p> <p>violet</p> <p>sycamore</p> <p>burst open</p> <p>carried in the wind</p> <p>eaten by birds</p> <p>float on water</p> <p>attach to animal</p>	<p><b>four</b> correct = 3 marks</p> <p><b>two</b> or <b>three</b> correct = 2 marks</p> <p><b>one</b> correct = 1 mark</p> <p>more than one line from seed is incorrect for that seed</p>
<b>Total</b>	<b>3</b>		

Question	9		
Part	Mark	Answer	Further Information
(a)	1	<p>mass of dissolved solid</p> <p>room temperature</p> <p>time of heating</p> <p><b>volume of tap water</b></p>	<p>more than one answer circled = 0 marks</p> <p><b>Accept</b> any indication of the correct answer, e.g. ticking or underlining but circling takes precedence</p>
(b)	1	can check results / more reliable / can evaluate results / can find anomalous results	<b>Ignore</b> results will be more accurate
<b>Total</b>	<b>2</b>		

Question	10									
Part	Mark	Answer	Further Information							
	4	<table border="1"> <thead> <tr> <th>female part</th> <th>male part</th> <th>not a male part and not a female part</th> </tr> </thead> <tbody> <tr> <td>carpel ovary stigma</td> <td>anther stamen</td> <td>petal</td> </tr> </tbody> </table>	female part	male part	not a male part and not a female part	carpel ovary stigma	anther stamen	petal	<p>all <b>six</b> correct = 4 marks</p> <p><b>four</b> or <b>five</b> correct = 3 marks</p> <p><b>two</b> or <b>three</b> correct = 2 marks</p> <p><b>one</b> correct = 1 mark</p>	
female part	male part	not a male part and not a female part								
carpel ovary stigma	anther stamen	petal								
<b>Total</b>	<b>4</b>									

Question	11		
Part	Mark	Answer	Further Information
(a)	1	(idea that) it increases	
(b)	3	 <p>boiling point in °C</p> <p>liquid A   liquid B   liquid C   salt solution   water</p> <p>liquid</p>	<p><b>three</b> bars drawn correctly = 2 marks</p> <p><b>one</b> or <b>two</b> bars drawn correctly = 1 mark</p> <p>all bars <b>labelled</b> correctly = 1 mark</p>
(c)	1	liquid B	
<b>Total</b>	<b>5</b>		

Question	12		
Part	Mark	Answer	Further Information
(a)	1	<p>Mia and Safia</p> <p>Mia, Pierre and Safia</p> <p><b>Pierre</b></p> <p>Safia</p>	<p>more than one answer circled = 0 marks</p> <p><b>Accept</b> any indication of the correct answer, e.g. ticking or underlining but circling takes precedence</p>
(b)	1	<p>Mia and Safia</p> <p>Mia, Pierre and Safia</p> <p>Pierre</p> <p><b>Safia</b></p>	<p>more than one answer circled = 0 marks</p> <p><b>Accept</b> any indication of the correct answer, e.g. ticking or underlining but circling takes precedence</p>
<b>Total</b>	<b>2</b>		

Question	13						
Part	Mark	Answer	Further Information				
(a)	1	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>letter</td></tr> <tr><td><b>C</b></td></tr> <tr><td><b>A</b></td></tr> <tr><td><b>B</b></td></tr> </table>	letter	<b>C</b>	<b>A</b>	<b>B</b>	all correct for mark
letter							
<b>C</b>							
<b>A</b>							
<b>B</b>							
(b)	1	light / sun					
(c)	1	had no light	<b>Accept</b> were left in dark  <b>Accept</b> had no sun				
<b>Total</b>	<b>3</b>						

Question	14		
Part	Mark	Answer	Further Information
(a)	1	<p style="text-align: center;"><b>brightness of light</b></p> <p style="text-align: center;">colour of light</p> <p style="text-align: center;">direction of light</p> <p style="text-align: center;">reflection of light</p> <p style="text-align: center;">source of light</p>	more than one answer circled = 0 marks  <b>Accept</b> any indication of the correct answer, e.g. ticking or underlining but circling takes precedence
(b)	2	(idea that) reading decreases / reading goes down / reading is less than 100  (idea that) less light goes into the sensor / light intensity decreases / brightness decreases	<b>Accept</b> (idea of) light spreads out
<b>Total</b>	<b>3</b>		

Question	15		
Part	Mark	Answer	Further Information
	2	<b>any two from</b> more room to grow get more light get more water get more minerals less competition	
<b>Total</b>	<b>2</b>		

Question	16		
Part	Mark	Answer	Further Information
(a)	1	reflects / changes direction	<b>Ignore</b> bounces
(b)	2	The ray of light from mirror <b>B</b> enters Jamila's <b>eye(s)</b> .  Jamila <b>sees</b> the burning candle.	<b>each</b> correct sentence = 1 mark
<b>Total</b>	<b>3</b>		

## Stage 5 Paper 2 Mark scheme

Question	1		
Part	Mark	Answer	Further Information
	1	night / dark / middle of the night / no light	
<b>Total</b>	<b>1</b>		

Question	2		
Part	Mark	Answer	Further Information
	2	the temperature at which a liquid changes into a gas	each point = 1 mark
<b>Total</b>	<b>2</b>		

Question	3		
Part	Mark	Answer	Further Information
(a)	1	excretion growth nutrition <b>reproduction</b> respiration	more than one answer circled = 0 marks  <b>Accept</b> any indication of the correct answer, e.g. ticking or underlining but circling takes precedence
(b)	1	<b>B</b>	<b>Accept</b> any indication of the correct answer, e.g. ticking or underlining but answer line takes precedence
(c)	2	<b>A</b> <b>C</b>	either order <b>each</b> correct answer = 1 mark  if <b>three</b> letters selected <b>two</b> correct = 1 mark  <b>two</b> incorrect = 0 marks  <b>Accept</b> any indication of the correct answer, e.g. ticking or underlining but answer line takes precedence
<b>Total</b>	<b>4</b>		

Question	4										
Part	Mark	Answer	Further Information								
(a)	1	<p><b>any one from</b></p> <p>use same flashlight for each material</p> <p>use same intensity of light for each material</p> <p>hold flashlight at same distance from each material</p> <p>use same thickness for each material</p>	<p><b>Accept</b> use a fully charged flashlight</p> <p><b>Accept</b> same colour light</p>								
(b)	1	<table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">material</th> <th style="text-align: left;">mark</th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black; padding: 2px;">black card</td> <td style="border: 1px solid black; padding: 2px;">9</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">blue cloth</td> <td style="border: 1px solid black; padding: 2px;">1</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">clear glass</td> <td style="border: 1px solid black; padding: 2px;">7</td> </tr> </tbody> </table>	material	mark	black card	9	blue cloth	1	clear glass	7	<p>all <b>three</b> lines correct = 1 mark</p> <p>more than one line from a box = 0 marks</p>
material	mark										
black card	9										
blue cloth	1										
clear glass	7										
(c)	2	<p><b>any two from</b></p> <p>some materials are transparent <b>and</b> some materials are opaque</p> <p>white card is opaque</p> <p>green plastic is transparent</p>	<p><b>Ignore</b> some materials let light through <b>and</b> some materials do not let light through</p> <p><b>Accept</b> white card does not let (much) light through</p> <p><b>Accept</b> green plastic lets (some) light through</p> <p><b>Accept</b> green plastic is translucent</p>								
<b>Total</b>	<b>4</b>										

Question	5		
Part	Mark	Answer	Further Information
(a)	1	20 (cm <sup>3</sup> )	
(b)	1	25 (°C)	
(c)	1	12 (g)	
(d)	1	no  (idea that) mass with pure water is less than with sea water  <b>or</b>  after 5 days 20g of water has evaporated from pure water	no unqualified = 0 marks yes = 0 marks
<b>Total</b>	<b>4</b>		

Question	6		
Part	Mark	Answer	Further Information
(a)	1	mirror / glass / shiny (material) / reflective (material)	<b>Accept</b> foil / tin foil / aluminium foil
(b)	2	The light from the flashlight is <b>reflected</b> by the material.  When it does this the light changes <b>direction</b> .	<b>each</b> correct sentence = 1 mark
<b>Total</b>	<b>3</b>		

Question	7		
Part	Mark	Answer	Further Information
	2	condensation  (idea that) the water vapour is cooled down	
<b>Total</b>	<b>2</b>		

Question	8		
Part	Mark	Answer	Further Information
(a)	1	a flashlight a lamp <div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;">a telescope</div> his eyes his spectacles	more than one answer circled = 0 marks  <b>Accept</b> any indication of the correct answer, e.g. ticking or underlining but circling takes precedence
(b)	2	Buzz Aldrin travelled to the Moon by <b>space craft / space rocket</b> .  He wears special clothes because <b>there is no air (or oxygen) on the Moon / it is cold on the Moon</b> .	<b>each</b> correct sentence = 1 mark  <b>Accept</b> named rocket, e.g. Apollo  <b>Accept</b> named problems, e.g. low gravity / radiation  <b>Accept</b> he needs protection (from the conditions)
<b>Total</b>	<b>3</b>		

Question	9		
Part	Mark	Answer	Further Information
(a)	2	(yes)  boiling point of water is 100 °C  boiling point of water is above 36 °C / boiling point of water is higher than the melting point of butter	no = no marks  <b>each</b> point = 1 mark
(b)	1	36 °C	
<b>Total</b>	<b>3</b>		

Question	10		
Part	Mark	Answer	Further Information
(a)	3	<b>any three from</b> (idea that) pollen is used / pollination  (idea that) the ovum (is involved)  (pollen) fertilises (ovum)  develop into fruit	<b>Accept</b> ovule / ova <b>Do not accept</b> egg  <b>Accept</b> pollen fertilises ovum for 3 marks
(b)	1	warmth	<b>Accept</b> correct temperature / oxygen  <b>Do not accept</b> light
<b>Total</b>	<b>4</b>		

Question	11		
Part	Mark	Answer	Further Information
	1	leave at a higher temperature / (idea of) use a bigger (surface) area	<b>Accept</b> evaporate a smaller volume of salt solution  <b>Accept</b> use a dish with a larger diameter  <b>Do not accept</b> boil the solution
<b>Total</b>	<b>1</b>		

Question	12		
Part	Mark	Answer	Further Information
(a)	1	block the light / block the sun(light)	<b>Accept</b> they are opaque / they are not transparent
(b)	2	<b>any two from</b> (different) length  (different) position  (different) darkness	<b>Accept</b> shorter / longer  <b>Accept</b> greyness  <b>each</b> correct answer = 1 mark
<b>Total</b>	<b>3</b>		

Question	13		
Part	Mark	Answer	Further Information
(a)	1	100 (°C)	
(b)	1	(boiling point) increases	
(c)	1	any temperature above 104 (°C) because more salt was used	<b>Accept</b> 104 (°C) because salt solution boils at this temperature  any temperature less than 104 (°C) = 0 marks
(d)	1	2(.0) g	
<b>Total</b>	<b>4</b>		

Question	14		
Part	Mark	Answer	Further Information
	3	<p><b>any three from</b></p> <p>(in picture <b>B</b>) the ray of light hits the mirror at a big(ger) angle</p> <p>(in picture <b>B</b>) the ray of light is reflected with the same angle</p> <p>(in picture <b>C</b>) the ray hits at 90° / the ray hits straight on</p> <p>(in picture <b>C</b>) the ray of light is reflected with the same angle</p> <p>(in picture <b>C</b>) the ray of light is reflected along the same path / reflected back on itself / back into the light source</p>	<p><b>each</b> correct sentence = 1 mark</p> <p><b>Accept</b> the ray of light is reflected with the big angle</p>
<b>Total</b>	<b>3</b>		

Question	15		
Part	Mark	Answer	Further Information
(a)	3	<p style="text-align: center;">flower model</p>	<p>correct scale on y-axis = 1 mark</p> <p><b>all four</b> bars correct = 2 marks</p> <p><b>one, two or three</b> bars correct = 1 mark</p>
(b)	1	<p><b>closed petals</b>      small rounded petals</p> <p>thin spiky petals      long flat petals</p>	<p>more than one answer circled = 0 marks</p> <p><b>Accept</b> any indication of the correct answer, e.g. ticking or underlining but circling takes precedence</p>
(c)	1	(idea that) only 2 / few(est) / low(est) number attracted	<b>Accept</b> comparison of numbers, e.g. 2 is a lower number than 18
(d)	2	<p><b>pollination</b></p> <p><b>fertilisation</b></p> <p>(seed production)</p> <p>(seed dispersal)</p> <p><b>germination</b></p>	<p><b>three</b> correct = 2 marks</p> <p><b>one or two</b> correct = 1 mark</p>
<b>Total</b>	<b>7</b>		

Question	16		
Part	Mark	Answer	Further Information
	2	colour of the object <input type="checkbox"/> distance from the object to the screen <input checked="" type="checkbox"/> distance of the light source to the object <input checked="" type="checkbox"/> material of the object <input type="checkbox"/> size of the object <input checked="" type="checkbox"/> strength of the light source <input type="checkbox"/>	<b>all three</b> correct ticks = 2 marks <b>two</b> correct ticks = 1 mark <b>one</b> correct tick = 0 marks <b>two</b> correct and <b>one</b> incorrect tick = 1 mark <b>two</b> incorrect ticks = 0 marks
<b>Total</b>	<b>2</b>		

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