Mathematics

Mark Schemes

Cambridge International Primary Achievement Test

Maths mark schemes – Achievement Test

Guidelines for marking test papers

These mark schemes are designed to provide you with all the information necessary to mark the Primary Progression Tests. As far as possible, the mark schemes give you full guidance regarding acceptable and unacceptable alternative answers and, where appropriate, include examples of student work to illustrate the marking points. However, it is not always possible to predict all the alternative answers that may be produced by students and there could be places where the marker will have to use their professional judgement. In these cases it is essential that such judgement be applied consistently.

The guidelines below should be followed throughout (**unless the mark scheme states otherwise**):

- A correct answer should always be awarded full marks even if the working shown is wrong.

- Where more than one mark is available for a question the mark scheme explains where each mark should be awarded. In some cases marks are available for demonstration of the correct method even if the final answer is incorrect. The method marks can be awarded if the correct method is used but a mistake has been made in the calculation, resulting in a wrong answer. Method marks can also be awarded if the calculation is set up and performed correctly but incorrect values have been used, e.g. due to misreading the question or a mistake earlier in a series of calculations.

- If a question uses the answer to a previous question or part question that the child got wrong, all available marks can be awarded for the latter question if appropriate calculations are performed correctly using the value carried forward. Places where such consideration should be made are indicated in the mark schemes. In these cases, it is not possible to provide all the alternative acceptable answers and the marker must follow the child's working to determine whether credit should be given or not.

- Half marks should not be awarded (except in Paper 3) and at no point should an answer be awarded more than the maximum number of marks available, regardless of the quality of the answer.

- If the child has given more than one answer the marks can be awarded if all the answers given are correct. However, if correct and incorrect answers are given together marks should not be awarded (marks for correct working out can still be gained).

- If the answer line is blank but the correct answer is given elsewhere, e.g. an annotation on a graph or at the end of the working out, the marks can be awarded provided it is clear that the child has understood the requirements of the question.

- If the response on the answer line is incorrect but the correct answer is shown elsewhere, full marks can still be awarded if the child has made the error when copying the answer onto the answer line. If the incorrect final answer is the result of redundant additional working after the correct answer had been reached the marks can be awarded provided the extra work does not contradict that already done.

- Each question and part question should be considered independently and marks for one question should not be disallowed if they are contradicted by working or answers in another question or part question.
- Any legible crossed-out work that has not been replaced can be marked; but if work has been replaced the crossed-out part should be ignored.
- If the child's response is numerically or algebraically equivalent to the answer in the mark scheme, the mark should be given unless a particular form of answer was specified by the question.
- Diagrams, symbols or words are acceptable for explanations or responses.
- Where students are required to indicate the correct answer in a specific way, e.g. by underlining, marks should be awarded for any unambiguous indication, e.g. circling or ticking.
- Any method of setting out working should be accepted.
- Standard rules for acceptable formats of answers involving units, money, duration and time are given below.

Each question on the test paper has a box beside it for the teacher to record the mark obtained. It is advisable to use these boxes so that students, and others looking at the test papers, can clearly see where the marks have been awarded. It is also useful to use the boxes because it makes the process of entering the data into the analysis tool easier. The page total boxes can be used to aid addition but care must be taken not to accidentally enter these values into the analysis tool.

Finally, it is advisable to use a pen of a different colour to that used by the students so that the marks and comments can be clearly seen. It should also be noted that marking in red ink and using the mark boxes is an essential requirement for the Achievement tests.

General rules for alternative answers

In most places on the mark schemes acceptable and unacceptable alternative answers are given in detail, however some general rules are given below and are not necessarily repeated in full for each question that they apply.

Number and Place value

The table shows various general rules in terms of acceptable decimal answers.

Accept
Accept omission of leading zero if answer is clearly shown, e.g.   .675
Accept tailing zeros, unless the question has asked for a specific number of decimal places, e.g.   0.7000
Always accept appropriate tailing zeros, e.g.   3.00m; 5.000kg
Accept a comma as a decimal point if that is that convention that you have taught the children, e.g.   0,638

Units

For questions involving quantities, e.g. length, mass, time or money, correct units must be given in the answer. The table shows acceptable and unacceptable versions of the answer 1.85m.

	Correct answer	Also accept	Do not accept
Units are not given on answer line and question does not specify unit for the answer.	1.85m	Correct conversions provided that the unit is stated, e.g. 1m 85cm 185cm 1850mm 0.00185km	1.85 185m
If the unit is given on the answer line, e.g. ……………………………m	…..1.85…… m	Correct conversions, provided the unit is stated unambiguously, e.g. …..185cm….. m	…..185……m …..1850.… m etc.
If the question states the unit that the answer should be given in a specified unit, e.g. "Give your answer in metres"	1.85m	1.85 1m 85cm	185; 1850 Any conversions to other units, e.g. 185cm

Note: if the answer line is left blank but the correct answer is given elsewhere on the page it can be marked correct if the units match those on the answer line or are unambiguously stated.

Money

For questions involving money, it is essential that appropriate units are given in the answer.

The table shows acceptable and unacceptable versions.

	Accept	Do not accept
If the amount is in dollars and cents, the answer should be given to two decimal places.	$0.30 $9 or $9.00	 $09 or $09.00
If units are not given on answer line	Any unambiguous indication of the correct amount, e.g. 30 cents; 30 c $0.30; $0.30c; $0.30cents $0-30; $0=30; $0:30	30 or 0.30 without a unit Incorrect or ambiguous answers, e.g. $0.3; $30; $30cents; 0.30cents
If $ is shown on the answer line	$.......**0.30**……. $.......**0.30 cents**…. Accept all unambiguous indications, as shown above	$.......**30**……. $.......**30 cents**…. (this cannot be accepted because it is ambiguous, but if the dollar sign is deleted it becomes acceptable)
If cents is shown on the answer line	.......**30**…….cents ....**$0.30**…….cents	.......**0.30**…….cents ....**$30**…….cents

Duration

Accept any unambiguous method of showing duration and all reasonable abbreviations of hours (h, hr, hrs), minutes (m, min, mins) and seconds (s, sec, secs).
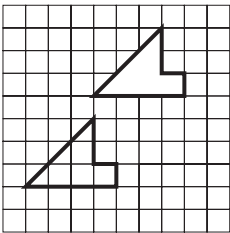
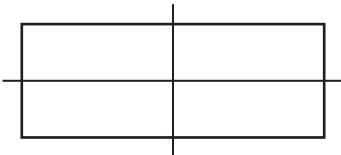| Accept	Do not accept
Any unambiguous indication using any reasonable abbreviations of hours (h, hr, hrs), minutes (m, min, mins) and seconds (s, sec, secs), e.g. 2 hours 30 minutes; 2h 30m; 02h 30m 5 min 24 sec; 00h 05m 24s	Incorrect or ambiguous formats, e.g. 2.30; 2.3; 2.30 hours; 2.30 min; 2h 3; 2.3h
Any correct conversion with appropriate units, e.g. 2.5 hours; 150 mins 324 seconds	 2.5; 150 304
Also accept unambiguous digital stopwatch format, e.g. 02:30:00 00:05:24; 05:24s	Do not accept ambiguous indications, e.g. 02:30 5.24

Time

There are many ways to write times, in both numbers and words, and marks should be awarded for any unambiguous method. Accept time written in numbers or words unless there is a specific instruction in the question. Some examples are given in the table.
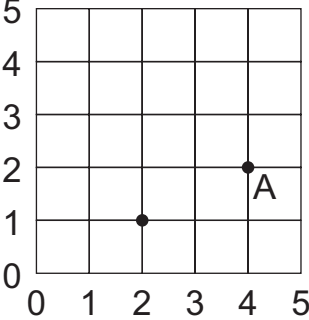
Accept	Do not accept
Any unambiguous indication of correct answer in numbers, words or a combination of the two, e.g. 07:30, 19:00 0730; 07 30; 07.30; 07,30; 07-30; 7.30; 730 a.m.; 7.30am; 7.30 in the morning Half past seven (o'clock) in the morning Thirty minutes past seven am Also accept: O-seven-thirty 1900; 19 00; 19_00 etc. Nineteen hundred (hours) Seven o'clock in the afternoon/evening Accept correct conversion to 12-hour clock, e.g. 16:42 4:42 p.m. Sixteen forty two Four-forty-two in the afternoon/evening Four forty two p.m. Forty two (minutes) past four p.m. Eighteen (minutes) to five in the evening Also accept a combination of numbers and words, e.g. 18 minutes to 5 p.m. 42 minutes past 4 in the afternoon	Incorrect or ambiguous formats, e.g. 07.3; 073; 07 3; 730; 73; 7.3; 7.3am; 7.30p.m 19; 190; 19 000; 19.00am; 7.00am 4.42am; 0442; 4.42 Forty two (minutes) past sixteen Eighteen (minutes) to seventeen

Mathematics Paper 1

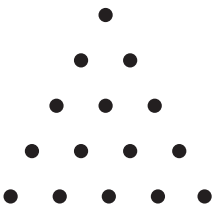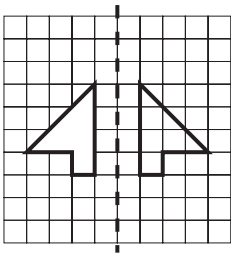|	Question	Mark	Answer	Additional information
1	4Nc8	1	15	
2	6Nn15	1	0.06, 0.60, 6.06, 6.60, 60.6	
3	4Nn8	1	-2 (°C)	
4a	4P2	1	29	
b	4P2	1	4	
c	4P2	1	Accept **any equivalent of** +5, add 5, go up in 5s, etc.	
5a	4D4	1	Accept **either** 7 **or** 8	
b	4D4	1	Correctly drawn bar – must be bigger than Tuesday bar but not as tall as 10.	
6	5Ss5	1		All lines drawn must be ruled and accurate.
7	3Sp2	1	Accept **either** West **or** W.	
8a	6Sm7	1	1 hour	**Do not accept** if hour not given. Also accept 1:00, 01:00, etc.
b	6Sm7	1	9.5 (hours)	Accept if hours not given. Also accept 9 hours 30 minutes, etc.
9	6Nn12	2	$\dfrac{7}{10}$ $\dfrac{13}{20}$ $\dfrac{3}{5}$	1 mark for 1 correct answer. 2 marks for all 3 correct. Also award 2 marks for: $\dfrac{14}{20}$ $\dfrac{13}{20}$ $\dfrac{12}{20}$
10	6Nn17	1	0.85	
11	6Nc8	1	($)5376	

	Question	Mark	Answer	Additional information
12	6Nc6	2	<table><tr><td>number</td><td>double</td></tr><tr><td>10</td><td>20</td></tr><tr><td>57</td><td>114</td></tr><tr><td>600</td><td>1200</td></tr><tr><td>7000</td><td>14000</td></tr></table>	1 mark for 2 correct answers. 2 marks for all 3 correct.
13a	6P4	1	Accept **either** b × h **or** bh	
b	6P4	1	Accept any of (2 × b) + (2 × h), 2 × (b + h), 2 (b + h), 2b + 2h or any equivalent.	Do not accept b + h × 2 **or** h + b × 2
14a	5P6	2	($) 1625 **otherwise**, 75% of $300 = $225 (1 mark) $225 + $1400 = $1625 (1 mark)	Award 2 marks for the correct answer, even if working is not shown. Award 1 mark if either percentage or addition is incorrect, but the rest is correct. eg 75% of $300 = $200 $200 + $1400 = $1600 gains 1 mark
b	5P6	2	75 $2000 - $1700 = $300 (1 mark) $300 ÷ 4 = $75 (1 mark)	Award 2 marks for a correct answer, even if no working is shown. Award 1 mark if **either** subtraction **or** division calculation is incorrect, but rest of procedure is accurate.
15a	4D5	1	15	
b	4D5	1	8	
16a	5Ss3	1		Both lines must be correct to be awarded the mark.

	Question	Mark	Answer	Additional information
b	5Ss1	2	Accept any **two** of: • 4 right angles • 2 pairs of parallel sides • 2 pairs of equal opposite sides • 2 lines of symmetry • Rotational symmetry of order 2	Maximum of 2 marks (1 mark for each correct statement).
17a	4Sp2	1	(4, 2)	
b	4Sp2	1		
18	6Sm5	1	Accept answers from 1.4 (m) to 1.8 (m) **inclusive**	
19	4Nn10	1	A Accept any equivalent of the following: • The numbers are in the two times table. • The numbers are divisible by 2 • You can share the numbers equally by 2.	**Both** letter **and** reason must be correct to be awarded the mark.
20	6Nn9	1	Accept **any** of the following: 2, 2, 3, 5 **or** 2 × 2 × 3 × 5 $2^2 × 3 × 5$ **or** 2^2, 3, 5 2, 3, 5, **or** 2 × 3 × 5	

	Question	Mark	Answer	Additional information
21	6Nc11	1	Add the numbers in a different order. Subtract the numbers from 21 or equivalent.	Accept examples, eg: 2 + 7 + 9 + 3 = 21 (7 + 3) + (2 + 9) = 21 21 − 2 − 9 − 7 = 0
22	6Nc3	1	$\dfrac{4}{5}$	
23	6D1	1	unlikely	
24	6Sp3	1	145°	
25	6Sm5	1	620 (g)	

Mathematics Paper 2

	Question	Mark	Answer	Additional information
1	4Nc2	1	16 + [4] = 20	
		1	20 − [11] = 9	
2	4Nn12	1	$\frac{3}{8}$	
3	6Nn6	1	15	
4	6Nn19	1	25	
5a(i)	5P2	1		
a(ii)	5P2	1	Accept any equivalent of next row has 1 more dot each time, 1+2 1+2+3 etc.	
b	5P2	1	15	
6	4D3	1	60	
7	5Ss4	1		
8a	3Sp2	1	Accept **either** East **or** E	
b	4Sp4	1	Accept **either** North East **or** NE	
9	6Sm1	1	100 cm = 1 m 1000 mm = 1 m	**Both** answers must be correct to be awarded the mark.

Question		Mark	Answer	Additional information
10	6Nn17	1	$1\frac{8}{100}$	Also accept $1\frac{4}{50}$ or $1\frac{2}{25}$ or $\frac{108}{100}$, etc
11a	6Nn20	1	6	
b	6Nn20	1	12	
12a	6Nc2	1	4 + 4 + 4 + 4 + 4 + 4 **or** 6 + 6 + 6 + 6	**Do not accept** 4 × 6
12b	6Nc2	1	Accept any of: 24 ÷ 6 = 4 **or** 24 ÷ 4 = 6 24 = 6 × 4 **or** 24 = 4 × 6 4 × 6 = 24	**Do not accept** 6 × 4 = 24
13	6Nc8	1	($)56.97	1 mark can be awarded if the answer to (a) has been correctly halved.
14	6P2	3	49	19 – 4 = 15 (1 mark) 15 × 2 = 30 (1 mark) 30 + 19 = 49 (1 mark)
15a	6D4	1	35	
b	6D4	1	12	
c	6D5	1	35	
d	6D5	1	35	
16	6Sp4	1	180°	
17	6Sm3	1	1500	
18a	6Sm6	1	34 (cm)	
b	6Sm6	1	45 (cm^2)	
19a	6Nn16	1	43 (m)	
b	6Nn16	1	56.8 (m)	

Question		Mark	Answer	Additional information
20	6Nc4	1	7	Do **not** accept 6.4 or equivalent
21	6P6	3	($) 66 Marks should be awarded for partially correct solutions as shown: 75% of $60 = $45 (1 mark) 60% of $35 = $21 (1 mark) $45 + $21 = $66 (1 mark)	Award 3 marks for the correct answer even if no working is shown. The mark for the correct addition may be awarded even if percentages are incorrect, eg $60 + $35 = $95 gains 1 mark.
22	4Ss2	2	Accept any two of, 3/2 equal angles/sides, 3/1 line(s) of symmetry, order 3/1 rotational symmetry.	Award 1 mark for each correct statement. Statements must cover **different** properties for 2 marks.
23	6Sp3	1	Angle (between 115° and 119° **inclusive**) accurately drawn.	0 marks will be awarded for wobbly lines.

Mathematics Paper 3

	Question	Mark	Answer	Additional information
1	3Nm2	1	17 (cents)	
2	3Nm4	1	($)299	
3	5Nm1	1	13 (points)	
4	5Nm2	1	8	
5	5Nm3	1	16 (crates)	
6	5Nm4	1	92 (biscuits)	
7	5Nm4	1	39 (peanuts)	
8	5Nm5	1	2, 3, 4, 6	Accept in any order. Also accept if 1 and 12 are listed again.
9	5Nm7	1	13 (balls)	
10	5Nm7	1	96 (bottles)	
11	6Nm2	1	980 (kg)	
12	6Nm2	1	375 (tonnes)	
13	6Nm5	1	($)4.75	Do not accept 475c.
14	6Nm5	1	608 (balloons)	
15	6Nm5	1	475 (minutes)	
16	4Nm4	1	9 (cakes)	
17	6Nm2	1	858 (books)	
18	4Nm4	1	33 (postcards)	
19	4Nm2	1	16 (CDs)	
20	4Nm2	1	26 (sweets)	