Lancashire Curriculum Tests

Year 6 – End of Summer Term

(Meeting end of year expectations)

Mathematics test administration guide and mark schemes

Paper 1: arithmetic

Paper 2: reasoning

Lancashire County Council

Administration guide

Format	• This test consists of two papers, an arithmetic paper and a reasoning paper. • The arithmetic paper will take 30 minutes and the reasoning paper will take 40 minutes to complete. • It is at your discretion to choose when or if pupil(s) require a break during each test or whether, if appropriate, to stop the test early. • The test may be administered as a class or in groups, whichever is deemed most suitable. The assistance guidance should be followed in either situation.
Equipment	Each pupil will need the equipment specified below: • a pencil • a ruler (showing centimetres and millimetres) • a rubber (optional). If rubbers are not provided, you should tell pupils that they may cross out any answers they wish to change • a protractor (reasoning paper only) Pupils are **not** allowed to use calculators in the test.
Assistance	• You must ensure that nothing you say or do during a test could be interpreted as giving pupils an advantage, e.g. indicating that an answer is correct or incorrect, or suggesting the pupil looks at an answer again. • If a pupil requests it, a question may be read to them on a one-to-one basis. However, adults can only read numbers and not mathematical symbols. This is to ensure that pupils are not given an unfair advantage by having the function inadvertently explained by reading its name.

General marking principles

The marking guidance within these tests directly reflects the guidance for the national end of key stage tests.

1. The pupil's answer does not match closely any of the examples given in the mark scheme.	Use your judgement in deciding whether the answer corresponds with details in the 'Requirement' column of the mark scheme. Reference will also be made to the 'Additional guidance' column.
2. The pupil has answered in a non-standard way.	Pupils may provide evidence in any form as long as its meaning can be understood. Diagrams, symbols or words are acceptable for explanations or for indicating an answer.
3. The answer in the answer box is wrong due to a misread of numbers (paper 2 only).	A misread occurs when a pupil misreads a **number** given in the question and consistently uses a different number that does not alter the original intention or difficulty of the question. For example, if '243' is misread as '248', both numbers may be regarded as comparable in difficulty. However, if '243' is misread as '245' or '240', the misread number may be regarded as making the question easier. The misread of a number may affect the award of marks. Where appropriate, detailed guidance will be given in the mark scheme. If no guidance is given, examine each case to decide whether the mark(s) will be awarded. **No marks** are awarded if: • it is a **ONE-mark** question • there is more than one misread number in a question • the mathematics is simplified • it is an explanation question • it is a misread of other information (not numbers). For **TWO-mark** questions that have a method mark, **ONE** mark will be awarded if the correct method is correctly followed through with the misread number provided the mathematics has not been simplified. For **THREE-mark** questions, refer to the additional guidance.
4. No answer is given in the expected place, but the correct answer is given elsewhere.	Where a pupil has unambiguously indicated the correct answer, the mark(s) will be awarded. In particular, where a word or number is expected, a pupil may meet the requirement by annotating a graph or labelling a diagram elsewhere in the question.
5. The pupil's answer is correct, but the wrong working is shown.	A correct final answer will be awarded the mark(s).
6. The answer in the answer box is wrong due to a transcription error.	A transcription error occurs when a pupil miscopies the correct answer from the **end of their working** into the answer box. Where appropriate, detailed guidance will be given in the mark scheme. For questions with no guidance, marks **will not** be awarded for a transcription error unless the following rules apply: • the wrong answer is due to a transcription error; i.e. the wrong answer is due to transposed digits in a number (e.g. 243 is written as 423); if so, the mark(s) **will** be awarded. **OR** • the wrong answer is due to one digit being changed in a number of 4 or more digits (e.g. 2345 is written as 2845); if so, the mark(s) **will** be awarded.

	• the pupil has continued to give redundant extra working which does not contradict the work already done; if so, the mark(s) **will** be awarded. • the pupil has continued to give redundant extra working which does contradict work already done; if so, the mark(s) **will not** be awarded.
7. The pupil's answer correctly follows through from earlier incorrect work.	'Follow through' marks for an answer will only be awarded when specifically stated in the mark scheme.
8. The correct answer has been crossed out and not replaced.	No marks will be awarded for crossed-out answers or working.
9. More than one answer is given.	If all answers given are correct (or a range of answers is given, all of which are correct), the mark(s) will be awarded unless the mark scheme states otherwise. If both correct and incorrect answers are given, no mark(s) will be awarded unless the mark scheme states otherwise.
10. The pupil's answer is numerically or algebraically equivalent to the answer in the mark scheme.	Answers should be given as single values in their simplest form unless the mark scheme states otherwise, e.g. for $\square$ = 536 − 30, the answer 500 + 6 will not be accepted. Refer to the 'Additional guidance' column to determine if the mark(s) will be awarded.
11. The pupil has used a symbol as a separator of thousands.	Only accept the use of a comma as a separator of thousands (either correctly or incorrectly placed). If the digits are in the correct order, the mark(s) will be awarded. If any other symbol is used the mark(s) will not be awarded.
12. The correct answer is embedded in the working (paper 2 only).	An embedded answer occurs when a pupil shows the correct answer within their working but then selects the wrong answer from their working as their final answer or leaves the answer box blank. For example, if a pupil shows '2.5 x 6 = 3 x 5' in the last line of their working and writes 5 in the answer box whereas the correct answer is 3, then this will affect the award of marks. Where appropriate, detailed guidance will be given in the mark scheme. If no guidance is given, examine each case to decide whether the mark(s) will be awarded. For **ONE-mark** questions, no mark will be awarded. For **TWO-mark** questions that have a method mark, **ONE-mark** will be awarded provided the pupil does not give redundant extra working which contradicts work already done. For **THREE-mark** questions, refer to the additional guidance.
13. The pupil has drawn lines which do not meet at the correct point.	'Slight inaccuracies in drawing' means within or on a circle of radius 2 mm with its centre at the correct point.

Marking specific types of question:
summary of additional guidance

Answers involving money

	Accept	Do not accept
Where the £ sign is given, e.g. £3.20, £7 **£**	£3.20 £7 £7.00 Any unambiguous indication of the correct amount, e.g. £3.20p £3 20 pence £3 20 £3-20 £3:20	Incorrect placement of pounds or pence, e.g. £320 £320p Incorrect placement of decimal point or incorrect use or omission of 0 or use of comma as a decimal point, e.g. £3.2 £3 200 £32 0 £3-2-0 £3,20
Where the p sign is given, e.g. 40p **p**	40p Any unambiguous indication of the correct amount, e.g. £0.40p	Incorrect or ambiguous use of pounds or pence or use of comma as a decimal point, e.g. 0.40p £40p £0,40p
Where no sign is given, e.g. £3.20, 40p	£3.20 40p 320p £0.40 Any unambiguous indication of the correct amount, e.g. £3.20p £0.40p £3 20 pence £.40p £3 20 £.40 £3-20 40 £3:20 0.40 3.20 320 3 pounds 20	Incorrect or ambiguous use of pounds or pence or use of comma as a decimal point, e.g. £320 £40 £320p £40p £3.2 0.4 3.20p 0.40p £3,20 0,40p £0,40p

Answers involving time

	Accept	Do not accept
A time interval, e.g. 2 hours 30 minutes	2 hours 30 minutes Any unambiguous, correct indication, e.g. (0)2h 30 — 150 minutes (0)2h 30 min — 150 (0)2 30 — 2.5 hours (0)2-30 — $2\frac{1}{2}$ hours Digital electronic time, i.e. (0)2:30 (0)2;30	Incorrect or ambiguous time interval or use of comma as a decimal point, e.g. 2.30 — 2.3 hours 2,30 — 2.3h 230 — 2h 3 2.3 — 2.30 min 2,5 hours
A specific time, e.g. 8:40am, 17:20	(0)8:40am (0)8:40 twenty to nine Any unambiguous, correct indication, e.g. (0)8.40 (0)8;40 0840 (0)8 40 (0)8-40 Unambiguous change to 12- or 24-hour clock, e.g. 17:20 as 5:20pm or 17:20pm	Incorrect time, e.g. 8.4am 8.40pm Incorrect placement of separators, spaces, etc. or incorrect use or omission of 0 or use of a comma as a decimal point, e.g. 840 8:4:0 8.4 084 8,40

Answers involving measures

	Accept	Do not accept
Where units are given, e.g. 8.6kg **kg** **m** **l**	8.6kg Any unambiguous indication of the correct measurement, e.g. 8.60kg 8.6000kg 8kg 600g	Incorrect or ambiguous use of units or use of comma as a decimal point, e.g. 8600kg 8kg 600 8,60kg 8,6000kg

If a pupil gives an answer with a unit different to the unit in the answer box, then their answer must be equivalent to the correct answer provided, unless otherwise indicated in the mark scheme.

If a pupil leaves the answer box empty but writes the answer elsewhere on the page without any units, then that answer is assumed to have the units given in the answer box and the conditions listed above.

Mark schemes for Paper 1: arithmetic

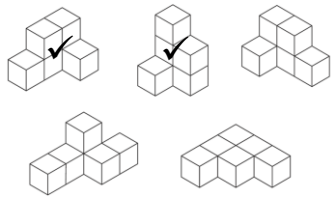
Qu.	Requirement	Mark	Additional guidance
1	2	1m	
2	18	1m	
3	8.19	1m	
4	4,000,998	1m	
5	9.04	1m	
6	8 or $\frac{6}{8}$	1m	
7	176.36	1m	
8	3,153	1m	
9	$1\frac{11}{12}$	1m	Accept $\frac{23}{12}$
10	370,000	1m	
11	36.5	1m	
12	46,300	1m	
13	5.1	1m	
14	306.044	1m	
15	$6\frac{1}{35}$	1m	
16	2,698	1m	
17	805	1m	
18	362,071	1m	
19	$\frac{2}{7}$	1m	
20	10,001	1m	
21	8 or $\frac{3}{8}$	1m	
22	8,812	1m	
23	200	1m	
24	58.38	1m	
25	16	1m	
26	791,302	1m	
27	$17\frac{1}{3}$	1m	Also accept $17\frac{2}{6}$ or $\frac{104}{6}$
28	Award **TWO marks** for the correct answer of **361,888** If the answer is incorrect, award **ONE mark** for the formal method of long multiplication with no more than **ONE** arithmetic error, i.e. 4208 x 86 25248 + 336040 error: not including the 'carried' 600 361288	up to 2m	Working must be carried through to reach a final answer for the award of **ONE mark**. **Do not** award any marks if the error is in the place value, e.g. the omission of the zero when multiplying by tens: 4208 x 86 25248 + 33604 place value error 58852

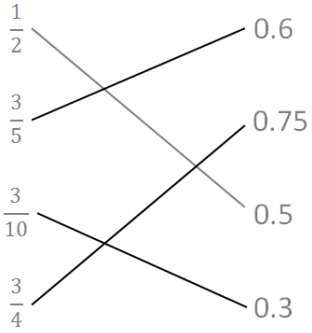
29	Award **TWO marks** for the correct answer of **257** If the answer is incorrect, award **ONE mark** for the formal method of division with no more than **ONE** arithmetic error, i.e. **255** error totalling 29⟌7453 - 5800 (200 x) 1653 - 1450 (50 x) 203 - 145 (5 x) 58 - 58 (2 x) 0	**up to 2m**	Working must be carried through to reach a final answer for the award of **ONE mark**. Other formal methods can be used for the award of one mark. Short division methods must be supported by evidence of appropriate carrying figures to indicate the use of a division algorithm, and be a complete method. The carrying figure must be less than the divisor.
30	**0.9**	**1m**	
31	**1,000**	**1m**	
32	**77,076**	**1m**	
33	Award **TWO marks** for the correct answer of: **204.5** or **204 r 21** or **204** $\frac{1}{2}$ If the answer is incorrect, award **ONE mark** for the formal method of division with no more than **ONE** arithmetic error, i.e. **204 r12** 42⟌8589 - 8400 (200 x) 180 error in subtraction - 168 (4 x) 12 Award **ONE mark** for the answer of **204** with no remainder.	**up to 2m**	Working must be carried through to reach a final answer for the award of **ONE mark**. Other formal methods can be used for the award of **ONE mark**. Short division methods must be supported by evidence of appropriate carrying figures to indicate the use of a division algorithm, and be a complete method. The carrying figure must be less than the divisor.

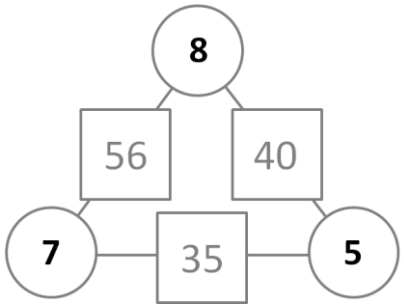
34	Award **TWO marks** for the correct answer of **185.76** If the answer is incorrect, award **ONE mark** for the formal method of long multiplication with no more than **ONE** arithmetic error, i.e. 6.88 x 27 48.16 + 137.60 (6 5 / 1 1) 175.76 (1) error: not including the 'carried' 10	**up to 2m**	Working must be carried through to reach a final answer for the award of **ONE mark**. **Do not** award any marks if the error is in the place value, e.g. the omission of the zero when multiplying by tens: 6.88 x 27 48.16 + 13.76 place value error 61.92
35	**3,900.94**	**1m**	
36	**3.6**	**1m**	

Total 40 marks

Mark schemes for Paper 2: reasoning

Qu.	Requirement	Mark	Additional guidance
1a	**÷10**	**1m**	
1b	**-10, ÷10**	**1m**	
2	Award **ONE mark** for the identification of **both** shapes. 	**1m**	
3	Award **ONE mark** for the answers **1,2 and 3** in any order	**1m**	
4a	**60**	**1m**	
4b	**120**	**1m**	

5	Award **TWO marks** for the correct answer of **0.6kg** or **600g** If the answer is incorrect, award **ONE mark** for evidence of an appropriate method with no more than one arithmetic error, e.g. 5 – 3.2 = a a ÷ 3 = incorrect answer	**up to 2m**	An answer need not be obtained for the award of **ONE mark**.
6	<table><tr><td></td><td>girls</td><td>not girls</td></tr><tr><td>has a pet</td><td>27</td><td>33</td></tr><tr><td>does not have a pet</td><td>29</td><td>36</td></tr></table> Award **TWO marks** for both sections correctly completed. If the answers are incorrect, award **ONE mark** if the total of the four sections is 125	**up to 2m**	
7a **7b**	**(4 + 5 + 1) x 5** **4 + (5 + 1) x 5**	**1m** **1m**	
8	**145 miles**	**1m**	
9	Award **ONE mark** for an explanation that suggests there are **28 days** in total on the graph and March has 31 days. Or, it must be **February** as there are 28 days in total on the graph.	**1m**	
10	Award **ONE mark** for all three fractions connected correctly.  	**1m**	
11	**34.66**	**1m**	

12		**1m**	
13	Award **THREE marks** for the correct answer of **6** If the answer is incorrect, award **TWO marks** for sight of: **£25.75 x 4 AND £196 - £103 AND £93 ÷ 15.50** with no more than one arithmetic error. Award **ONE mark** for evidence of an appropriate complete method.	**up to 3m**	An answer need not be obtained for the award of **ONE mark**. A misread of a number may affect the award of marks. **NO marks** are awarded if there is more than one misread or if the mathematics is simplified. **TWO marks** will be awarded if an appropriate complete method with the misread number is followed through correctly. **ONE mark** will be awarded for evidence of an appropriate complete method with the misread number followed through correctly with no more than one arithmetic error.
14	**(2,8)**	**1m**	
15	Award **TWO marks** for the correct answer of **£2.10** If the answer is incorrect, award **ONE mark** for evidence of an appropriate method with no more than one arithmetic error, e.g. £3.50 ÷ 10 = a a x 6 = incorrect answer	**up to 2m**	An answer need not be obtained for the award of **ONE mark**.
16	Award **ONE mark** for all three identified correctly. ✓ 7.24 ✓ 7.29 7.12 ✓ 7.23 7.27	**1m**	
17	Award **TWO marks** for the correct answer of **67.2cm or 672mm** If the answer is incorrect, award **ONE mark** for evidence of an appropriate method with no more than one arithmetic error, e.g. 8.4 x 2 = a a x 4 = incorrect answer	**up to 2m**	An answer need not be obtained for the award of **ONE mark**.
18	**60 cubes**	**1m**	
19	**81cm²**	**1m**	

20	Award **ONE mark** for an explanation that there are 60 minutes in an hour and 24 hours in a day. 24 x 60 = 1,440	**1m**	
21	Award **TWO marks** for the correct answer of 48° If the answer is incorrect, award **ONE mark** for evidence of an appropriate method with no more than one arithmetic error, e.g. 60 + 72 = a 180 - a = incorrect answer	**up to 2m**	
22	Award **TWO marks** for the correct answer of **35p** If the answer is incorrect, award **ONE mark** for evidence of an appropriate method with no more than one arithmetic error, e.g. 1.60 - 0.90 = a a ÷ 2 = incorrect answer	**up to 2m**	An answer need not be obtained for the award of **ONE mark**
23	**13 squares**	**1m**	
24	Award **ONE mark** for an equilateral triangle drawn correctly.	**1m**	Accept slight inaccuracies in drawing, e.g. lines to within 2mm or angles to within 2°

Total 35 marks