Lancashire Curriculum Tests

Year 6 – End of Spring Term

(On track to meet 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 mirror (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 2016.

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.

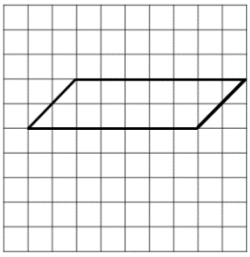
Mark schemes for Paper 1: arithmetic

Qu.	Requirement	Mark	Additional guidance
1	47,009	1m	
2	-10	1m	
3	12	1m	
4	12,416	1m	
5	311.3	1m	
6	4 or $\frac{4}{5}$	1m	
7	3.66	1m	
8	32,000	1m	
9	$\frac{17}{18}$	1m	
10	170,000	1m	
11	100	1m	
12	390	1m	
13	308.16	1m	
14	5.6	1m	
15	$5\frac{7}{20}$ or $\frac{107}{20}$	1m	
16	42	1m	
17	5,001	1m	
18	131,001	1m	
19	$\frac{4}{9}$	1m	
20	999	1m	
21	30 or $\frac{24}{30}$	1m	
22	3,020	1m	
23	70	1m	
24	1,969.8	1m	
25	50	1m	
26	299,064	1m	
27	$\frac{9}{5}$ or $1\frac{4}{5}$	1m	
28	Award **TWO marks** for the correct answer of **277,365** If the answer is incorrect, award **ONE mark** for the formal method of long multiplication with no more than **ONE** arithmetic error, i.e. 6765 x 41 6765 +270400 error: not including 3 2 2 277165 the 'carried' 200	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: 6765 x 41 6765 + 27060 place value error 3 2 2 33825

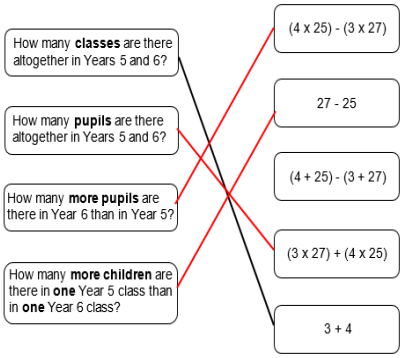
29	Award **TWO marks** for the correct answer of **56** If the answer is incorrect, award **ONE mark** for the formal methods of division with no more than **ONE** arithmetic error, i.e. **55** error totalling 28⟌1568 - 1400 (50 x) 168 - 140 (5 x) 28 - 28 (1 x) 0	**up to 2m**	Working must be carried 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	**100**	**1m**	
31	**999.9**	**1m**	
32	**62,848**	**1m**	
33	Award **TWO marks** for the correct answer of: **23r9** or **23.25** or **23** $\frac{1}{4}$ If the answer is incorrect, award **ONE mark** for the formal methods of division with no more than **ONE** arithmetic error, i.e. 23r19 36⟌837 - 720 (20 x) 127 *error!* - 108 (3 x) 19	**up to 2m**	Working must be carried through to reach a final answer for the award of **ONE mark**. Award **ONE mark** for the answer of 23 with no remainder, if the complete working is in place. 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.

Total of 40 marks

Mark schemes for Paper 2: reasoning

Qu.	Requirement	Mark	Additional guidance
1a	**98,600 and 99,000**	1m	
1b	**21**	1m	
2	**14.4 cm**	1m	
3	Award **TWO marks** for the correct answer of **46** If the answer is incorrect, award **ONE mark** for evidence of an appropriate method, e.g. 45 + 33 + 55 + 47 + 50 = a a ÷ 5 = incorrect answer	up to 2m	An answer need not be obtained for the award of **ONE mark**.
4	**5°C and -3°C**	1m	
5a	**31**	1m	
5b	**£1,656**	1m	
6	**60**	1m	
7	Award **ONE mark** for a parallelogram completed with a base of 7cm. 	1m	
8	**0.2**	1m	
9	Award **TWO marks** for all four letters in the correct place. 2850g C 3.15kg D 2.4kg B 2100g A Award **ONE mark** for any three letters placed correctly.	up to 2m	
10	**350ml**	1m	
11	**6**	1m	

12	Award **TWO marks** for the correct answer of **£104** If the answer is incorrect, award **ONE mark** for evidence of an appropriate method, e.g. 78 ÷ 6 = a a x 8 = incorrect answer	**up to 2m**	An answer need not be obtained for the award of **ONE mark**.
13	**(2, 3)**	**1m**	
14a **14b** **14c**	**English** **Music** Award **ONE mark** for an explanation which recognises that the two numbers are out of different totals of children, i.e. science for boys was 3 out of 10 but science for girls was 3 out of 20.	**1m** **1m** **1m**	
15	**40cm**	**1m**	
16	**6**	**1m**	
17	Award **THREE marks** for the correct answer of **40** If the answer is incorrect, award **TWO marks** for sight of **£10** AND **£2.40** AND **£4.60** AND **£3** as all multiplication steps completed correctly and **20 ÷ 0.5 or 2,000 ÷ 50** = wrong answer. If the answer is incorrect, award **TWO marks** for sight of **20 cans** AND **£2.40** AND **£4.60** AND **£3** as all multiplication steps completed correctly and **20 plus (10 ÷ 0.5) or 20 plus (1000 ÷ 50)** = wrong answer. Award **ONE mark** for evidence of an appropriate complete method.	**up to 3m**	Accept for **TWO marks**, sight of 1000p (or 20 cans) AND 240p AND 460p AND 300p as all multiplication steps completed correctly. 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: • all multiplication steps completed correctly with the misread number followed by division. OR • evidence of an appropriate complete method with the misread number followed through correctly with no more than one arithmetic error.
18	**18cm²**	**1m**	

19	Award **ONE mark** for an explanation that recognises that 30% of 60 and 60% of 30 both give a value of **18**.	**1m**	
20	Award **TWO marks** for all three questions matched correctly with the calculation.  Award **ONE mark** for any two correct matches.	**up to 2m**	
21	**12**	**1m**	Accept the combinations written, e.g. A1, A2, A3, A4, B1, B2, B3, B4, C1, C2, C3, C4
22a **22b**	**8** kilometres **22** miles	**1m** **1m**	
23	Award **TWO marks** for the correct answer of **10.6cm.** If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. **8.48 ÷ 4 = a** **a x 5 = wrong answer**	**up to 2m**	An answer need not be obtained for the award of **ONE mark.**

Total of 35 marks