

2022 national curriculum tests

Key stage 1

Mathematics test mark schemes

Paper 1: arithmetic

Paper 2: reasoning



Standards
& Testing
Agency

Contents

1. Introduction	3
2. Structure of the test	3
3. Content domain coverage	4
4. Explanation of the mark schemes	5
5. General marking guidance	6
5.1 Applying the mark schemes	6
5.2 General marking principles	6
6. Internal moderation procedures	8
7. Mark schemes for Paper 1: arithmetic	9
8. Mark schemes for Paper 2: reasoning	10
9. Example responses	20
9.1 Examples of responses from question 26	20
9.2 Examples of responses from question 28	22

1. Introduction

The Standards and Testing Agency (STA) is responsible for the development and delivery of statutory tests and assessments. STA is an executive agency of the Department for Education.

The 2022 tests assess the national curriculum. This test has been developed to meet the specification set out in the [test framework](#)¹ for mathematics at key stage 1.

A new test and new mark schemes will be produced each year.

The key stage 1 tests will be marked internally within schools to inform teacher assessment.

Scaled score conversion tables are not included in this document. Conversion tables will be produced as part of the standards maintenance process. [Scaled score conversion tables](#)² for the 2022 tests will be published in June 2022.

The mark schemes should be used to mark pupils' responses. The pupil examples are based on responses gathered from the test trialling process. It is important when marking to refer to the general marking principles, the additional guidance and the exemplars section to ensure marking is accurate and consistent.

2. Structure of the test

The key stage 1 mathematics test comprises:

- Paper 1: arithmetic (25 marks)
- Paper 2: reasoning (35 marks)

¹ www.gov.uk/government/publications/key-stage-1-mathematics-test-framework

² www.gov.uk/guidance/scaled-scores-at-key-stage-1

3. Content domain coverage

The 2022 test meets the specification in the test framework. Table 1 sets out the areas of the content domain that are assessed in Papers 1 and 2.

The references below are taken from the test framework. For example, a question with reference 2N6 assesses 'Using place value and number facts to solve problems' and is taken from the Y2 programme of study.

Table 1: Content domain coverage for Paper 1 and Paper 2

Paper 1: arithmetic		Paper 2: reasoning	
Question	Content domain reference	Question	Content domain reference
1	1C2a/2C1	1	2C4/1C2a
2	1N2b/1N1a	2	2N6/2C6
3	2N6/2C2a	3	1N2b
4	2C1/1C2a	4	2M4a
5	2C2b/1N1a	5	1C4/1C2a
6	2C6/1N1b	6	1M4c
7	2C6/1N1b	7	2N2b
8	2C1/2N6	8	2C4/2C2b
9	2N6/2C2a	9	1F1b
10	2C6/1N1b	10	2N6/2C1
11	2C2b	11	2G2a
12	2F1a/1F1a	12	2C1/1C2a
13	2N6/2C2b	13	1M2/1M1/2N1
14	2C3/1C4	14	2N1
15	2C6/1N1b	15	2M2
16	2C2b	16	2N3
17	2C2b/2C2a	17	2C3/1C2b
18	2F1a/1F1b	18	2C8/2C6
19	2C3/2C2b	19	2M3b/1M3
20	2C3/2C2b	20	2C1/1C2a
21	2C2b	21	2G2a
22	2C6/1N1b	22	2C8/1C8
23	2C2b/2C2a	23	2N6/2C1
24	2C3/2N6	24	2C8
25	2C2b/2C2a	25	2C8/2N1
		26	2C4/2C2b
		27	2C2b/2N1
		28	2M9/1M3
		29	2F1a/2C8
		30	2S2b
		31	2C8/2C6

4. Explanation of the mark schemes

Those marking the tests should familiarise themselves with the marking guidance in section 5 of this document before applying the mark schemes.

The practice questions are not marked as they are completed by the pupils together with the test administrator as an introduction to the test.

The marking information for each question is set out in the form of tables (sections 7 and 8).

The '**Qu.**' column on the left-hand side of each table provides a quick reference to the question number and part.

The '**Requirement**' column may include two types of information:

- a statement of the requirements for the award of each mark, with an indication of whether partial credit can be given for a correct method
- examples of some different types of correct answer

The '**Mark**' column indicates the total number of marks available for each question part.

The '**Additional guidance**' column indicates alternative acceptable answers, and provides details of specific types of answer that are unacceptable. Other guidance, such as the range of acceptable answers, is provided as necessary.

5. General marking guidance

5.1 Applying the mark schemes

To ensure consistency of marking, the most frequent procedural queries are listed in Table 2, along with the action you should take. Unless otherwise specified in the mark scheme, you should apply these guidelines in all cases.

Example responses are also included in section 9 for the two working mark questions in Paper 2: reasoning. These should act as your guide when you are marking these questions.

5.2 General marking principles

Table 2: General marking principles

Possible issues when marking	
1. The answer does not closely match any of the examples in the mark scheme.	Those marking the test will use their judgement to decide whether the answer corresponds with details in the 'Requirement' column of the mark scheme. Refer also to the 'Additional guidance' column and to the examples of responses where appropriate.
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 ways to present an answer.
3. The answer is correct, but the wrong working is shown.	Always award the mark for a final response that is correct.
4. No answer is provided in the expected place, but the correct answer is given elsewhere.	Where a word or number response is expected, a pupil may meet the requirement by annotating a graph or labelling a diagram elsewhere in the question.
5. The correct answer has been crossed (or rubbed) out and not replaced.	You should not award any marks for crossed out answers or working.
6. The answer in the answer box is wrong, but the correct answer is shown in the working.	Give precedence to the response provided in the answer box over any other workings. However, in a 2-mark question, one mark may still be awarded for evidence of a complete, correct method or a partial step, as indicated in the 'Requirement' column.

Possible issues when marking	
7. More than one answer is given.	If all provided answers are correct (or a range of answers is given, all of which are correct), a mark will be awarded unless the mark scheme states otherwise. If both correct and incorrect responses are given, no mark will be awarded unless the mark scheme states otherwise.
8. There appears to be a misread of numbers that affects the pupil's working.	<p>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 43 is misread as 48, both numbers may be regarded as comparable in difficulty. However, if 43 is misread as 40 or 45, the misread number may be regarded as making the question easier, depending on the question. For example, $26 + 40$ is easier than $26 + 48$. The misread of a number will affect the award of marks.</p> <p>No marks are awarded if there is more than one misread in a question or if the mathematics is simplified by the misread.</p> <p>For 1-mark questions: no mark is awarded for one or more misreads.</p> <p>For 2-mark questions that have a method mark: one mark is awarded if the correct method is correctly implemented with the misread number, provided this does not simplify the mathematics.</p>
9. The answer is numerically 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, for example, for $\square = 12 - 5$, the answer $4 + 3$ will not be accepted. Where alternative expressions are acceptable, these will be indicated in the additional guidance column.
10. The pupil reverses a digit in their answer.	<p>A reversed digit is acceptable if it is clearly recognisable as the digit intended. For example, a reversed 2 must clearly show the characteristics of a 2 rather than a 5.</p> <p>As a further example, where the answer is 61 and the response ɔ1 is given, then this should be awarded the mark.</p> <p>You should make a decision based upon your knowledge of the pupil's writing.</p>

Possible issues when marking	
11. The pupil transposes digits in their answer.	<p>A pupil transposes digits by reversing their order, for example, 83 instead of 38.</p> <p>For questions where no working is shown, an answer with transposed digits should not be awarded the mark. For example, a response of 16 or 18 when the answer is 61 should not be marked as correct.</p>
12. The pupil has worked out the answer correctly, but then copied the wrong answer into the answer box.	<p>A transcription error can occur when the pupil miscopies the correct answer from the end of their working into the answer box.</p> <p>Give precedence to the answer given in the answer box over any other workings. There may be cases where the incorrect answer is a transcription error, in which case you may check the pupil's intention and decide whether to award the mark(s).</p>
13. The answer correctly follows through from earlier incorrect work.	<p>'Follow through' marks for an answer may only be awarded when specifically stated in the mark scheme.</p>

6. Internal moderation procedures

We recommend those who are involved in marking the key stage 1 tests undertake moderation activity to ensure marking is consistent across their school.

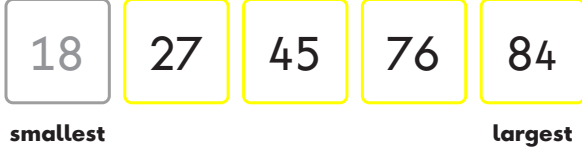
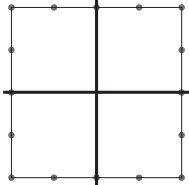
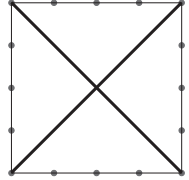
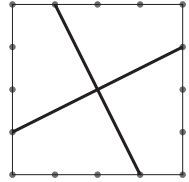
7. Mark schemes for Paper 1: arithmetic

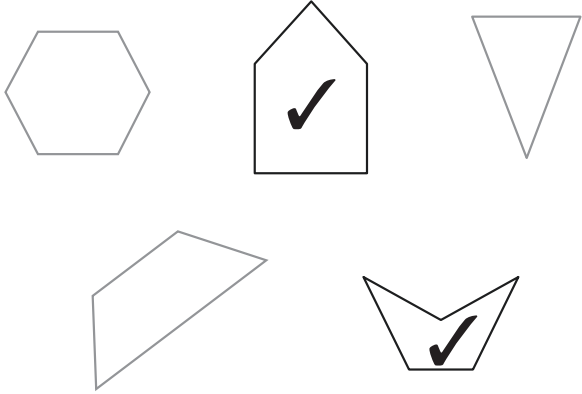
Equivalent answers are **not** acceptable, for example, $10 + 4$ instead of 14. When marking the arithmetic questions, refer specifically to general marking principles 9, 10, 11 and 12. No misreads are allowed for 1-mark questions.

Qu.	Requirement	Mark	Additional guidance
P	5	none	Practice question
1	10	1m	
2	99	1m	
3	43	1m	
4	16	1m	
5	69	1m	
6	14	1m	
7	50	1m	
8	80	1m	
9	31	1m	
10	3	1m	
11	77	1m	
12	40	1m	
13	27	1m	
14	5	1m	
15	10	1m	
16	90	1m	
17	61	1m	
18	4	1m	
19	29	1m	
20	12	1m	
21	39	1m	
22	12	1m	
23	7	1m	
24	100	1m	
25	28	1m	

8. Mark schemes for Paper 2: reasoning

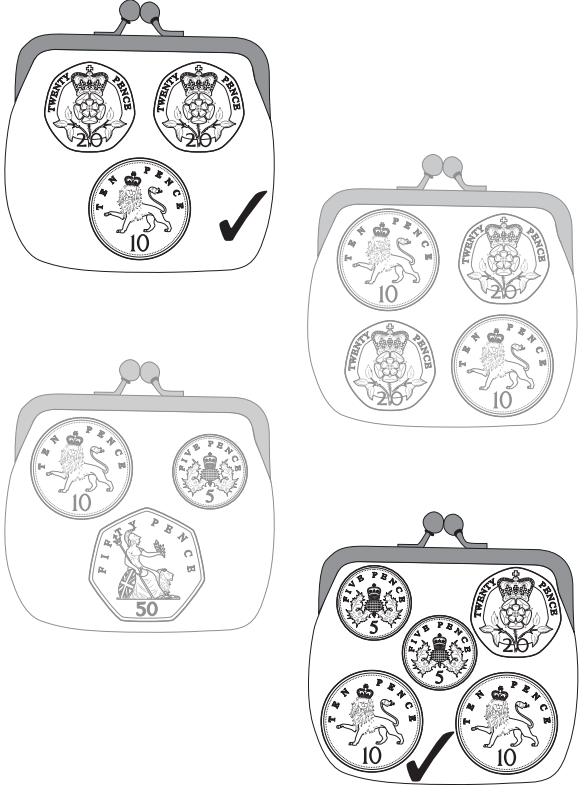
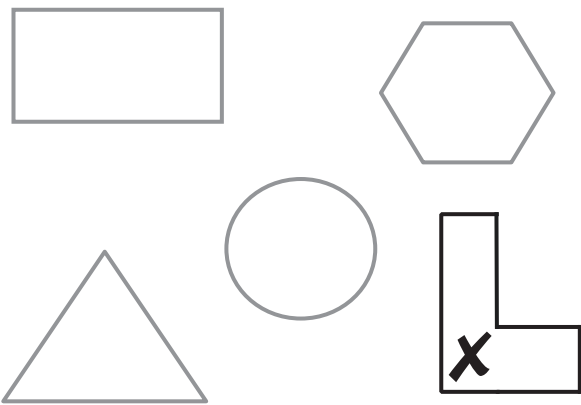
Qu.	Requirement	Mark	Additional guidance
Aural questions			
P	7 (frogs)	none	Practice question
1	19 (cars)	1m	
2	10 OR 12 OR 14 OR 16 OR 18	1m	Accept one or more of the correct answers for the award of the mark. Do not award the mark if additional incorrect numbers are written inside the answer box. (Refer to general marking principle 7 on page 7.)
3	59	1m	
4	Correct time ticked as shown: quarter to 9 <input type="checkbox"/> quarter to 4 <input checked="" type="checkbox"/> quarter past 9 <input type="checkbox"/> quarter past 4 <input type="checkbox"/>	1m	Accept any other clear way of indicating the correct answer, e.g. circling. Do not award the mark if additional times are indicated, unless it is clear the correct time is the pupil's final choice.
5	19 (sweets)	1m	
Written questions			
6	Labels matched to the correct part of the date as shown: date Tuesday 28th April 2020 label day of the month day of the week year month	1m	All three pairs must be correctly matched for the award of the mark. Ignore additional lines drawn from <input type="checkbox"/> 28th or <input type="checkbox"/> day of the month

Qu.	Requirement	Mark	Additional guidance
7	Number sequence completed as shown: 	1m	All numbers must be in the correct order for the award of the mark. Accept any other clear way of indicating the correct answer, e.g. matching each number to its correct position. Misreads or transposed numbers are not allowed. (Refer to general marking principles 8 and 11 on pages 7 and 8.)
8	31 (beads)	1m	
9	The square is divided into quarters using two lines only, e.g.  OR  OR 	1m	Accept slight inaccuracies in drawings as long as the intention is clear.
10	100 (stickers)	1m	

Qu.	Requirement	Mark	Additional guidance																																																								
11	<p>Correct shapes ticked as shown:</p> 	1m	<p>Accept any other clear way of indicating the correct shapes.</p> <p>Do not award the mark if additional shapes are indicated, unless it is clear the correct shapes are the pupil's final choice.</p>																																																								
12	<p>Calculation completed correctly as shown, e.g.</p> <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">2</td> <td style="padding: 0 10px;">+</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">6</td> <td style="padding: 0 10px;">=</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">3</td> <td style="padding: 0 10px;">+</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">5</td> <td style="padding: 0 10px;">=</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">4</td> <td style="padding: 0 10px;">+</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">4</td> <td style="padding: 0 10px;">=</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">5</td> <td style="padding: 0 10px;">+</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">3</td> <td style="padding: 0 10px;">=</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">6</td> <td style="padding: 0 10px;">+</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">2</td> <td style="padding: 0 10px;">=</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">7</td> <td style="padding: 0 10px;">+</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="padding: 0 10px;">=</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> <td style="padding: 0 10px;">+</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">0</td> <td style="padding: 0 10px;">=</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">0</td> <td style="padding: 0 10px;">+</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> <td style="padding: 0 10px;">=</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> </tr> </tbody> </table>	2	+	1	6	=	1	8	3	+	1	5	=	1	8	4	+	1	4	=	1	8	5	+	1	3	=	1	8	6	+	1	2	=	1	8	7	+	1	1	=	1	8	8	+	1	0	=	1	8	0	+	1	8	=	1	8	1m	<p>Do not accept $1 + 17 = 18$</p>
2	+	1	6	=	1	8																																																					
3	+	1	5	=	1	8																																																					
4	+	1	4	=	1	8																																																					
5	+	1	3	=	1	8																																																					
6	+	1	2	=	1	8																																																					
7	+	1	1	=	1	8																																																					
8	+	1	0	=	1	8																																																					
0	+	1	8	=	1	8																																																					

Qu.	Requirement	Mark	Additional guidance										
13	9 (pencils)	1m	Do not accept nine pencils drawn without an answer of 9 also written.										
14	<p>Award TWO marks for number patterns completed as shown:</p> <div style="text-align: center;"> </div> <p>Award ONE mark for any two correct numbers.</p>	<p>2m</p> <p style="text-align: center;">OR</p> <p>1m</p>											
15	<p>Measurements matched to correct units as shown:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">measurement</th> <th style="text-align: center;">unit</th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black; padding: 5px;"> the length of a pencil </td> <td style="border: 1px solid black; padding: 5px; text-align: center;">kg</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;"> the mass of a bag of potatoes </td> <td style="border: 1px solid black; padding: 5px; text-align: center;">°C</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;"> the capacity of a cup </td> <td style="border: 1px solid black; padding: 5px; text-align: center;">cm</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;"> the temperature outside </td> <td style="border: 1px solid black; padding: 5px; text-align: center;">ml</td> </tr> </tbody> </table>	measurement	unit	the length of a pencil	kg	the mass of a bag of potatoes	°C	the capacity of a cup	cm	the temperature outside	ml	1m	<p>All the measurements must be correctly matched for the award of the mark.</p> <p>Do not award the mark if the measurement is matched to more than one unit.</p> <p>Ignore additional lines drawn from ‘the length of a pencil’.</p>
measurement	unit												
the length of a pencil	kg												
the mass of a bag of potatoes	°C												
the capacity of a cup	cm												
the temperature outside	ml												

Qu.	Requirement	Mark	Additional guidance												
16	<p>Table completed correctly as shown:</p> <table border="1"> <thead> <tr> <th>Number</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td>87</td> <td>8</td> <td>7</td> </tr> <tr> <td>23</td> <td>2</td> <td>3</td> </tr> <tr> <td>5</td> <td>0</td> <td>5</td> </tr> </tbody> </table>	Number	Tens	Ones	87	8	7	23	2	3	5	0	5	1m	Award the mark if the pupil has used a dash or left the box empty to represent 0 for the number 5 in the Tens column, providing all the other numbers are completed correctly.
Number	Tens	Ones													
87	8	7													
23	2	3													
5	0	5													
17	<p>All number sentences must be completed correctly as shown for the award of the mark.</p> <p>For the addition:</p> $\boxed{36} + \boxed{6} = \boxed{42}$ <p>OR</p> $\boxed{6} + \boxed{36} = \boxed{42}$ <p>AND</p> <p>For the subtraction:</p> $\boxed{42} - \boxed{6} = \boxed{36}$ <p>OR</p> $\boxed{42} - \boxed{36} = \boxed{6}$	1m	Both number sentences must be correct for the award of the mark.												
18	10 (cards)	1m													

Qu.	Requirement	Mark	Additional guidance
19		1m	<p>Accept any other clear way of indicating the correct purses.</p> <p>Do not award the mark if additional purses are indicated, unless it is clear the correct purses are the pupil's final choice.</p>
20	<p>The correct calculation circled as shown:</p> $5 + 2$ $10 - 3$ $9 - 1$ $4 + 1$	1m	<p>Accept any other clear way of indicating the correct calculation.</p> <p>Do not award the mark if additional calculations are indicated, unless it is clear that the correct calculation is the pupil's final choice.</p>
21	<p>The correct shape is crossed as shown:</p> 	1m	<p>Accept any other clear way of indicating the correct answer.</p> <p>Do not award the mark if additional shapes are indicated, unless it is clear the correct shape is the pupil's final choice.</p>
22	30 (bricks)	1m	

Qu.	Requirement	Mark	Additional guidance
23	Number sentences completed as shown, i.e. $\boxed{90} - \boxed{70} = \boxed{20}$ OR $\boxed{90} - \boxed{20} = \boxed{70}$ OR $\boxed{90} - \boxed{50} = \boxed{40}$ OR $\boxed{90} - \boxed{40} = \boxed{50}$ OR $\boxed{70} - \boxed{50} = \boxed{20}$ OR $\boxed{70} - \boxed{20} = \boxed{50}$	1m	All three numbers must be correct for the award of the mark. Do not accept repeated numbers, e.g. $\boxed{40} - \boxed{20} = \boxed{20}$
24	16 (plums)	1m	
25	6 (rows)	1m	

Qu.	Requirement	Mark	Additional guidance
26	<p>Award TWO marks for the correct answer of 36 (people).</p> <p>If the answer is incorrect or missing, award ONE mark for evidence of a complete, correct method, e.g.</p> <ul style="list-style-type: none"> • $43 + 8 - 15 =$ (incorrect or no answer) • $43 - 15 = 30$ (error) $30 + 8 =$ (incorrect or no answer) <p>OR</p> <p>Award ONE mark for any of these partial methods correctly evaluated, i.e.</p> <ul style="list-style-type: none"> • $43 - 15 = 28$ • $43 + 8 = 51$ • $15 - 8 = 7$ <p>OR</p> <ul style="list-style-type: none"> • Sight of 7, 28 or 51 (as evidence of a partial method completed correctly) 	<p>2m</p> <p>OR</p> <p>1m</p>	<p>(Use the example responses given on pages 20 – 21 to help you determine how many marks can be awarded.)</p>
27	<p>All number sentences completed correctly as shown:</p> $\boxed{7} + 7 = 14$ $\boxed{17} + 7 = 24$ $\boxed{27} + 7 = \boxed{34}$ $\boxed{37} + 7 = 44$	1m	<p>All three numbers must be correct for the award of the mark.</p>

Qu.	Requirement	Mark	Additional guidance
28	<p>Award TWO marks for the correct answer of 60 (p).</p> <p>If the answer is incorrect or missing, award ONE mark for evidence of a complete, correct method, e.g.</p> <ul style="list-style-type: none"> • £1 – 15 – 25 = (incorrect or no answer) • 100 – 25 = 75 75 – 15 = (incorrect or no answer) • 15 + 25 = 30 (error) £1 – 30p = (incorrect or no answer) <p>OR</p> <p>Award ONE mark for any of these partial methods correctly evaluated, i.e.</p> <ul style="list-style-type: none"> • 25 + 15 = 40 • £1 – 25p = 75p • £1 – 15p = 85p <p>OR</p> <ul style="list-style-type: none"> • Sight of 40(p), 75(p) or 85(p) (as evidence of a partial method completed correctly) 	<p>2m</p> <p>OR</p> <p>1m</p>	<p>(Use the example responses given on pages 22 – 23 to help you determine how many marks can be awarded.)</p>
29	6 (strawberries)	1m	Award the mark for six strawberries clearly indicated on the diagram AND the answer box left blank.
30	15 (children)	1m	
31	<p>Award TWO marks for both numbers correct as shown:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> </div> <p>Award ONE mark for one number correct.</p>	<p>2m</p> <p>OR</p> <p>1m</p>	

[BLANK PAGE]

This page is intentionally blank.

9. Example responses

9.1 Examples of responses from question 26

Pyar: 2 marks

Show your working

$$43 \xrightarrow{-10} 33 \xrightarrow{-5} 28 \xrightarrow{+8} 36 = 36$$

people

2

Ruchi: 1 mark

Show your working

$$43 \xrightarrow{-10} 33 \xrightarrow{-5} 28 \xrightarrow{+8} 37$$

people

1

Pyar and Ruchi have used similar written methods to solve the problem.

Pyar has left the answer box blank but we can see the correct response in her working. Even though she has reversed a digit in her final answer, this is acceptable.

Pyar is awarded **TWO marks** for the correct answer of 36.

In contrast, Ruchi has recorded an incorrect response of 37 in the answer box. She has subtracted 15 from 43 but has made an arithmetic error. She then correctly completes her method by adding on 8.

Ruchi is awarded **ONE mark** for a complete, correct method.

Pam: 1 mark

Show your working

$$43 + 8 - 15 =$$

people

1

George: 1 mark

Show your working

$$15 - 8 = 8$$

$$43 - 8 =$$

people

1

Pam and George have both written methods that are creditworthy for **ONE mark**.

In her method, Pam has not evaluated any of her calculation. She is awarded **ONE mark** for a complete, correct method. In comparison, in his method, George evaluates his first step, but has made an arithmetic error. He then completes his method by subtracting the answer to his first step from 43.

George is awarded **ONE mark** for a complete, correct method.

9.1 Examples of responses from question 26 (continued)

Suki: 1 mark

Work area showing pictorial method with tallies and a final answer of 39 people. A 'Show your working' label is present. A circled '1' indicates the mark awarded.

Chaz: 0 marks

Work area showing pictorial method with tallies and a final answer of 27 people. A 'Show your working' label is present. A circled '0' indicates the mark awarded.

Suki and Chaz have used pictorial methods in an attempt to solve this problem. Both have provided incorrect answers in the final answer box.

In her method, Suki drew 43 tallies and correctly crossed out 15. She then drew 8 more tallies to complete her method. Although she miscounted her final total, her method is complete and correct.

Suki is awarded **ONE mark**.

Similarly, Chaz has also drawn 43 tallies but has then crossed out 16 rather than 15 of them. His method is therefore incorrect and incomplete. Chaz is awarded **no marks**.

Bella: 1 mark

Work area showing the calculation $43 - 15 + 8 = 36$ and a final answer box. A 'Show your working' label is present. A circled '1' indicates the mark awarded.

Nik: 1 mark

Work area showing the calculation $43 + 8 = 51$ and a final answer of 51 people. A 'Show your working' label is present. A circled '1' indicates the mark awarded.

Bella and Nik have both completed a first step correctly.

Bella has correctly subtracted 8 from 43. Therefore, she is awarded **ONE mark** for a partial method correctly evaluated.

Nik has completed $43 + 8$ as a first step and he has recorded 51 as his final answer. Like Bella, Nik is awarded **ONE mark** for a partial method correctly completed.

9.2 Examples of responses from question 28

Sian: 2 marks

Show your working

15 25 40 80

60

P

2

Amyran: 1 mark

Show your working

£1 - 25p - 15p = 50p

P

1

Sian and Amyran have left their final answer boxes blank but they both have a final answer in their working. Sian has listed numbers in her response but has not shown any calculations. However, she has clearly and correctly indicated 60 as her final answer. Sian is awarded **TWO marks**.

Unlike Sian, Amyran has recorded the calculations of a complete, correct method but with an arithmetic error. He is awarded **ONE mark** for his method.

Jay: 1 mark

Show your working

100 - 25 = 75 - 15 = 60

70

P

1

Elina: 0 marks

Show your working

100 30 £1
90 20 25
80 10 15p
70
60
50
40

50

P

0

In both their methods, Jay and Elina have converted £1 to 100 pence but their final answers are incorrect. Jay has attempted to subtract 25p and then 15p from 100p. He has made an arithmetic error in calculating $100 - 25$. Despite this, Jay is awarded **ONE mark** for a complete, correct method.

In contrast, Elina's method is not complete or correct. Elina appears to have counted back from 100 in steps of 10. Although 40 can be seen in her working, this is not evidence of a partial method completed correctly. Elina is awarded **no marks**.

9.2 Examples of responses from question 28 (continued)

Martin: 1 mark

Show your working

$$100 - 25 = 85$$

$$\begin{array}{r} 85 - \\ 15 \\ \hline 70 \end{array}$$

P

1

Tandi: 0 marks

Show your working

$$100 - 25 = 85$$

P

0

Both Martin and Tandi have incorrect answers, but they have provided methods in their responses.

As part of his method, Martin has subtracted 25p from 100p but he has made an arithmetic error. However, he goes on to subtract 15p from 85p to complete his method.

Martin is awarded **ONE mark** for a complete, correct method.

Tandi has not provided a complete, correct method. She has shown a partial method, $100 - 25$, but has made an arithmetic error. She is not awarded a mark for sight of 85p because it is not evidence of a partial method completed correctly. Therefore, she is awarded **no marks**.

Amar: 1 mark

Show your working

75 P

1

Billy: 0 marks

Show your working

65 P

0

Amar and Billy have both provided incorrect answers to the question without showing a method.

Amar has provided a final answer of 75p in the answer box. Although there is no evidence of a method, she is awarded **ONE mark** for sight of 75p.

In comparison, Billy has provided a final answer of 65p which is incorrect. He has not provided a method and his answer is not creditworthy. Billy is awarded **no marks**.



2022 key stage 1 mathematics test mark schemes

Paper 1: arithmetic and Paper 2: reasoning

Electronic PDF version product code: STA/22/8409/e ISBN: 978-1-78957-278-0

For more copies

Printed copies of this booklet are not available. It can be downloaded from

<https://www.primaryassessmentgateway.education.gov.uk> during May 2022, or afterwards from

<https://www.gov.uk/government/collections/national-curriculum-assessments-practice-materials>.

© Crown copyright 2022

Re-use of Crown copyright in test materials

Subject to the exceptions listed below, the test materials on this website are Crown copyright and you may re-use them (not including logos) free of charge in any format or medium in accordance with the terms of the Open Government Licence v3.0 which can be found on the National Archives website and accessed via the following link: www.nationalarchives.gov.uk/doc/open-government-licence. When you use this information under the Open Government Licence v3.0, you should include the following attribution: 'Contains material developed by the Standards and Testing Agency for 2022 national curriculum assessments and licensed under Open Government Licence v3.0' and where possible provide a link to the licence.



Exceptions – third-party copyright content in test materials

You must obtain permission from the relevant copyright owners, as listed in the '2022 key stage 1 tests copyright report', for re-use of any third-party copyright content which we have identified in the test materials, as listed below. Alternatively, you should remove the unlicensed third-party copyright content and/or replace it with appropriately licensed material.

Third-party content

These materials contain no third-party copyright content.

If you have any queries regarding these test materials, contact the national curriculum assessments helpline on 0300 303 3013 or email assessments@education.gov.uk.