

National curriculum tests

Key stage 1

Mathematics

Mark schemes

SAMPLE BOOKLET

Published July 2015

This sample test indicates how the national curriculum will be assessed from 2016. Further information is available on GOV.UK at www.gov.uk/sta.

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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 2014 national curriculum will be assessed for the first time in May 2016. The sample test and mark schemes set out how the new national curriculum will be assessed from 2016 onwards. This test has been developed to meet the specification set out in the test framework for mathematics at key stage 1. The test frameworks are on the GOV.UK website at www.gov.uk/sta.

A new test and mark scheme will be developed each year.

The key stage 1 tests will be marked internally by teachers to inform teacher assessment.

Scaled score conversion tables are not included in this document. Conversion tables are produced as part of the standard-setting process. As the sample tests are not subject to standard setting, they are not available for these tests. Scaled score conversion tables for the 2016 tests will be published at www.gov.uk/sta in June 2016.

A variety of questions has been included in this sample test to demonstrate the formats and curriculum content that pupils may encounter in a live test. A commentary is provided for any questions where it is useful.

This sample test mark scheme is provided to give teachers an indication of how to mark the tests. The mark schemes for the sample tests have been subject to a shorter process than the full, rigorous development process that is used for live mark schemes. The pupil examples are based on responses gathered from the test trialling process.

The sample test and mark schemes have been reviewed by teachers and other expert reviewers.

2. Structure of the key stage 1 mathematics test

The key stage 1 mathematics test materials comprise:

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

3. Content domain coverage

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

The references below are taken from the test framework. They document which areas of the content domain are assessed in each paper. For example, a question assessing 2M1 sets out to 'compare and order lengths, mass, volume / capacity and record the results using $>$, $<$ and $=$ ' and is taken from the year 2 programme of study.

Table 1: content domain coverage of the sample key stage 1 mathematics test

Paper 1: arithmetic		Paper 2: reasoning	
Question	Content domain reference	Question	Content domain reference
1	1C1	1	1N2b
2	2C1a	2	2N3
3	2N1	3	2M2
4	2C1a	4	1F1a
5	2N1	5	2C4
6	2C2	6	1G1a
7	1C4	7	1C8
8	2C2	8	2N2a
9	2C2	9	2P1
10	2C2	10	2N1
11	2C2	11	2M2
12	2N6	12	2C6
13	2C6	13	2N6
14	2C6	14	2G3
15	2C8	15	2M9
16	2C6	16	2F1a
17	2C6	17	2C4
18	2F1a	18	2S1/2S2b
19	2C2	19	2M3a/2M3b
20	2C2	20	2N4
21	2F1a	21	2G2a
22	2C2	22	2C8
23	2C3	23	2C3
24	2F1a	24	2C4
25	2F1a	25	2M4a
		26	2C8
		27	2C4
		28	2M1
		29	2C9b
		30	2F2
		31	2C8

4. Explanation of the mark schemes

The marking information for each question is set out in the form of tables which are in section 7 and 8 of this booklet.

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

The '**Mark**' column indicates the total number of marks available for each question 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 credit can be given for a correct method
- examples of some different types of correct response.

The '**Additional guidance**' column indicates alternative acceptable responses, and provides details of specific type of response which 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 help you mark consistently, the most frequent procedural queries are listed in section 5.2 along with the action you should take. Unless otherwise specified in the mark scheme, you should apply these following guidelines in all cases.

Exemplars are also included for the working mark questions in Paper 2: reasoning. This should act as a guide when you are marking these questions. We have included more exemplars than will appear in the mark schemes for the live 2016 tests.

5.2 General marking principles

Table 2: General marking principles

Possible issues when marking	
The pupil reverses a digit when recording.	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.
The pupil writes a transposed number as the answer.	Transposed numbers should not be awarded the mark; for example, an answer of '16' when the correct answer is '61' should not be marked as correct.
The pupil's response is numerically equivalent to the answer in the mark scheme.	The mark scheme will generally specify which equivalent responses are allowed. If this is not the case, award the mark unless the mark scheme states otherwise.
The pupil's answer is correct but the wrong working is shown.	Always award the mark(s) for a correct response unless the mark scheme states otherwise.
The correct response has been crossed (or rubbed) out and not replaced.	Do not give credit for legible crossed-out answers that have not been replaced Do not give credit for crossed-out answers that have been replaced by a further incorrect attempt.
The pupil has worked out the answer correctly and then written an incorrect answer in the answer box.	Give precedence to the answer given in the answer box over any other workings. There may be cases where the incorrect answer is due to a transcription error. You may check the pupil's intention and decide whether to award the mark.

Possible issues when marking	
More than one answer is given.	If all answers given are correct (or a range of answers is given, all of which are correct), award the mark unless the mark scheme states otherwise. If both correct and incorrect responses are given, do not award the mark unless the mark scheme states otherwise.
The pupil's response does not match closely any of the examples given in the mark scheme.	Judge whether the response corresponds with the answers in the requirement column of the mark scheme. Refer also to the Additional guidance column and to the examples of responses (where appropriate).
There appears to be a misread of numbers affecting the working.	In general, the mark should not be awarded. However, in two-mark questions that have a working mark, award one mark if the working is applied correctly using the misread numbers, provided that the misread numbers are comparable in difficulty to the original numbers. For example, if '243' is misread as '234', both numbers may be regarded as comparable in difficulty.
No answer is given in the expected place, but the correct answer is given elsewhere.	Where a pupil has shown understanding of the question, award the mark. In particular, 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.
The pupil's answer correctly follows through from earlier incorrect work.	'Follow through' marks may be awarded only when specifically stated in the mark scheme.

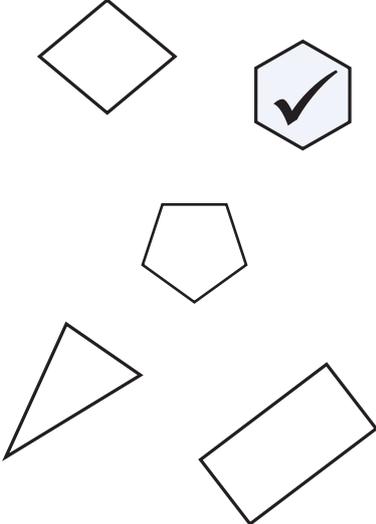
6. Internal moderation procedures

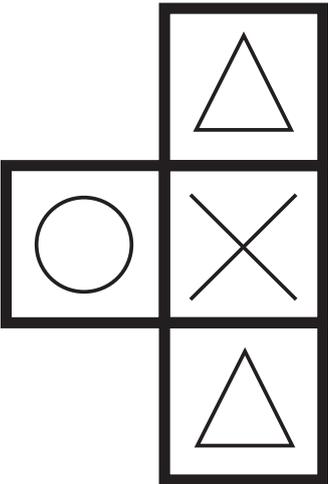
We recommend teachers involved in marking the key stage 1 tests undertake moderation activity to ensure marking is consistent across their school. Guidance is published on the GOV.UK website at www.gov.uk/sta.

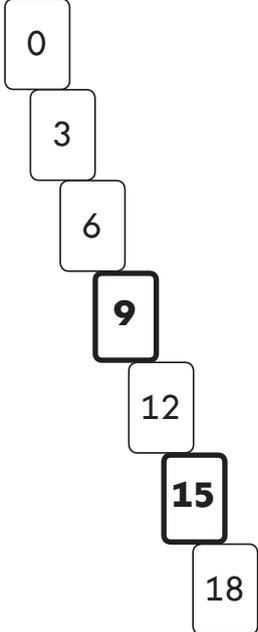
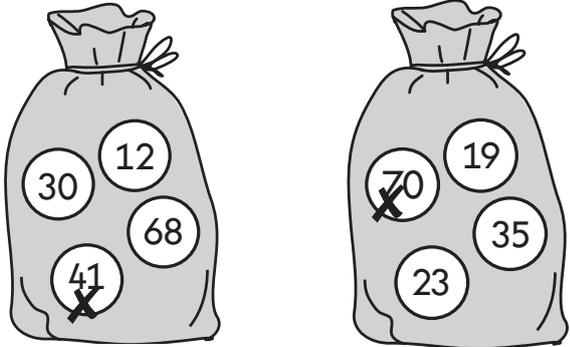
7. Mark schemes for Paper 1: arithmetic

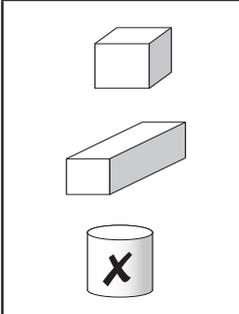
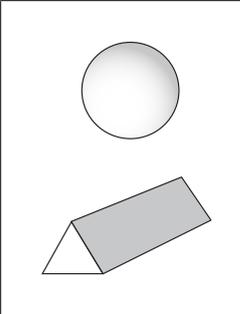
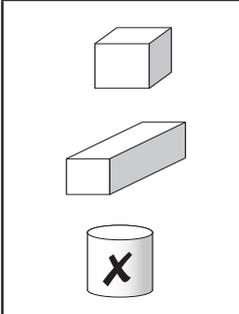
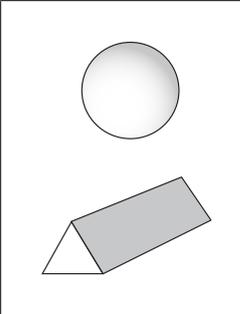
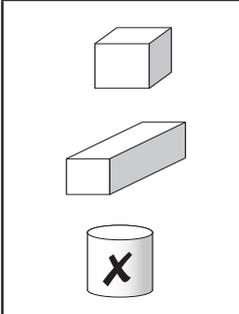
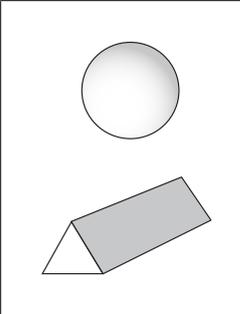
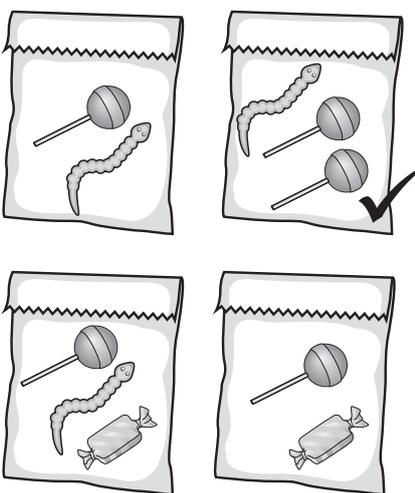
Qu.	Requirement	Mark	Additional guidance
P	6	none	Practice question
1	12	1m	
2	10	1m	
3	99	1m	
4	11	1m	
5	21	1m	
6	31	1m	
7	4	1m	
8	53	1m	
9	17	1m	
10	60	1m	
11	47	1m	
12	30	1m	
13	80	1m	
14	0	1m	
15	9	1m	Commentary question 15: Pupils are expected to count in threes and solve multiplication problems using repeated addition. (2C8/2N1)
16	6	1m	
17	7	1m	
18	5	1m	
19	81	1m	
20	65	1m	
21	15	1m	
22	52	1m	
23	28	1m	
24	7	1m	
25	30	1m	

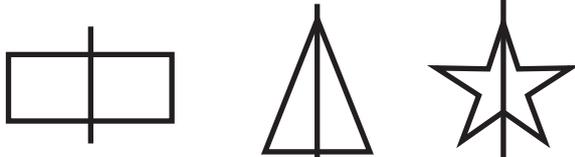
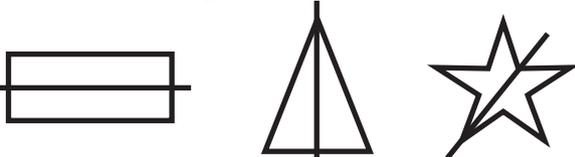
8. Mark schemes for Paper 2: reasoning

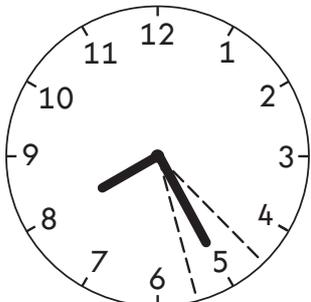
Qu.	Requirement	Mark	Additional guidance
Aural questions			
P	8 (ladybirds)	none	Practice question
1	23	1m	
2	9 (tens)	1m	Accept 'nine'. Also accept additional information, e.g. 9 (tens) and 6 Do not accept '90' (tens).
3	Measurement circled as shown: 2 cm 2 kg 2 °C (2l)	1m	Accept any other clear way of indicating the correct response.
4	2 (pieces of paper)	1m	
5	10 (cm)	1m	
Written questions			
6	Hexagon ticked as shown: 	1m	Accept any other clear way of indicating the correct shape, e.g. circling. Do not award the mark if other shapes are also indicated, unless it is clear that the correct shape is the pupil's final choice.
7	14 (shoes)	1m	

Qu.	Requirement	Mark	Additional guidance								
8	<table border="1" data-bbox="185 277 780 544"> <thead> <tr> <th data-bbox="185 277 483 344">words</th> <th data-bbox="483 277 780 344">digits</th> </tr> </thead> <tbody> <tr> <td data-bbox="185 344 483 412">thirty-eight</td> <td data-bbox="483 344 780 412">38</td> </tr> <tr> <td data-bbox="185 412 483 479">forty</td> <td data-bbox="483 412 780 479">40</td> </tr> <tr> <td data-bbox="185 479 483 544">ninety-four</td> <td data-bbox="483 479 780 544">94</td> </tr> </tbody> </table>	words	digits	thirty-eight	38	forty	40	ninety-four	94	1m	<p>Both parts must be correct for the award of the mark.</p> <p>Accept any reasonable spelling for 'forty', e.g. forte, fourtee, fort.</p> <p>Do not accept words that might indicate 'fourteen', e.g. fortin, OR 'four', e.g. for, fore.</p> <p>Accept reversed digits for '94', e.g. 'P4' provided that the order of the digits is not swapped.</p> <p>Do not accept 49, 4P etc.</p>
words	digits										
thirty-eight	38										
forty	40										
ninety-four	94										
<p>Commentary for question 8: An aspect of the new national curriculum requires pupils to be able to read and write numbers to at least 100 in numerals and in words.</p>											
9	<p>Pattern completed as shown:</p> 	1m	<p>All four shapes must be correct for the award of the mark.</p> <p>Accept any unambiguous drawing of the correct shapes.</p>								

Qu.	Requirement	Mark	Additional guidance
10	Pattern completed as shown: 	1m	Both numbers must be correct for the award of the mark.
11	11 (cm)	1m	Accept answers in the range: $10\frac{1}{2}$ (cm) to $11\frac{1}{2}$ (cm) inclusive.
12	Crosses drawn on 41 and 70 as shown: 	1m	Both numbers must be selected for the award of the mark. Accept any other clear way of indicating the correct numbers.
13	54 (crayons)	1m	

Qu.	Requirement	Mark	Additional guidance				
14	<p>Cross drawn on the cylinder, as shown:</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="width: 50%;">Shapes with a square face</th> <th style="width: 50%;">Shapes without a square face</th> </tr> </thead> <tbody> <tr> <td>  </td> <td>  </td> </tr> </tbody> </table>	Shapes with a square face	Shapes without a square face			1m	<p>Accept any other clear way of indicating the cylinder.</p> <p>Do not award the mark if other shapes are indicated, unless it is clear that the correct shape is the pupil's final choice.</p> <p>Accept a tick that is near to the correct answer, so as long as it is unambiguous as to which shape is identified.</p>
Shapes with a square face	Shapes without a square face						
							
15	<p>Tick drawn on the correct bag, as shown:</p> 	1m	<p>Accept any other clear way of indicating the correct bag.</p> <p>Do not award the mark if other bags are indicated, unless it is clear that the correct bag is the pupil's final choice.</p> <p>Accept a tick that is near to the correct answer, so as long as it is unambiguous as to which bag is identified.</p>				
16	<p>Correct fraction written in the box, as shown:</p> <table border="1" style="margin-left: 20px;"> <tr> <td style="text-align: center; padding: 5px;"> $\frac{1}{4}$ </td> </tr> </table>	$\frac{1}{4}$	1m	<p>Also accept $\frac{1}{4}$ written in words, e.g. 'one quarter'.</p>			
$\frac{1}{4}$							
<p>Commentary for question 16: Being able to recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ of a length, shape, set of objects or quantity is an expectation of the new national curriculum for key stage 1 mathematics (2F1a).</p>							
17	20 (cards)	1m					
18a	10 (animals)	1m					
18b	4	1m	Do not accept 7 – 3				

Qu.	Requirement	Mark	Additional guidance
19a	Three coins ticked as shown: 	1m	Accept any other clear way of indicating the correct coins.
19b	Four coins ticked as shown:  OR 	1m	Accept any other clear way of indicating the correct coins.
20	25	1m	
21	Line of symmetry drawn on each shape; e.g.  Accept correct lines of symmetry in other orientations; e.g. 	1m	All three lines of symmetry must be correct for the award of the mark. Accept slight inaccuracies in the line of symmetry as long as the intention is clear. (As a guide, the line of symmetry should be within 3mm of a vertex, or the midpoint of the shape.) Accept more than one line of symmetry on any shape provided that each line is within the tolerance stated. Do not award the mark if incorrect lines are drawn on shapes.
22	Award TWO marks for the correct answer of 10 (carrots). If the answer is incorrect, award ONE mark for evidence of appropriate method, e.g. <ul style="list-style-type: none"> $3 \times 4 = 12$ $12 - 2 =$ 	2m OR 1m	Award ONE mark for a complete correct method. (Use the acceptable and unacceptable responses given on pages 18 to 21 to help you make your decision.)

Qu.	Requirement	Mark	Additional guidance
23	Award the mark for either calculation: $\boxed{31} + \boxed{26} = \boxed{57}$ OR $\boxed{26} + \boxed{31} = \boxed{57}$	1m	
24	Sum completed as shown: $\boxed{7} \boxed{9} + \boxed{4} = \boxed{8} \boxed{3}$ OR $\boxed{7} \boxed{8} + \boxed{5} = \boxed{8} \boxed{3}$ OR $\boxed{7} \boxed{7} + \boxed{6} = \boxed{8} \boxed{3}$ OR $\boxed{7} \boxed{6} + \boxed{7} = \boxed{8} \boxed{3}$ OR $\boxed{7} \boxed{5} + \boxed{8} = \boxed{8} \boxed{3}$	1m	Do not accept more than one digit in each box. Do not accept $70 + 13 = 83$
25	Minute hand drawn within the tolerances shown: 	1m	Accept minute hand drawn between $22 \frac{1}{2}$ minutes past to $27 \frac{1}{2}$ minutes past (inclusive). Accept any length clock hand drawn as long as it is within the range given above.

Commentary for question 25: Being able to draw hands on a clock face to five minutes is an expectation of the new national curriculum for key stage 1 mathematics (2M4a).

Qu.	Requirement	Mark	Additional guidance
26	<p>Calculation ticked as shown:</p> <p>$20 + 5 = 25$ <input type="checkbox"/></p> <p>$20 - 5 = 15$ <input type="checkbox"/></p> <p>$20 \div 5 = 4$ <input checked="" type="checkbox"/></p> <p>$20 \times 5 = 100$ <input type="checkbox"/></p>	1m	<p>Accept any other clear way of indicating the correct calculation.</p> <p>Do not award the mark if other calculations are indicated unless it is clear that the correct calculation is the pupil's final choice.</p>
27	<p>Award TWO marks for the correct answer of: 12 (raisins).</p> <p>If the answer is incorrect, award ONE mark for evidence of appropriate method, e.g.</p> <ul style="list-style-type: none"> $50 - 23 = 27$ $27 - 15 =$ 	<p>2m</p> <p>OR</p> <p>1m</p>	<p>Award ONE mark for a complete correct method.</p> <p>(Use the acceptable and unacceptable responses given on pages 22 to 25 to help you make your decision.)</p>
28	<p>Both signs written correctly as shown:</p> <p>Cheetah's mass <input type="text" value="<"/> Tiger's mass</p> <p>Tiger's mass <input type="text" value="="/> Lion's mass</p>	1m	<p>Accept any unambiguous drawing of the correct symbol.</p> <p>Do not accept words instead of signs, e.g. do not accept 'less than' in place of the '<' sign.</p>
<p>Commentary for question 28: Pupils are expected to be able to use inequality signs to compare measures (2M1).</p>			
29	<p>A correct decision for each pair of calculations, as shown below:</p> <p><u>yes</u></p> <p><u>yes</u></p> <p><u>no</u></p> <p><u>no</u></p>	1m	<p>All decisions must be correct for the award of the mark.</p> <p>Accept any other clear way of indicating the correct decisions, e.g.</p> <p>'Y' or ✓ or 'true' for 'yes'</p> <p>'N' or ✗ or 'false' for 'no'.</p>
<p>Commentary for question 29: Knowing the commutivity laws for the four operations is a new requirement for key stage 1 mathematics. (2C9b/2C9a)</p>			

Qu.	Requirement	Mark	Additional guidance
30	Both fractions circled as shown: $\left(\frac{1}{2}\right)$ $\frac{1}{3}$ $\left(\frac{2}{4}\right)$ $\frac{3}{4}$	1m	Accept any other clear way of indicating the correct fractions. Do not award the mark if other fractions are indicated unless it is clear that the correct two fractions are the pupil's final choice.
<p>Commentary for question 30: The only pair of equivalent fractions key stage 1 pupils are expected to recognise is $\frac{1}{2}$ and $\frac{2}{4}$ (2F2).</p>			
31	Award ONE mark for the answer 12 as shown: $3 \times 8 = 2 \times \boxed{12}$	1m	
<p>Commentary for question 31: This question is demanding as the pupil needs to solve a problem through mathematical reasoning. The pupil is expected to count in threes and solve multiplication and division facts using mental methods and repeated addition (2C8).</p>			

9. Exemplar responses

9.1 Examples of responses from question 22

Pupil's must show a complete, correct method for the award of the method mark. The working may contain one or more arithmetic errors.

2 marks

1 mark

Declan has been awarded **two** marks because he has recorded the correct answer even though it is not within the answer box. **Petra** has recorded a complete pictorial method but has not evaluated her final answer; therefore she is awarded **one** mark.

Declan

carrots 2

Petra

carrots 1

1 mark

0 marks

Molly has made an arithmetic error when totalling four groups of 3. An invisible step; i.e. $9 - 2$, can be assumed because she has the answer 7, and therefore she is awarded **one** mark for a complete correct method. **Joel** has made a similar arithmetic error in totalling the four 3s. For his second step we cannot assume he attempted to subtract 2, as he has not reached the answer of 7; therefore **no mark** can be awarded.

Molly

7 carrots 1

Joel

6 carrots 0

Examples of responses from question 22 continued

1 mark

0 marks

Chen has recorded a complete method; i.e. he has multiplied 4 by 3 and subtracted 2. If he had not made an arithmetic error in calculating 4×3 , he would have reached the correct final answer. Consequently he can be awarded **one** mark. **Jenny** has calculated 4×3 correctly, but has failed to subtract 2, to complete the method, so **no** mark can be awarded.

Chen

$4 \times 3 = 16$
 $16 - 2 = 14$
 14 carrots (1)

Jenny

$4 \times 3 = 12$
 12 carrots (0)

1 mark

0 marks

Jaya and **Tom** have used a counting on method for the first part of the problem. **Jaya** has made four jumps of 3, but has made an error in her third jump. Although she has not shown the next step in the problem, we can see that she has subtracted 2 as $13 - 2 = 11$. She has recorded a complete, correct method so **one** mark can be awarded. **Tom** has not made any arithmetic errors in repeatedly adding 3. He has recorded four jumps of 3, but did not start from 0. This is not a correct method for calculating 4×3 , so **no** mark can be awarded.

Jaya

3 6 9 13
 11 carrots (1)

Tom

$15 - 2 = 13$
 3 6 9 12 15
 15 carrots (0)

Examples of responses from question 22 continued

1 mark

0 marks

Craig and **Omar** have used pictorial representations to illustrate the rows of carrots. **Craig** has done this correctly and clearly shown the subtraction of 2; however he has miscounted the remaining carrots. He has recorded a complete, correct method so **one** mark can be awarded. **Omar** has made an error in recording the carrots, possibly confusing the number of rows and the number of carrots in each group. Although he subtracts 2 to complete the calculation, it is not a fully correct method, so **no** mark can be awarded.

Craig

Craig's response shows a pictorial representation of 13 carrots (two groups of 3 and one group of 2). Two carrots are crossed out. Below the drawing is a box containing '11 carrots' and a circled '1'.

Omar

Omar's response shows a pictorial representation of 13 carrots (two groups of 3 and one group of 2). Two carrots are crossed out. Below the drawing is a box containing '11 carrots' and a circled '0'.

1 mark

0 marks

Jasmine has recorded a complete method with an arithmetic error. She calculates four lots of 3 (=13) incorrectly, but goes on to complete the method by subtracting 2 and is awarded **one** mark. **Kim** may have intended to follow the same procedure, but because she has only recorded three groups of 3, we cannot be assured of her method for calculating 4×3 , so **no** mark can be awarded.

Jasmine

Jasmine's response shows the written method: '4 lots of 3 is 13' and '13 - 2 = 11'. Below is a box containing '11 carrots' and a circled '1'.

Kim

Kim's response shows the written method: '3 + 3 + 3 - 2'. Below is a box containing '11 carrots' and a circled '0'.

Examples of responses from question 22 continued

1 mark

0 marks

Hannah and **Seija** have both recorded part of their method. **Hannah** has correctly calculated 4×3 mentally before recording the result and subtracting 2 from it ($12 - 2$). Although she made an arithmetic error in her subtraction she has a complete, correct method so **one** mark can be awarded. **Seija** may have carried out the same procedure, but because she has not recorded her working for the first part, we cannot be sure how her 13 was obtained. Therefore **no mark** can be awarded.

Hannah

12-2

11 carrots 1

Seija

13 carrots - 2 carrots

11 carrots 0

1 mark

0 marks

Simon and **Maria** have both recorded the second part of the method, like **Seija**. However **Simon** has shown four groups of 3 (the first part of the method) and we can assume he has miscounted to reach his 11. He has shown a complete, correct method so **one** mark can be awarded. **Maria** may have mentally calculated 4×3 (wrongly), but because she has not recorded her working for that part, we cannot be sure how her 11 was obtained. Therefore **no mark** can be awarded.

Simon

3 3 3 3

11-2=9

9 carrots 1

Maria

11-2=9

9 carrots 0

9.2 Examples of responses from question 27

Pupils must show a complete, correct method for the award of the method mark. The working may contain one or more arithmetic errors.

2 marks

0 marks

Mateuz has given the correct answer and is awarded **two** marks. Even though **Esma** may have intended to write 12, as she has not recorded a method we cannot be sure and must read her answer as 21. Therefore **no** mark can be awarded.

Mateuz

Handwritten work for Mateuz:

$$\begin{array}{r} 20 \\ -23 \\ \hline 30 - 3 = 27 \end{array}$$

27 12 =

12 raisins (2)

Esma

Handwritten work for Esma:

51 raisins (0)

1 mark

0 marks

Rajesh has shown a complete, correct method (i.e. he has subtracted both 23 and 15 from 50). Although he has made an arithmetic error, **one** mark can be awarded for the correct method. **Kayleigh** has shown that she intends to subtract 23 from 50, but, because her answer is incorrect, it is not clear what operation she has performed with the 15, so **no** mark can be awarded.

Rajesh

Handwritten work for Rajesh:

$$50 - 23 - 15 = 22$$

22 raisins (1)

Kayleigh

Handwritten work for Kayleigh:

$$50 - 23 \quad 15 = 14$$

raisins (0)

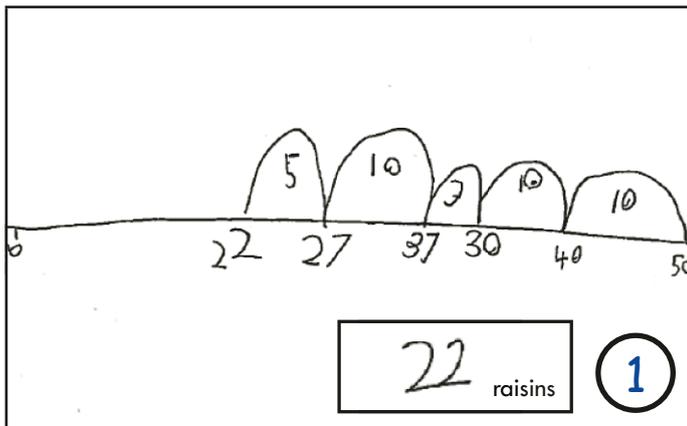
Examples of responses from question 27 continued

1 mark

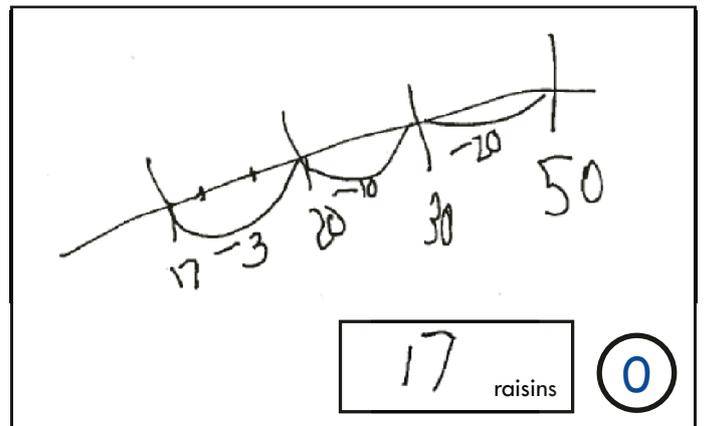
0 marks

Jessica and **Ryan** have both used a number line to record their calculations. **Jessica** has partitioned the 23 and 15, before subtracting each part. She made an arithmetic error in taking away 23 (10 and 10 and 3), but has attempted to subtract all parts of the 23 and 15 from 50, so is awarded **one** mark. **Ryan** has also attempted to partition the numbers, but has not completed the task. He has subtracted 23 (20 and 3), but only taken away part of the 15. His method is incomplete, so **no mark** can be awarded.

Jessica



Ryan



1 mark

0 marks

Neela has recorded a complete method, so is awarded **one** mark. She began by subtracting 23 from 50 correctly, to find 27. She then attempted to take away 15 from 27 by partitioning each number and subtracting the correct parts, but made an arithmetic error in $7 - 5 = 3$. **Joe** has only completed the first step of the problem. He is not awarded a mark as his method is incomplete.

Neela

$$50 - 23 = 27$$

$$20 - 10 = 10$$

$$7 - 5 = 3$$

Below the equations is a box containing '13 raisins' and a circled '1'.

Joe

$$50 - 23 = 27$$

Below the equation is a box containing '27 raisins' and a circled '0'.

Examples of responses from question 27 continued

1 mark

0 marks

Charu and **Arun** have both used a descriptive method to record their working. Although **Charu** has made two arithmetic errors, she has described the complete method and can be awarded **one** mark. **Arun** has recognised that he needs to subtract, but has failed to provide sufficient description of the numbers he would take away, so **no mark** can be awarded.

Charu

I put 50 in my head then I took away 23 and got 37 and then I took away 15 and got 21

21 raisins 1

Arun

going in my head back wards

0 raisins 0

1 mark

0 marks

Amir and **Bethany** have both used pictorial representations of their methods. **Amir** has used 50 small circles to represent 50 raisins (drawing separate sets of 23 and 15 small circles to represent Ben and Amy's raisins); he has then coloured 23 of the 50 for Ben and another 15 for Amy, leaving 12 uncoloured circles. Although he has miscounted the 12 circles to give his answer of 13, he has shown a complete, correct method and is awarded **one** mark. **Bethany** has represented the 50 raisins with 50 small lines, but has drawn loops around 16 and 21 small lines, showing a wrong method, so **no mark** can be awarded.

Amir

50 Ben amy 15

13 raisins 1

Bethany

$50 - 20 - 10 = 30$
 $30 + 5 = 35$

13 raisins 0

Examples of responses from question 27 continued

1 mark

0 marks

Jack and **Sinead** have both recorded part of the correct method. **Jack** has recorded the first step of the problem but has made an arithmetic error ($50 - 23 = 37$). We can assume that he has then subtracted 15, as $37 - 15 = 22$, which is the answer that he has given. This illustrates a complete, correct method and **one** mark is awarded. **Sinead** has recorded the first step of the problem without any error ($50 - 23 = 27$). However, we cannot assume that she has then subtracted 15, as the answer she has given for $27 - 15$ is not correct. Consequently **no mark** can be awarded.

Jack

$50 - 23 = 37$

22 raisins

1

Sinead

$50 - 23 = 27$

13 raisins

0



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