2018 national curriculum assessments

Key stage 1

Teacher assessment exemplification

Mathematics

Standards & Testing Agency

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Contents

Guidance

Teacher assessment judgements

- Teachers should assess their pupils according to their school's assessment policy and use the statutory teacher assessment framework[1] to make a judgement at the end of the key stage. This judgement should be based on day-to-day evidence from the classroom, which shows that a pupil has met the 'pupil can' statements in the framework.
- Pupils will demonstrate their understanding by representing and explaining their thinking in different ways. This includes: use of resources, pictures, symbols and contexts to model and demonstrate understanding, accompanied by verbal explanation of thinking. We have given examples of what the pupils have said. There is no requirement to scribe this in their work.
- Teachers should not produce evidence specifically for the purpose of local authority moderation. However, a sample of evidence from the pupil's classroom work must support how teachers reached their judgements.
- Local authorities may find it useful to refer to the exemplification materials to support external moderation visits. The materials show what meeting the 'pupil can' statements might look like for each standard. However, moderators should not expect or require teachers to provide specific evidence similar to the examples in this document. Evidence will come from day-to-day work in the classroom and can be work taken from textbooks.
- Evidence will come from day-to-day work in the classroom and should include work from different curriculum subjects, although a pupil's work in mathematics alone may produce the range and depth of evidence required. A pupil's answers to specific questions in the statutory end-of-key stage 1 mathematics test, or any other test, may provide evidence that pupils have met certain statements. Teachers must also refer to test outcomes as evidence to support their judgement overall.

Using exemplification materials

- Exemplification materials provide examples of pupils' work to support teachers in making judgements against the statutory teacher assessment framework at the end of the key stage. If teachers are confident in their judgements, they do not need to refer to this document.
- Exemplification materials illustrate only how 'pupil can' statements in the frameworks might be met. They do not dictate a particular method of teaching or evidence expected from the classroom, which will vary from school to school.
- Photographs and transcript evidence have been used to demonstrate how a teacher may make judgements based on their day-to-day observations of how a pupil applies their knowledge to their work. There is no expectation that teachers will collect specific evidence, such as that shown in this exemplification material, to support their judgements, or for the purposes of local authority moderation.

[1] www.gov.uk/government/publications/teacher-assessment-frameworks-at-the-end-of-key-stage-1

Key stage 1 mathematics teacher assessment framework

Teachers should follow the guidance for using this mathematics framework set out in the complete teacher assessment frameworks.

Working towards the expected standard

The pupil can:

- read and write numbers in numerals up to 100
- partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources[1] to support them
- add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30)
- recall at least four of the six[2] number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4)
- count in twos, fives and tens from 0 and use this to solve problems
- know the value of different coins
- name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres).

[1] For example, base 10 apparatus.

[2] Key number bonds to 10 are: 0+10, 1 + 9, 2 + 8, 3 + 7, 4 + 6, 5 + 5.

Working at the expected standard

The pupil can:

- read scales* in divisions of ones, twos, fives and tens
- partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus
- add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17)
- recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14)
- recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary
- identify $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$, of a number or shape, and know that all parts must be equal parts of the whole
- use different coins to make the same amount
- read the time on a clock to the nearest 15 minutes
- name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.

* The scale can be in the form of a number line or a practical measuring situation.

Working at greater depth

The pupil can:

- read scales* where not all numbers on the scale are given and estimate points in between
- recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts
- use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. 29 + 17 = 15 + 4 + ☐ ; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc)
- solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?')
- read the time on a clock to the nearest 5 minutes
- describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions).

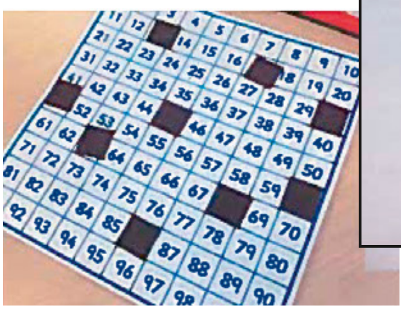
* The scale can be in the form of a number line or a practical measuring situation.

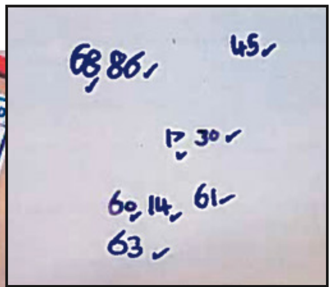
Working towards the expected standard

Statement	The pupil can read and write numbers in numerals up to 100.
Context	Pupils worked in pairs to play a game, sitting with a whiteboard frame between them. Pupil A read numbers from a 100 square to pupil B, who then had to write them down on their side of the whiteboard. The teacher covered specific numbers on the grid for pupils to read, so that easy checking could take place. The pupils each had a turn at reading and writing the numbers and, although the first example is not fully correct, both pupils demonstrated sufficient ability to read and write numbers correctly.

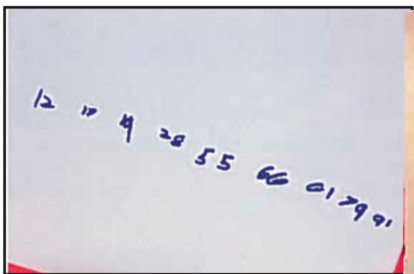
Numbers for reading were covered with a square to aid the teacher to match the writing of numbers to those read.

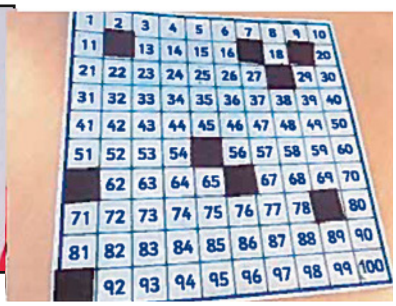
Children sat with a whiteboard frame between them, so that the writer can not see the numbers on the 100 square.





Pupil A's writing of the numbers that pupil B read to her.





Pupil B's writing of the numbers that Pupil A read to him.

Working towards the expected standard

Statement	The pupil can: ● read and write numbers in numerals up to 100 ● partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them
Context	Pupils had been developing their understanding of place value through a range of activities, representing numbers using equipment such as bead strings, coins, bundles of straws and using base ten apparatus. They had also explored the meanings of ‘<’ and ‘>’ signs. The first example demonstrates the ability to read, write and compare numbers, using the inequality symbols. The teacher also noted that the pupil used dienes apparatus for some of the examples and was able to talk about the value of each digit, demonstrating understanding of place value. In the other example the teacher has selected numbers where the digits are the same, providing the opportunity for pupils to demonstrate their understanding of place value when the same digit is placed in different positions.

97 > 80 ✓

17 < 47 ✓

80 > 72 ✓

31 > 17 ✓

94 > 56 ✓

51 > 41 ✓

56 < 63 ✓

41 < 47 ✓

39 < 88 ✓

51 < 56 ✓

“I am learning to use < and > signs.”

80 > 18

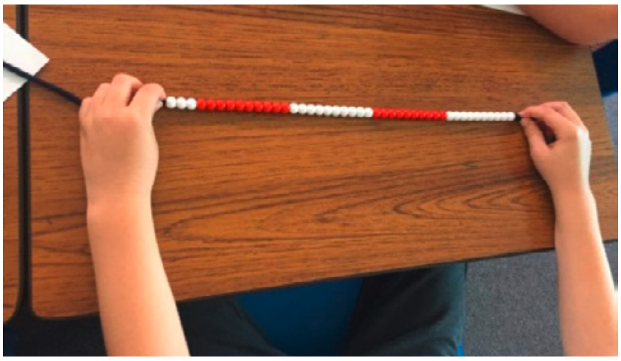
18 80

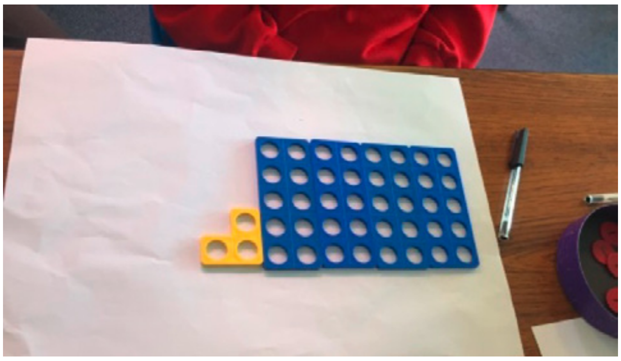
18 is ouer that 80

“I know that 80 is bigger than 18 because 80 has 8 tens and no extra ones, but 18 is only one 10 and 8.”

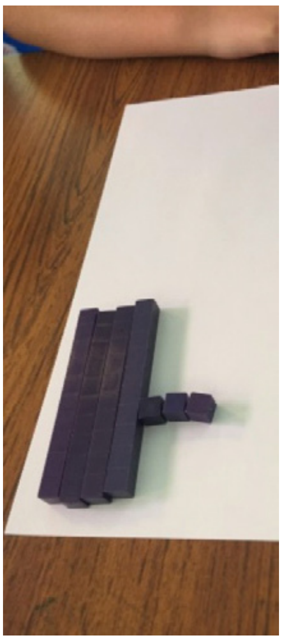
Working towards the expected standard

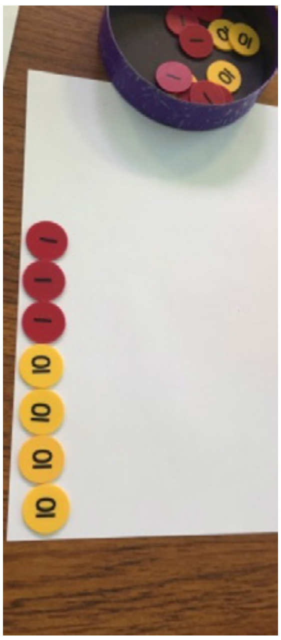
Statement	The pupil can partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them.
Context	Pupils had been developing their understanding of place value through a range of activities, representing numbers using equipment such as bead strings, number frames, coins, bundles of straws and base ten apparatus. During this activity, each pupil made 43 with a different resource, and explained how they had made it. They were then asked: "What is the same and what is different about the way 43 is represented?" This example illustrates how one pupil made 43 using the bead string, evidencing a clear understanding of partitioning into tens and ones. The pupil explained that all of the pupils had used 4 tens to represent 40 plus 3, and he identified how the resources differed in their representation of 43.





"I knew 4 tens would be 40 and went 10, 20, 30, 40. Then I got 3 ones to make 43. Without those it would be 40."

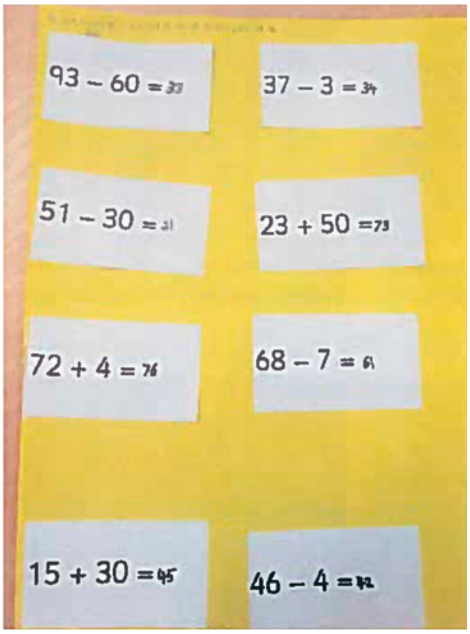


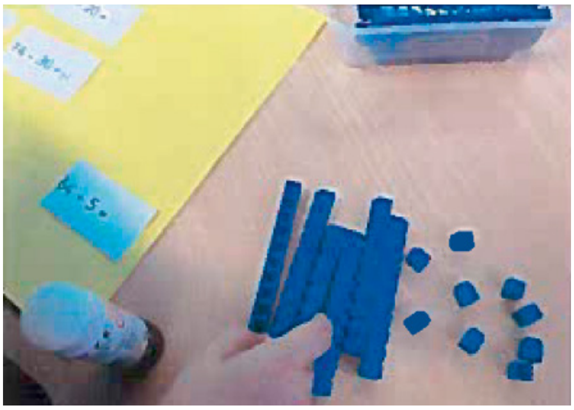


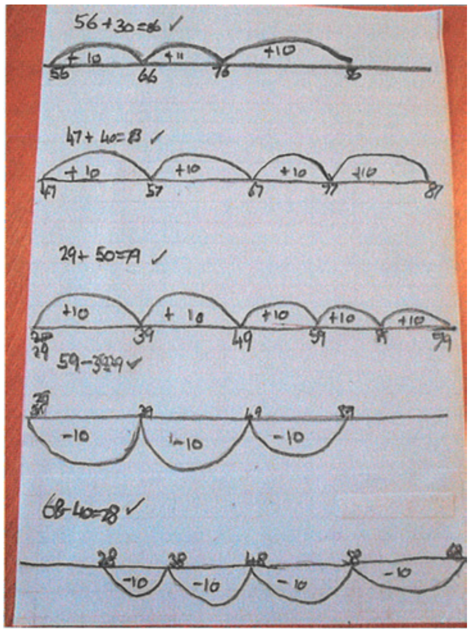
"All of them have 4 tens plus 3. The plates are different to the place value counters because they are all separate."

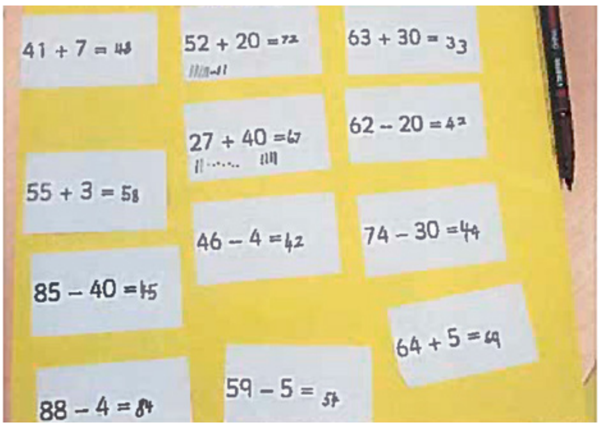
Working towards the expected standard

Statement	The pupil can add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30).
Context	The pupils had been working on addition and subtraction calculations. In the middle of the table was a range of addition and subtraction problems to solve. This included some adding/subtracting multiples of 10, to a two-digit number and some adding/subtracting single digits to a two-digit number. The pupils had to select a calculation, stick it to their paper and then solve it. They could use 2 different forms of tens and ones apparatus to help them. The pupils worked independently and confidently, using the available apparatus. One pupil also used the strategy of drawing 'rods and dots' to represent the tens and ones as a method for 2 of his addition calculations. Although one of the answers in the bottom right example is incorrect, the pupils have nevertheless demonstrated sufficient ability in this area.



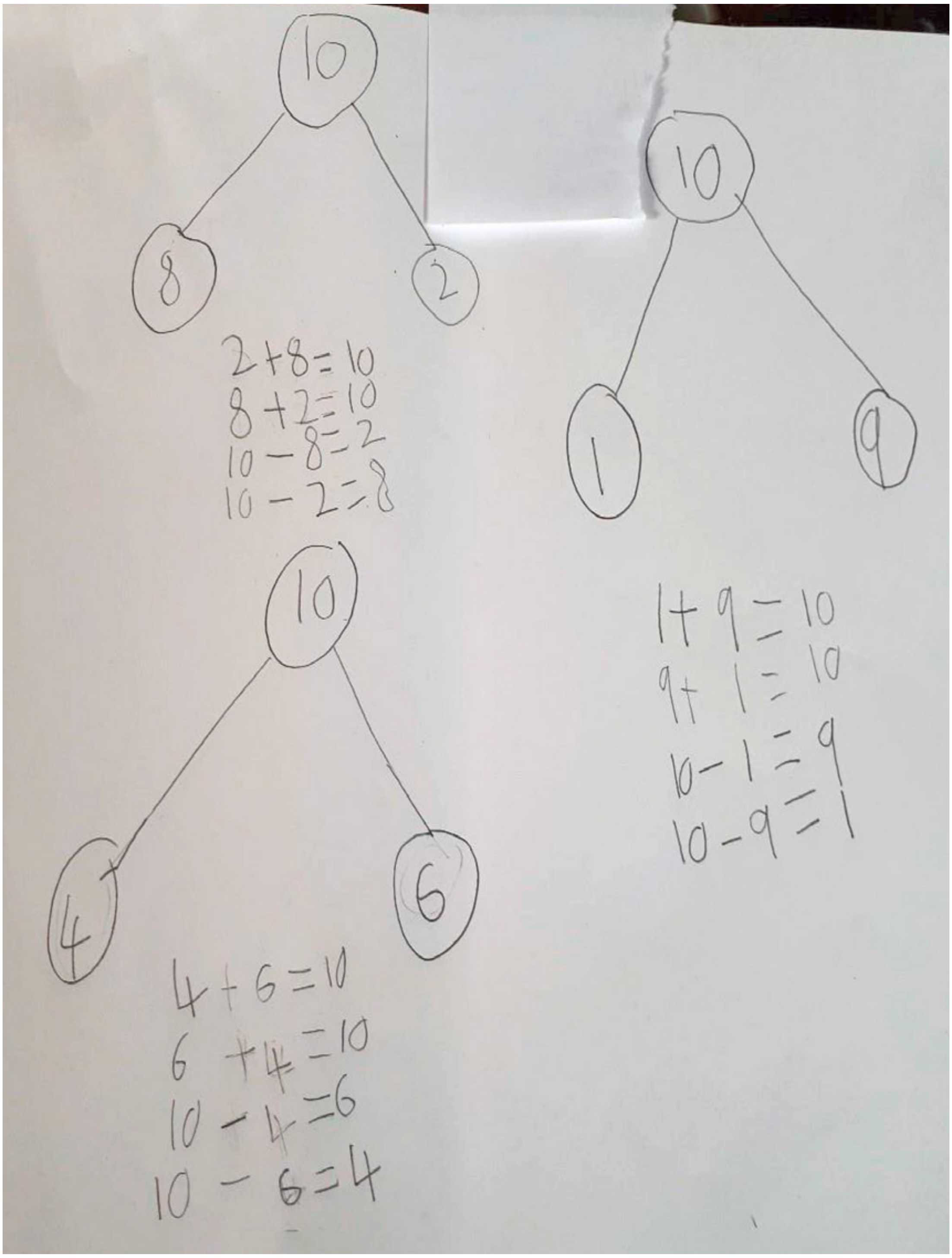






Working towards the expected standard

Statement	The pupil can recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4).
Context	The pupils had to recall number bonds to 10 and then independently think about, and record, what else they knew. An example is shown below.



Working towards the expected standard

Statement	The pupil can recall at least four of the six number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4).
Context	The class had recently been to the library to meet an author and this was used as the context for a problem. The teacher explained: "Imagine there are 2 authors in a library: author X and author Y. Ten pupils have to choose which author to listen to, author X or author Y. How many pupils could choose to listen to author X and how many could choose to listen to author Y?" Once the pupils had suggested and recorded one possibility, they were asked: "Is there another way? Have you got them all?" In this example the pupil recorded 8 additions. When he wrote 2 + 8 = 10 then 8 + 2 = 10 he said: "The numbers are swapped round but it is the same." Asked how it was different in the problem, he explained that 2 pupils went to the first author in the first calculation but 8 went to that author in the second calculation. The pupils had all written 2 + 8 = 10 as one of their calculations so the teacher pointed this out and said: "Let's imagine that 2 pupils go to one author and 8 to the other. They then come back together. Two of the pupils go to the toilet. How many pupils are left? How do you know? Can you write this as a calculation?" The evidence below shows the recorded response from one pupil who initially wrote 10 – 2 = 8. The pupil explained: "It's 10 take away 2, equals 8. If you had 10 and 2 go off, you would have 8. It's just backwards." The pupils were then asked: "Is there another subtraction you know because you know 2 add 8 equals 10?" The pupil wrote 10 – 8 = 2 and said: "You can't swap the 10 and 8, but you can swap the 8 and 2."

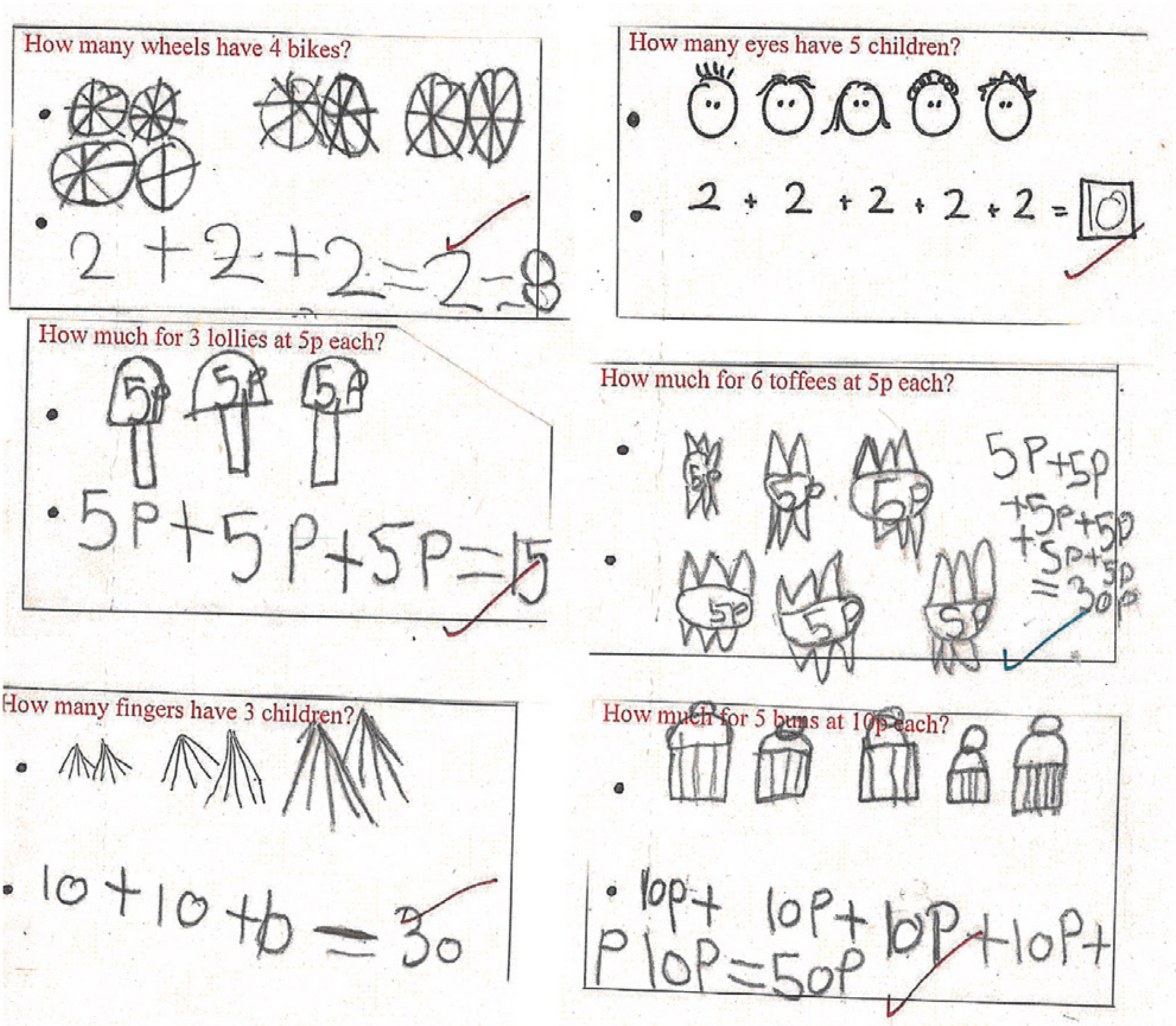
5+5=10
2+8=10
8+2=10
9+1=10
10+0=10
1+9=10
6+4=10
4+6=10

10−5=5
10−2=8
10−8=2

"There are 10 pupils in a library and 2 authors doing readings. How many pupils could go to listen to each author, if every pupil goes to one of them?"

Working towards the expected standard

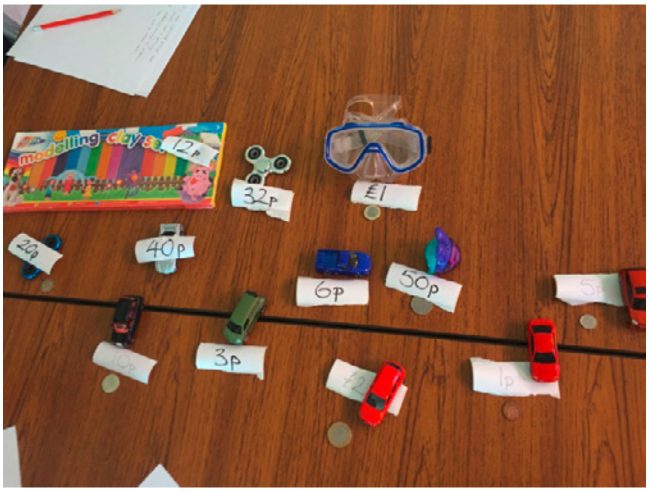
Statement	The pupil can count in twos, fives and tens from 0 and use this to solve problems.
Context	The pupils were asked to find or create situations which involved counting in twos, fives and tens. Following discussions with the pupils, they were given some questions to apply their knowledge.



Working towards the expected standard

Statement	The pupil can know the value of different coins.
Context	The class had been collecting items for the school fair and the teacher used these to set up a toy stall. She made some price labels; some were for values that matched coins and some were not. The pupils were asked to identify items they could pay for using just one coin, and then to find the coin in the purse. The example below shows that the pupil placed the £1, 50p and 20p coins next to the items with these labels, finding each coin in the purse in turn and explaining how she knew which coin was which. The pupils were asked why they could not buy the other items with just one coin. The pupil explained that 32p "does not exist as a real coin". When asked what other coins there might be in the purse that had not been used, the pupil suggested £2, 10p, 5p and 1p. She chose items for the stall to go with the labels she had suggested and matched the coins to the labels.

"These things are for the summer fair – here are the price tags. Can you put a price on each item? I have a purse with coins. Which items do you think I can pay for exactly using just one coin?"



"£1 now has lots of sides – it looks a bit like the £2; I got mixed up once."

"I have lots of these [20p coins] at home. I know what they look like."

Working towards the expected standard

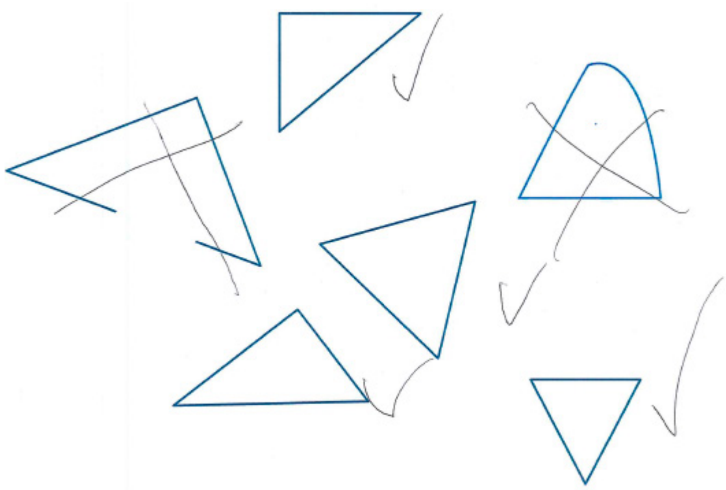
Statement	The pupil can name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes, and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres).
Context	The class were given a sheet of shapes and asked to identify the triangles, and to justify their thinking. The shapes were chosen to make the pupils use their understanding of the properties of a triangle, with some close non-examples included. They explored other shapes in a similar way. The evidence below shows how one pupil was able to distinguish between the triangles and non-triangles and explain her thinking; she also did this for other 2-D shapes.

"Which of these shapes are triangles? How do you know?"

"That's a triangle: 1, 2, 3." The pupil pointed at the sides as she counted.

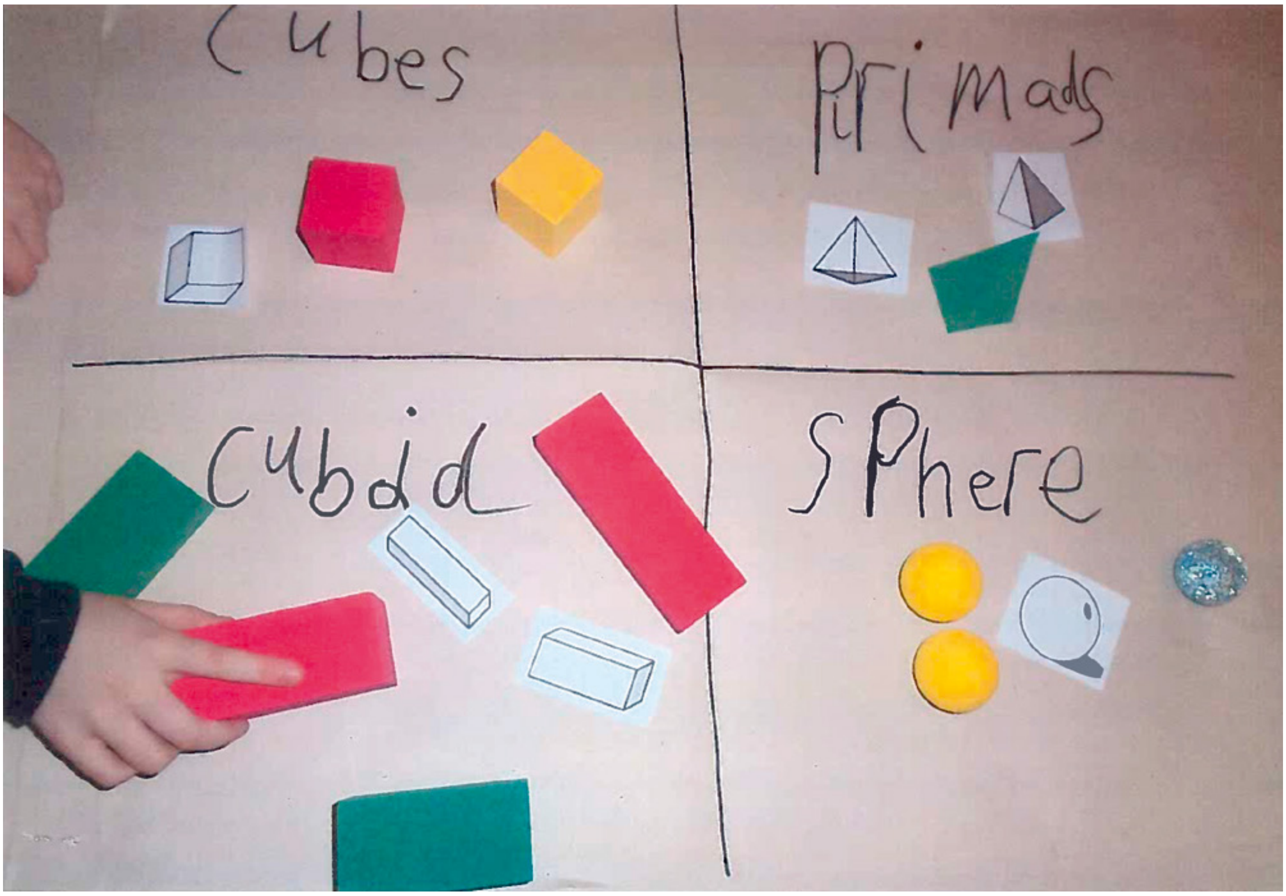
"That's another triangle: it has 3 straight sides and 3 pointy bits."

"That one isn't a triangle because it doesn't have 3 points."



Working towards the expected standard

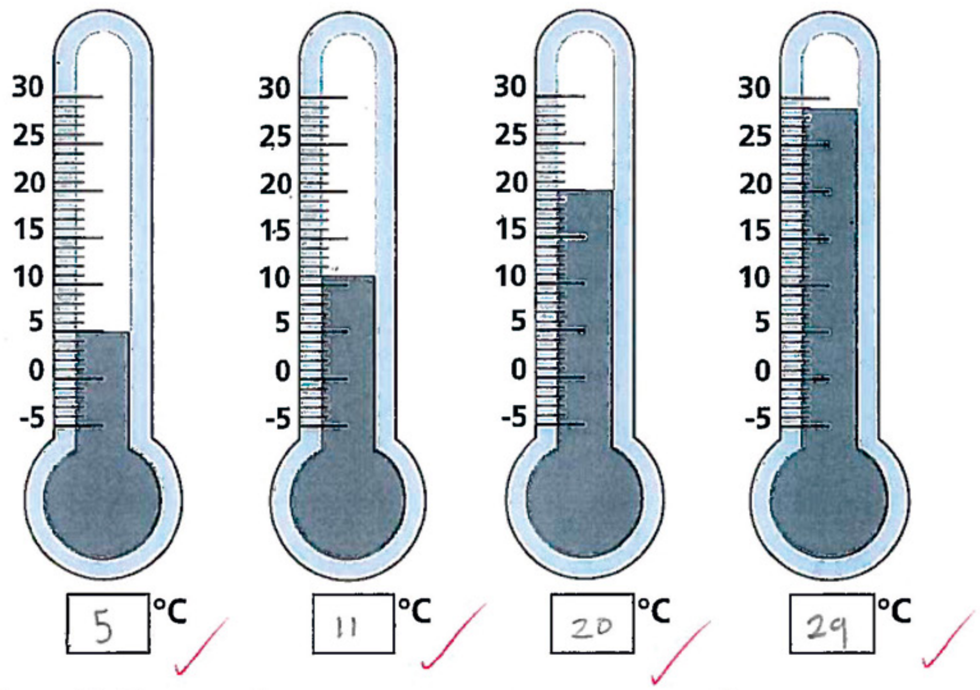
Statement	The pupil can name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes, and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres).
Context	The pupils were asked to group the 3D shapes according to their own criteria. The pupil successfully sorted a variety of images and 3D shapes according to shape name. Although the pupil has made an error in their spelling of pyramid this does not detract from their ability to correctly identify pyramids.



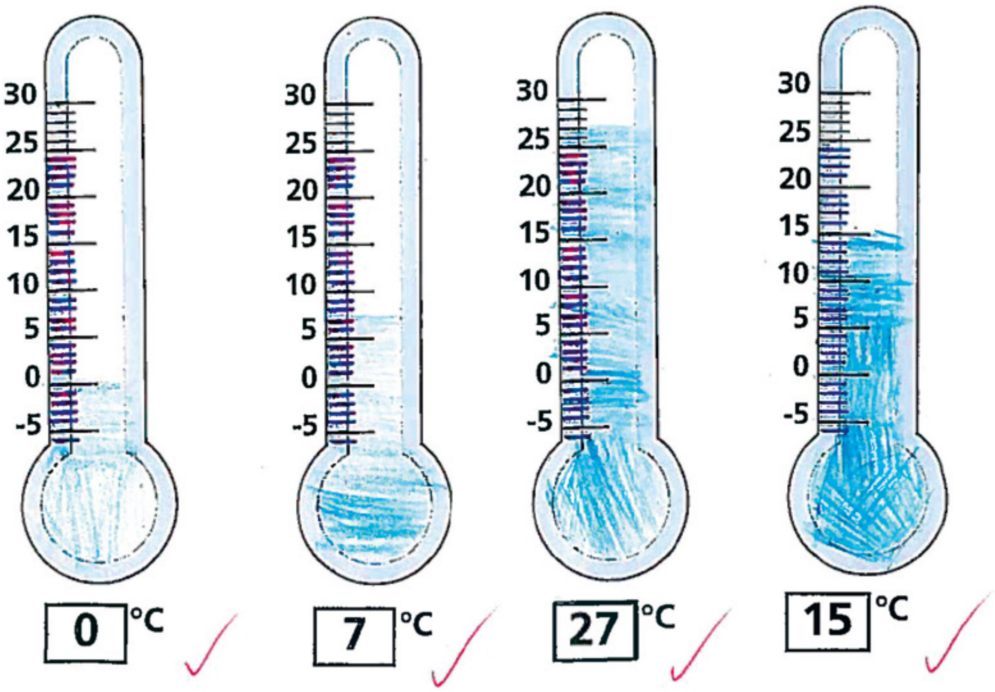
Working at the expected standard

Statement	The pupil can read scales in divisions of ones, twos, fives and tens.
Context	The pupils were asked to place thermometers around the school. They then followed this up by reading the temperature. This activity demonstrated the pupil's ability to use appropriate equipment and read a scale.

Can I read the temperature on a thermometer?

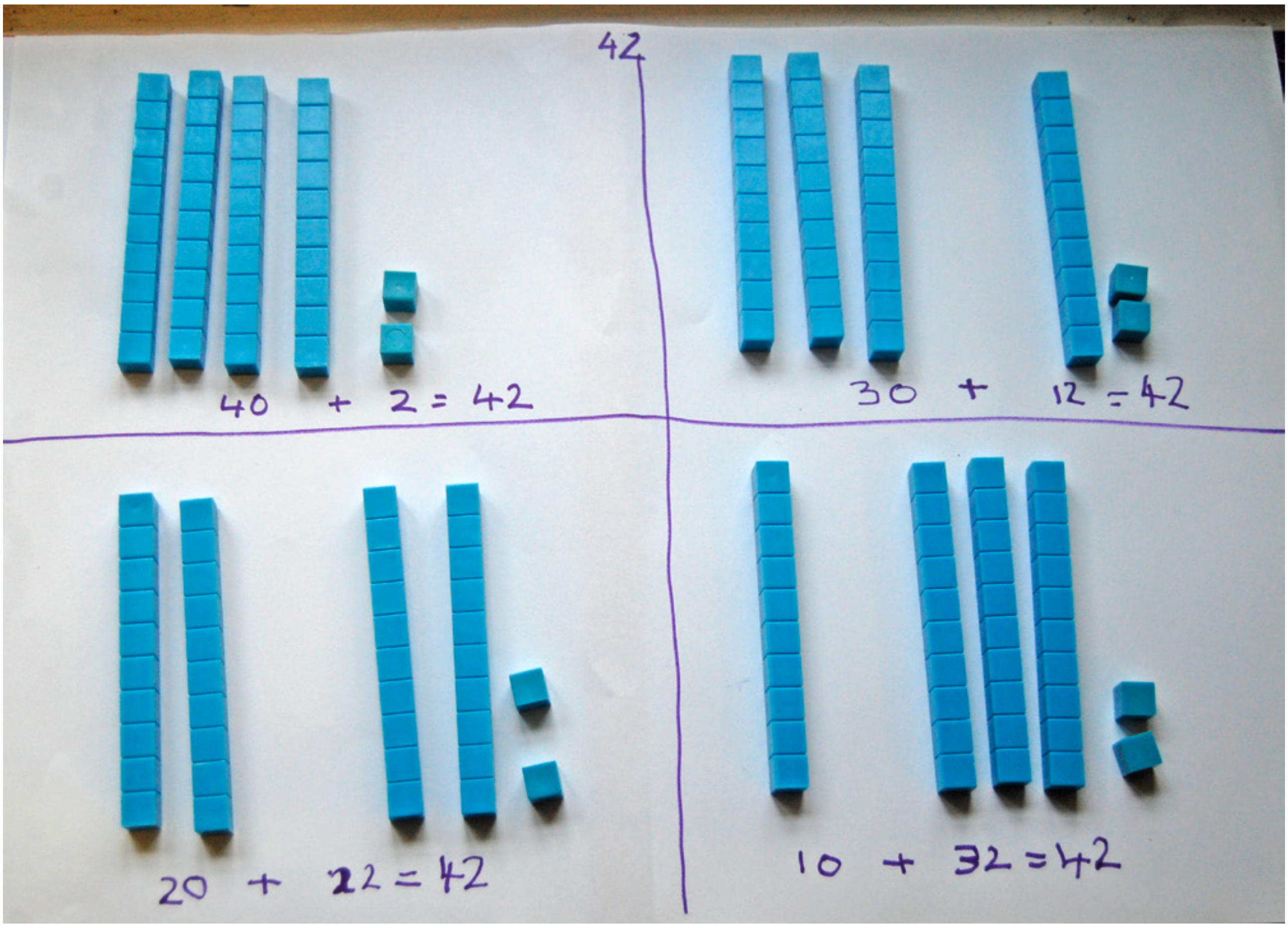


Can I draw the temperature on a thermometer?



Working at the expected standard

Statement	The pupil can partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus.
Context	Following work on place value, the pupils were asked to show their understanding by partitioning two-digit numbers in different ways. A range of apparatus was available to show their understanding. The pupils were asked to select a two-digit number from the middle of the table and to partition it in different ways, using the apparatus to show their thinking. The evidence below is from a pupil who chose the base ten equipment and the photographs show her work.



The pupil said, "42 is the same as 40 and 2," and showed this with the base ten equipment. She then said, "I can also show 42 as 30 and 12, 20 and 22, and 10 and 32." She demonstrated this with the equipment.

Working at the expected standard

Statement	The pupil can partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus.
Context	Pupils worked independently and were asked to select two-digit numbers from the centre of the table and to partition them in different ways. The pupil worked fluently and systematically through the task, using tens and ones to model their thinking and represent the numbers. The pupil was able to explain their understanding of place value and the systematic pattern in the numbers.

48

40 + 8 = 48
30 + 18 = 48
20 + 28 = 48
10 + 38 = 48

61

60 + 1 = 61
50 + 11 = 61
40 + 21 = 61
30 + 31 = 61
20 + 41 = 61
10 + 51 = 61

46

40 + 6 = 46
30 + 16 = 46
20 + 26 = 46
10 + 36 = 46

65

60 + 5 = 65
50 + 15 = 65
40 + 25 = 65
30 + 35 = 65
20 + 45 = 65
10 + 55 = 65

59

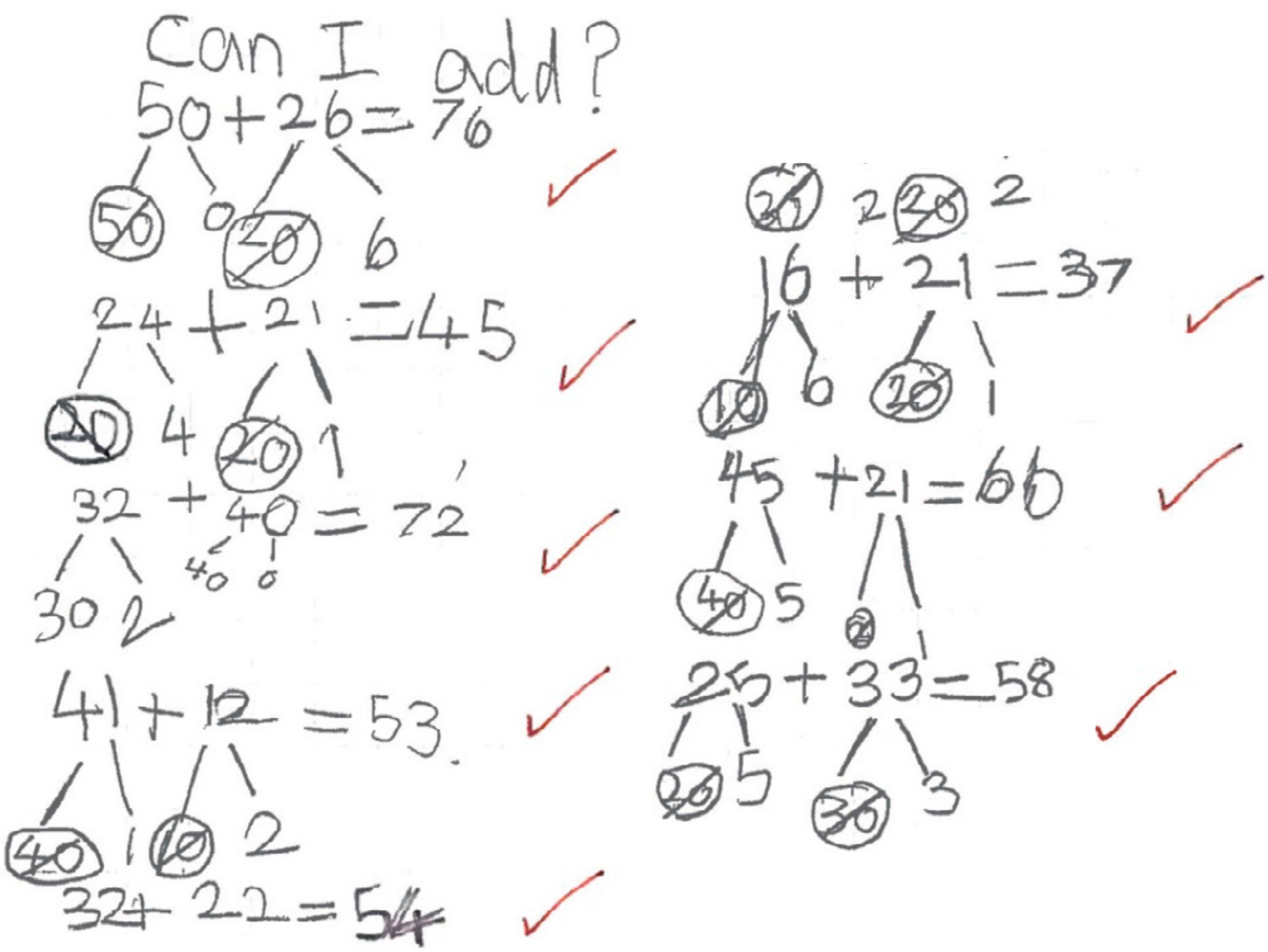
50 + 9 = 59
40 + 19 = 59
30 + 29 = 59
20 + 39 = 59
10 + 49 = 59

52

50 + 2 = 52
40 + 12 = 52
30 + 22 = 52
20 + 32 = 52
10 + 42 = 52

Working at the expected standard

Statement	The pupil can: • add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17) • recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14)
Context	The pupil understood the need to partition the number units into tens and ones. The pupil then re-combined the 2 numbers to record the answer. Pupils worked independently.

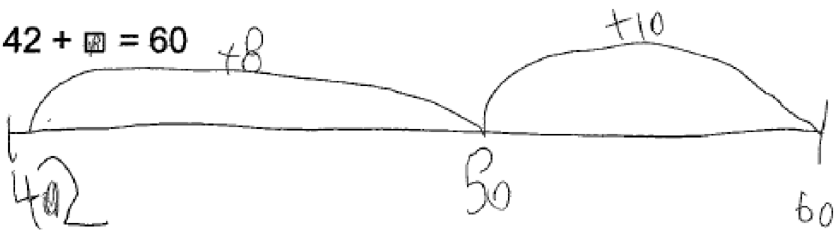

Can I add?
50 + 26 = 76
24 + 21 = 45
32 + 40 = 72
41 + 12 = 53
32 + 22 = 54
16 + 21 = 37
45 + 21 = 66
25 + 33 = 58

Working at the expected standard

Statement	The pupil can add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17).
Context	The pupil was working on calculations where the missing number appeared in different places. He explained how he used his understanding of number facts and place value to find the difference each time. For some calculations, he modelled his thinking on a number line to show his method, and for some calculations he used symbols to show how he had worked out the missing number.

"42 add 8 would equal 50, then add the 10 would equal 60, so it is 18."

42 + ☐ = 60



72 – 38 = 34

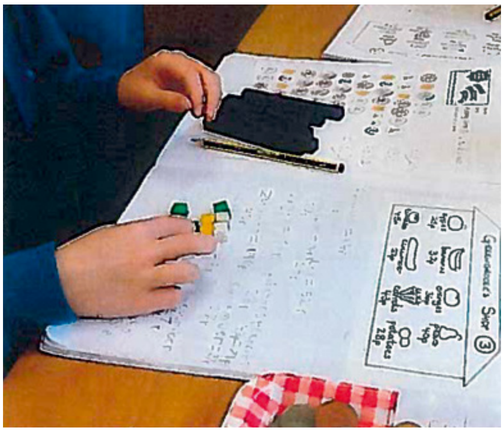
72 − 30 = 42

42 − 8 = 34

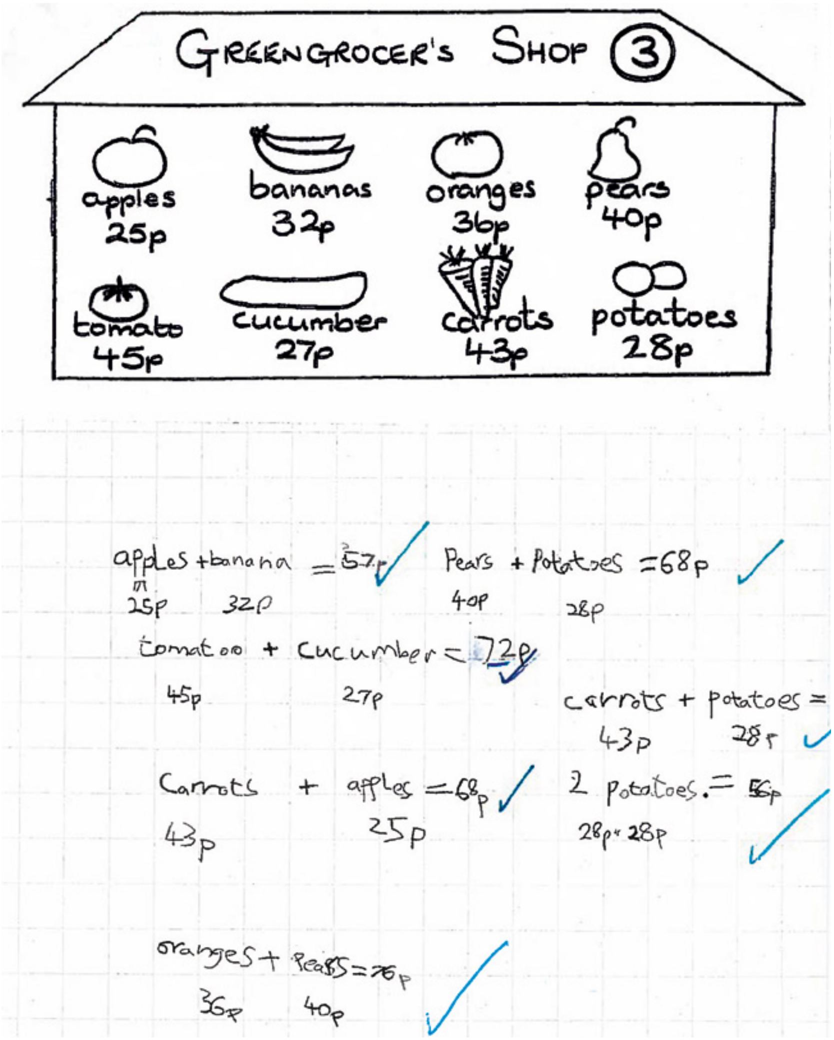
"I know 72 take away 30 is 42. 42 take away 8 equals 34."

Working at the expected standard

Statement	The pupil can add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17).
Context	The pupils had been learning to add amounts of money together, using coins to model their methods. Each pupil was asked to find the total price of 2 items from the greengrocer's shop. They were asked to explain their method, and use either coins or base ten apparatus to demonstrate their working out.

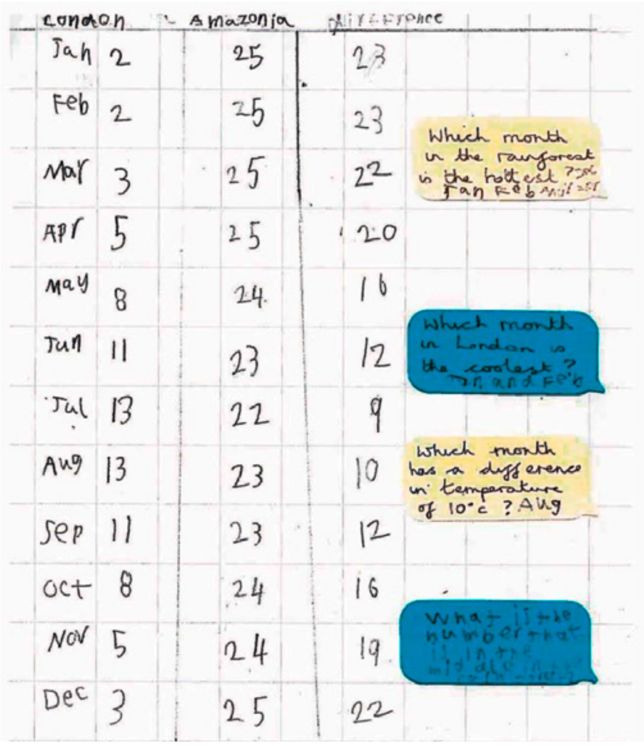


The pupil used the tens and ones apparatus to demonstrate how she solved some of her calculations. She explained how she used known facts: "I know that double 8 is 16, and double 20 is 40, so 28 add 28 is: 40 add 16, which is 56."



Working at the expected standard

Statement	The pupil can add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17).
Context	Pupils independently worked out the difference in temperatures between London and the rainforest. Some pupils worked out the answers by mentally counting on/back. The pupil was able to mentally subtract a two-digit number from another two-digit number, where there was no regrouping required. However, apparatus was used to subtract when regrouping was required.



London		Amazonia	Difference
Jan	2	25	23
Feb	2	25	23
Mar	3	25	22
Apr	5	25	20
May	8	24	16
Jun	11	23	12
Jul	13	22	9
Aug	13	23	10
Sep	11	23	12
Oct	8	24	16
Nov	5	24	19
Dec	3	25	22

Which month in the rainforest is the hottest? Jan Feb

Which month in London is the coolest? Jn and Feb

Which month has a difference in temperature of 10°c ? Aug

What is the number that is in the middle in the

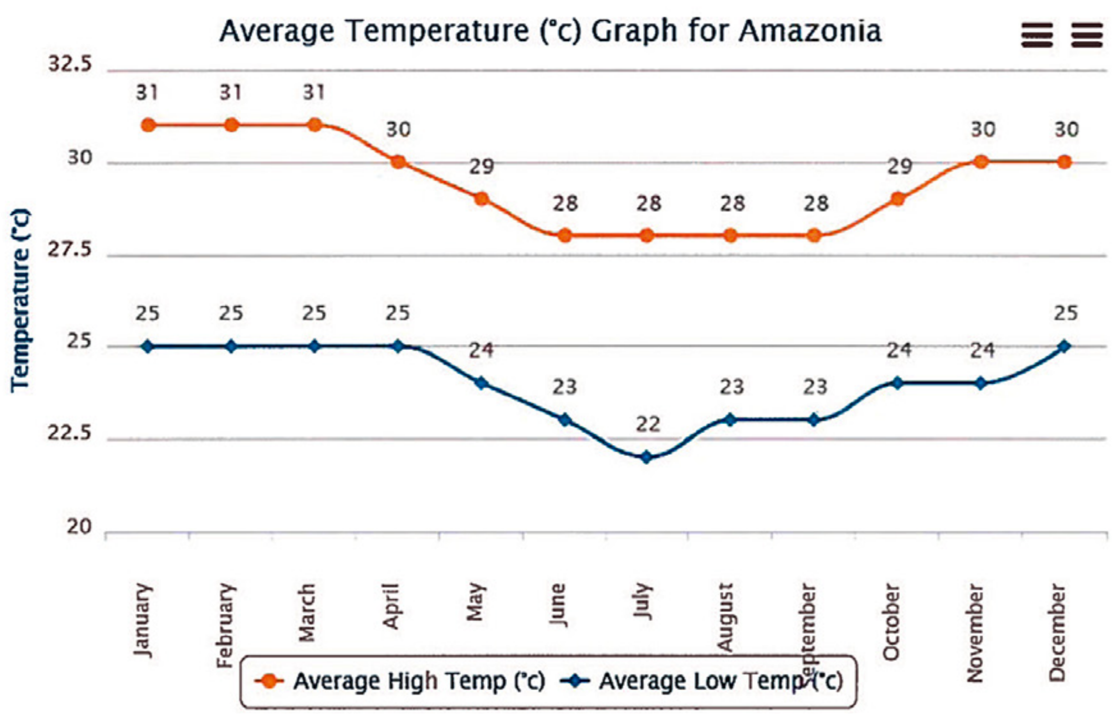
1. Which month in the rainforest is the hottest?
Dec Jan Feb Mar Apr

2. Which month in London is the coolest?
Jan and Feb

3. Which month has a difference in temperature of 10°C? Aug

4. What is the number that is in the middle in the rainforest?

Average High/Low Temperature for Amazonia, Brazil



Working at the expected standard

Statement	The pupil can add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17).
Context	The pupil demonstrated that she can subtract a two-digit number from a two-digit number using an efficient strategy of partitioning the second number and subtracting first the tens and then the ones.

61 - 43 = 18 ✓
61 - 40 = 21
21 - 3 = 18

83 - 44 = 39
83 - 40 = 4~~1~~3
43 - 4 = 39

81 - 23 = 58
81 - 20 = 61
61 - 3 = 58 ✓

93 - 26 = 67
93 - 20 = 73
73 - 6 = 67

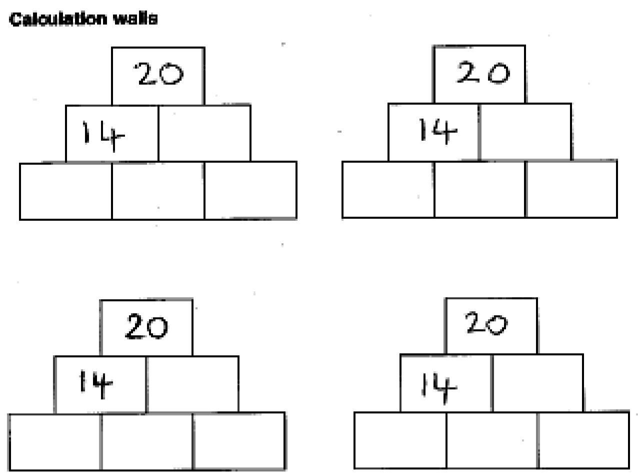
52 - 17 = 35
52 - 10 = 42
42 - 7 = 3~~8~~5 ✓

85 - 37 = 48
85 - 30 = 55
55 - 7 = 48 ✓

64 - 26 = 38
64 - 20 = 44
44 - 6 = 38 ✓

Working at the expected standard

Statement	The pupil can recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14).
Context	The pupils had been exploring calculation walls, putting 3 numbers in the wall and then adding adjacent pairs of bricks to find the number for the brick below. They had found different ways to use the same 3 numbers and found that this sometimes changed the top number and sometimes did not. They were then given partially completed walls and asked to find all the possibilities for the missing numbers. To find the first missing brick, the pupils knew they had to subtract 14 from 20. One pupil suggested it would be 7 and another pupil explained how this could not be correct, using known addition facts and her understanding of the inverse relationship. She then suggested different ways to complete the wall, using her understanding of the additive composition of 6 and using addition facts to help her complete pairs of numbers for 14. For example, knowing 14 subtract 9 would be 5 because 10 and 4 makes 14.



When someone suggested 7 should go in the brick next to 14, the pupil said: "How can 20 take away 14 be 7, when 4 add 6 is 10? 14 add 6 must be 20."

Working at the expected standard

Statement	The pupil can recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14).
Context	The class were exploring problems with missing numbers in different places, sometimes starting with the context and sometimes starting with the symbols. In the example below, the pupil was able to use what she knew about addition to help her solve problems that involved subtraction, as well as problems that involved addition. She could explain her thinking and represent it using the bar model, explaining how the drawing represented the problem.

$\square - 12 = 4$

"There were some cars in the car park. When 12 cars drove away, there were 4 cars left. How many cars were there in the car park before any drove away? How do you know?"

"There were 16 because I added 4 onto 12."

Working at the expected standard

Statement	The pupil can recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14).
Context	The pupil demonstrated that she can recall number bonds to 10 and reason about related number bonds to 20.

4 + 6 = 10

6 + 4 = 10

10 − 4 = 6

10 − 6 = 4

4 + 16 = 20

6 + 14 = 20

20 − 6 = 14

20 − 4 = 16

Working at the expected standard

Statement	The pupil can recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary.
Context	This was a practical exercise using a set number of cubes, e.g. 12 is 6 lots of 2, 2 lots of 6 is 12. The pupils were given a set of numbers and then were asked to write 4 number sentences using those numbers. The pupil demonstrated a good understanding of the nature of multiplication and division.

Can I do inverse calcalations

120, 12, 10

12 x 10 = 120
10 x 12 = 120
120 ÷ 12 = 10
120 ÷ 10 = 12

100, 10, 10

10 x 10 = 100
100 ÷ 10 = 10

100, 2, 50

2 x 50 = 100
50 x 2 = 100
100 ÷ 2 = 50
100 ÷ 50 = 2

40, 8, 5

8 x 5 = 40
5 x 8 = 40
40 ÷ 5 = 8
40 ÷ 8 = 5

8, 2, 16

8 x 2 = 16
2 x 8 = 16
16 ÷ 8 = 2
16 ÷ 2 = 8

Can I do inverse calculatoins?

8, 2, 16

8 x 2 = 16
2 x 8 = 16
16 ÷ 8 = 2
16 ÷ 2 = 8

9, 10, 90

9 x 10 = 90
10 x 9 = 90
90 ÷ 10 = 9
90 ÷ 9 = 10

3, 5, 15

3 x 5 = 15
5 x 3 = 15
15 ÷ 5 = 3
15 ÷ 3 = 5

18, 3, 6

3 x 6 = 18
6 x 3 = 18
18 ÷ 3 = 6
18 ÷ 6 = 3

6, 5, 30

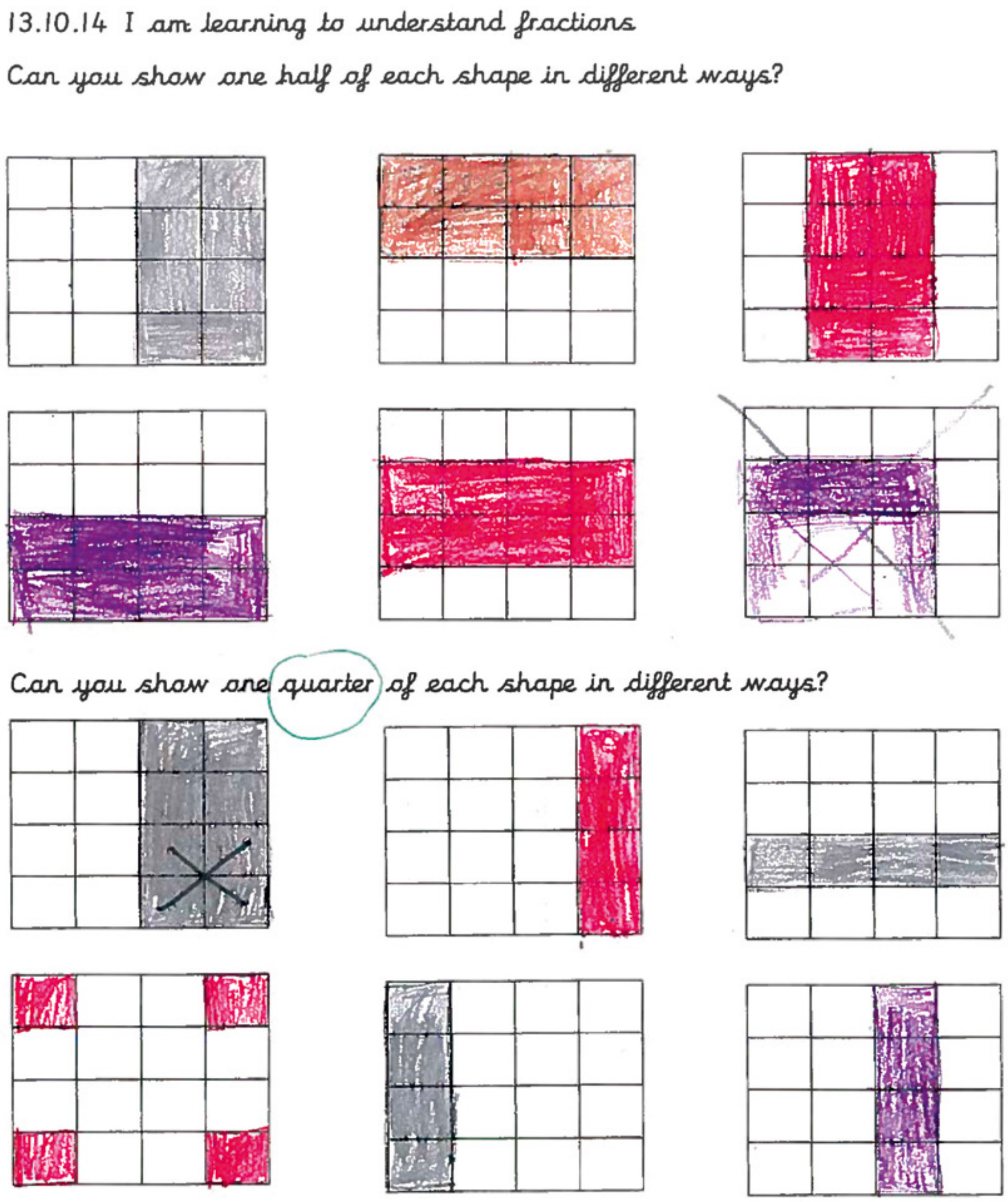
6 x 5 = 30
5 x 6 = 30
30 ÷ 6 = 5
30 ÷ 5 = 6

100, 10, 10

10 x 10 = 100
100 ÷ 10 = 10
10 x 10 = 100
100 ÷ 10 = 10

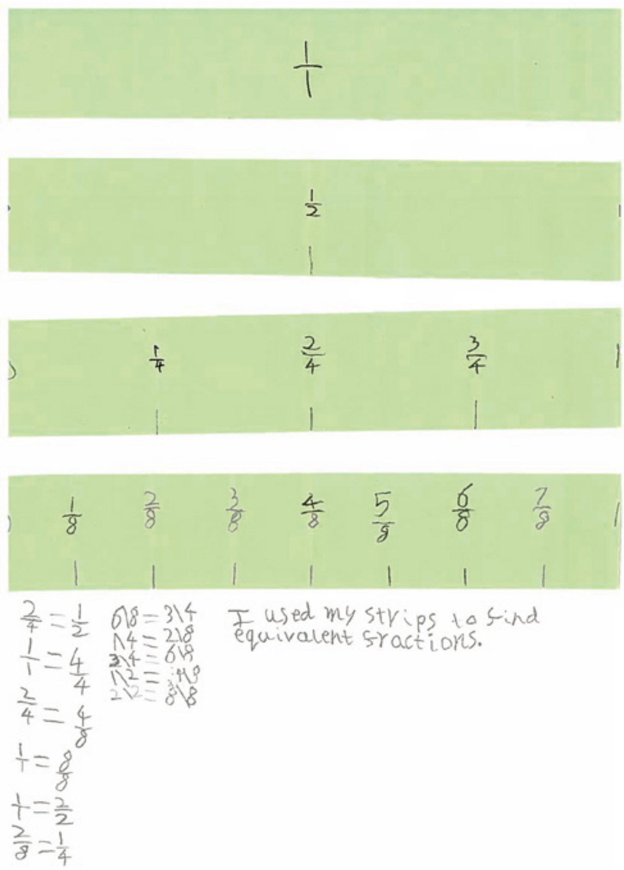
Working at the expected standard

Statement	The pupil can identify $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$, of a number or shape, and know that all parts must be equal parts of the whole.
Context	The pupils had explored what a fraction of a whole is. They then folded a variety of shapes into halves and quarters, identifying each fraction of the whole shape. This demonstrated an understanding that all parts of the whole must be equal, before they independently completed the activity. The pupil had been asked to colour one half of each shape in one way and then one quarter of each shape in another way. Through independently colouring halves and quarters in different ways, the pupil has shown an understanding of how many squares they needed to colour in to find one half and one quarter. Their work demonstrates the need to share into groups of equal size when finding fractions of a quantity.



Working at the expected standard

Statement	The pupil can identify $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$, of a number or shape, and know that all parts must be equal parts of the whole.
Context	The pupils were asked to take strips of paper and fold them to show halves and quarters, sticking them onto a sheet of paper. They then had to write what they noticed when looking at and comparing the strips. The pupil worked independently, with confidence and fluency, folding strips and labelling the fractions represented by the folded sections of each strip. The pupil also commented that she was doubling the number of folds needed each time and independently went on to fold a further strip into eighths. The pupil then methodically used the strips to make comparisons between the fractions and recorded her work as equivalent statements. When talking to the teacher about the strips the pupil was able to explain that to find quarters you needed 4 equal parts and one of those equal parts is a quarter, 2 of those equal parts is 2 quarters, 3 parts is 3 quarters and 4 parts is 4 quarters. When questioned about thirds the pupil knew it would be 3 equal parts and one of those equal parts would be a third, 2 would be 2 thirds and 3 would be 3 thirds. The pupil also knew the terminology for numerator and denominator.



Working at the expected standard

Statement	The pupil can use different coins to make the same amount.
Context	The class had to find all the possible ways that the bag of sweets, costing 45p, could be paid for using only silver coins. They worked independently and had coins available to use if they wished. In the example below, the pupil used silver coins correctly, ignoring the copper coins that were also available. They found 9 different ways to make 45p, accurately recording matching additions.

The bag of sweets costs 45p

How many different ways can you find to pay for the sweets, using **only** silver coins?

10p +10p + 10p +10p+5p 45p
20p + 20p + 5p = 45p
5p+5p+5p+5p+5p+5p+5p+5p+5p= 45p
10p+10p+20p +5p =45p
10p +10p +5p +5p +5p +5p +5p = 45p
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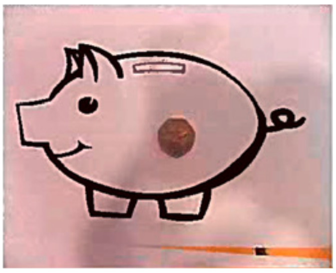
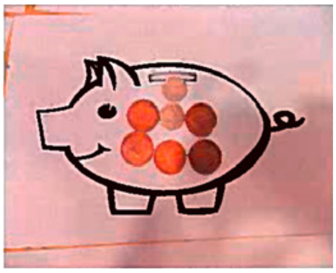
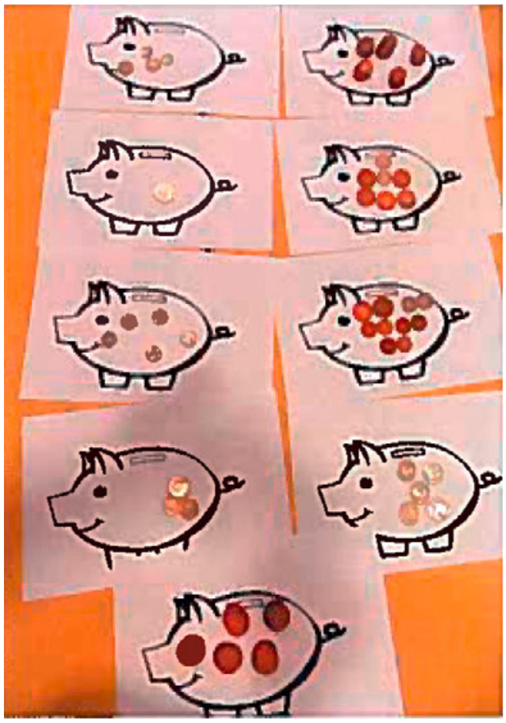
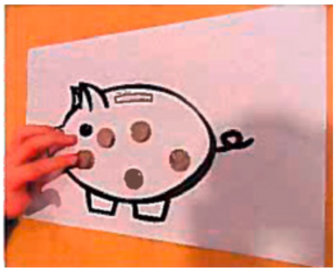
10p+10p+10p+5p+5p+5p=45p
10p+20p+5p+5p+5p= 45p
20p+5p+5p+5p+5p+5p=45p
10p+5p+5p+5p+5p+5p+5p+5p=45p

Working at the expected standard

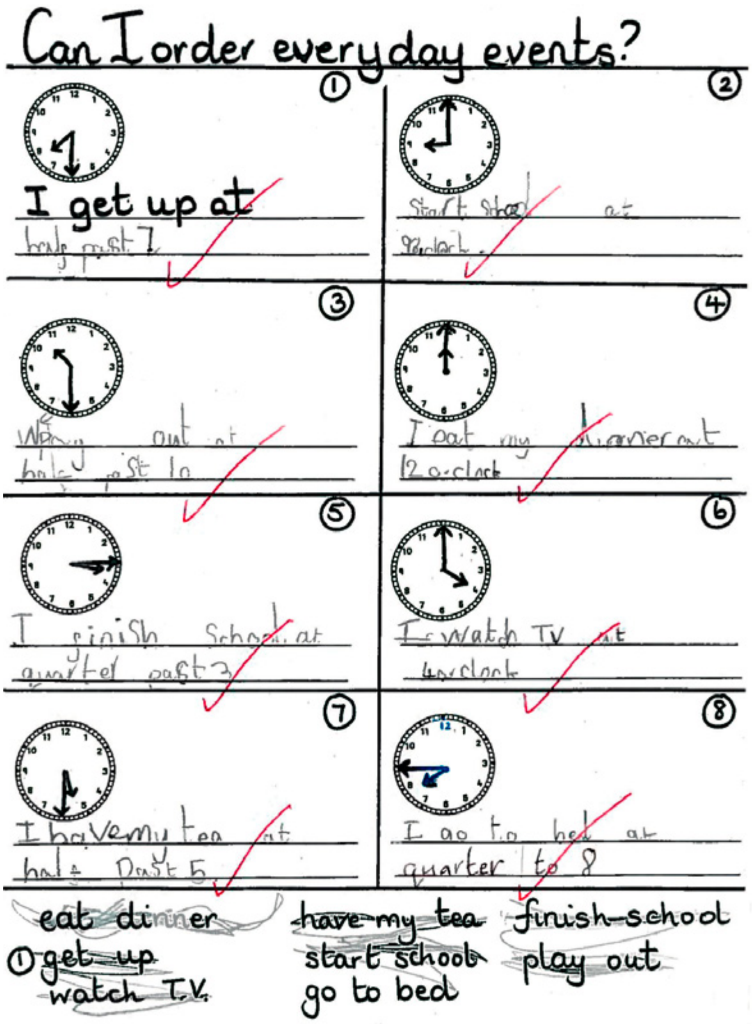
Statement	The pupil can use different coins to make the same amount.
Context	The class was set the task of finding different ways of making 50p pocket money for the 'piggy banks' using real coins. They were then asked to discuss how they knew the different combinations made a total of 50p. In this example, the pupil collected a 50p coin, identifying that this was the most efficient method. The teacher then asked the pupils to find other combinations. The pupil said, "We can get 5 lots of 10p because if you counted 5 times in 10 you would get to 50." The pupil then made the combination 20p + 20p + 2p + 2p + 2p + 2p + 2p. When asked why she had chosen the combination, she said, "I know that 20 plus 20 equals 40 and then I could count in twos to get to 50." She then said, "We can use 5ps to make 50p because 5 multiplied by 10 equals 50." The pupil then proceeded to arrange the 5p coins into towers of 2 and when asked why stated, "Two fives make 10 and then 5 groups of 10p equals 50p; it's quicker to count." As soon as the pupil reasoned why she had represented 10p in towers of two 5ps, the other pupils started to group 1p and 2p coins in a similar way.




Working at the expected standard

Statement	The pupil can read the time on a clock to the nearest 15 minutes.
Context	The class had completed oral work on the theme 'my day'. The evidence below shows one pupil's response to being asked to match the time on the clock to the statements at the bottom of the worksheet, by working out what they would be doing at that time of the day. The pupil could relate times on the pictures of the clocks to the events in their day.



I get up at half past 7	Start school at 9 o'clock.
Working out at half past 10	I eat my dinner at 12 o'clock
I finish school at quarter past 3	I watch TV at 4 o'clock
I have my tea at half past 5	I go to bed at quarter to 8

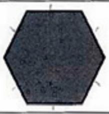
Working at the expected standard

Statement	The pupil can name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.
Context	A range of regular and irregular 2D shapes was placed in the middle of the table. The pupil was asked to record what they noticed about the shapes, comparing them and thinking about "what's the same, what's different about them".

2D Shapes

Write the name of the shape in the box next to it and then write some of its properties, using the Star Words.

Shape	Name of shape	Properties
	Rectangle	It has 4 sides. It has 4 corners. It has ~~a~~ 2 short sides+2 long sides. It is not equal. It's symmetrical
	Triangle	It is equal. It's symmetrical. It has 3 corners. It has 3 sides. ~~It is 2D~~ ~~It is 2D~~
	Square	~~It is 2D~~ ~~It is flat~~ It is equal. It is symmetrical. It has 4 sides. It has 4 corners.
	Circle	It has 1 curved side. ~~It is 2D~~ It is symmetrical. It is equal.

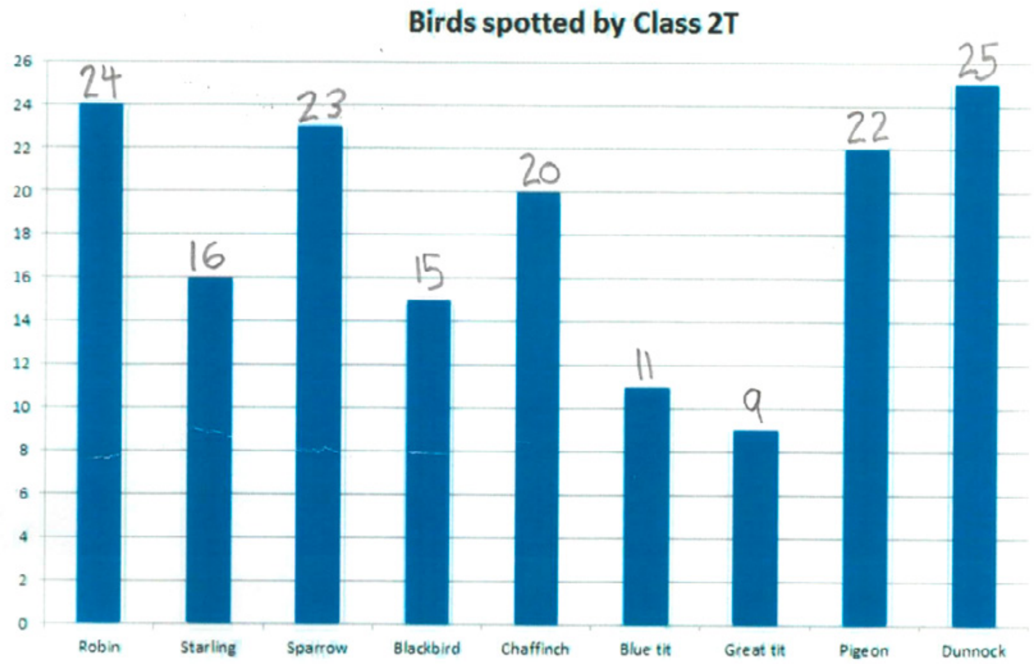
Shape	Name of shape	Properties
	Pentagon	It has 5 ~~equal~~ sides. The pentagon is symmetrical. It has 5 corners. ~~It has a black outline~~
	Hexagon	The ~~hexagon~~ sides equal. The hexagon is symmetrical. The hexagon has 6 sides. The hexagon has 6 corners.
	Heptagon	The heptagon has 7 sides. The heptagon has 7 corners. The heptagon is symmetrical.
	Oct	

Shape	Name of shape	Properties
	qaud relatue	it has 4 sides it has 4 corners it has 2 equal sides it is symmetrical
	pentigon	it has 5 sides it has 5 corners it is symmetrical
	qaud relatrle	it has 4 sides it has 4 corners it is not symmetrical
	hexagon	it has 6 sides it has ~~s~~ 6 corners it is not symmetrical

Working at greater depth

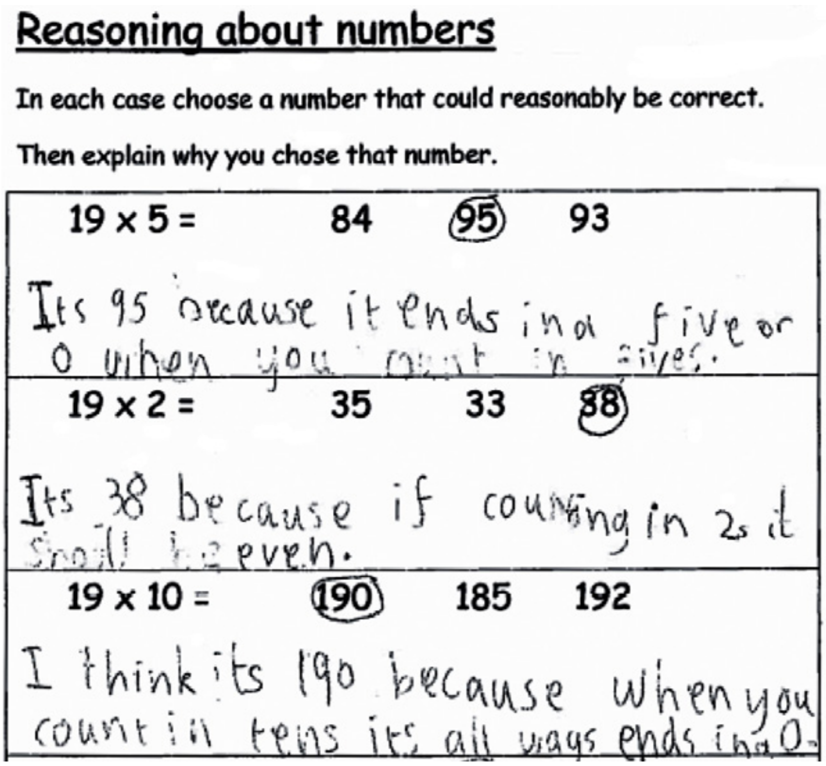
Statement	The pupil can read scales where not all numbers on the scale are given and estimate points in between.
Context	The pupils in a year 2 class went bird spotting in the school grounds. The data collected was put into a spreadsheet and a graph was created with a scale in twos. This pupil correctly identified how many birds of each type had been seen and wrote the totals above each bar on the graph. He then used the graph to generate questions.

What do you notice about this graph?



Working at greater depth

Statement	The pupil can recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts.
Context	In the example below, the pupil used their knowledge of multiplication facts and associated number patterns to rule out options, and identify a suitable answer for each of the 3 given multiplications. For the division, they recognised that a multiplication they knew, 4 x 10 = 40, could help them solve the problem. They then applied this knowledge to identify that 80 pupils put into groups of 4 would be 20 groups.


Reasoning about numbers

In each case choose a number that could reasonably be correct.

Then explain why you chose that number.

19 x 5 =	**84**	**95**	**93**
Its 95 because it ends in a five or 0 when you count in fives.			
19 x 2 =	**35**	**33**	**38**
Its 38 because if counting in 2s it should be even.			
19 x 10 =	**190**	**185**	**192**
I think its 190 because when you count in tens its all ways ends in a 0.			

19 x 5 =

Its 95 because it ends in a five or 0 when you count in fives.

19 x 2 =

Its 38 because if counting in 2s it should be even.

19 x 10 =

I think its 190 because when you count in tens its all ways ends in a 0.

Working at greater depth

Statement	The pupil can use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. 29 + 17 = 15 + 4 + ☐☐; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?').
Context	The pupil reasoned about the two sides of the equation to find the missing number. For example, in the first question, she recognised that 14 on the right hand side of the equation is 3 more than 11 on the left hand side of the equation, and therefore that the missing number had to be 3 more than 25 to keep the two sides the same. She then checked both calculations to show that they were the same.

L.I. To solve missing number problems

$\boxed{28} + 11 = 25 + 14$ ✓

28	11	=39
25	14	=39

$17 + 15 = \boxed{20} + 12$ ✓

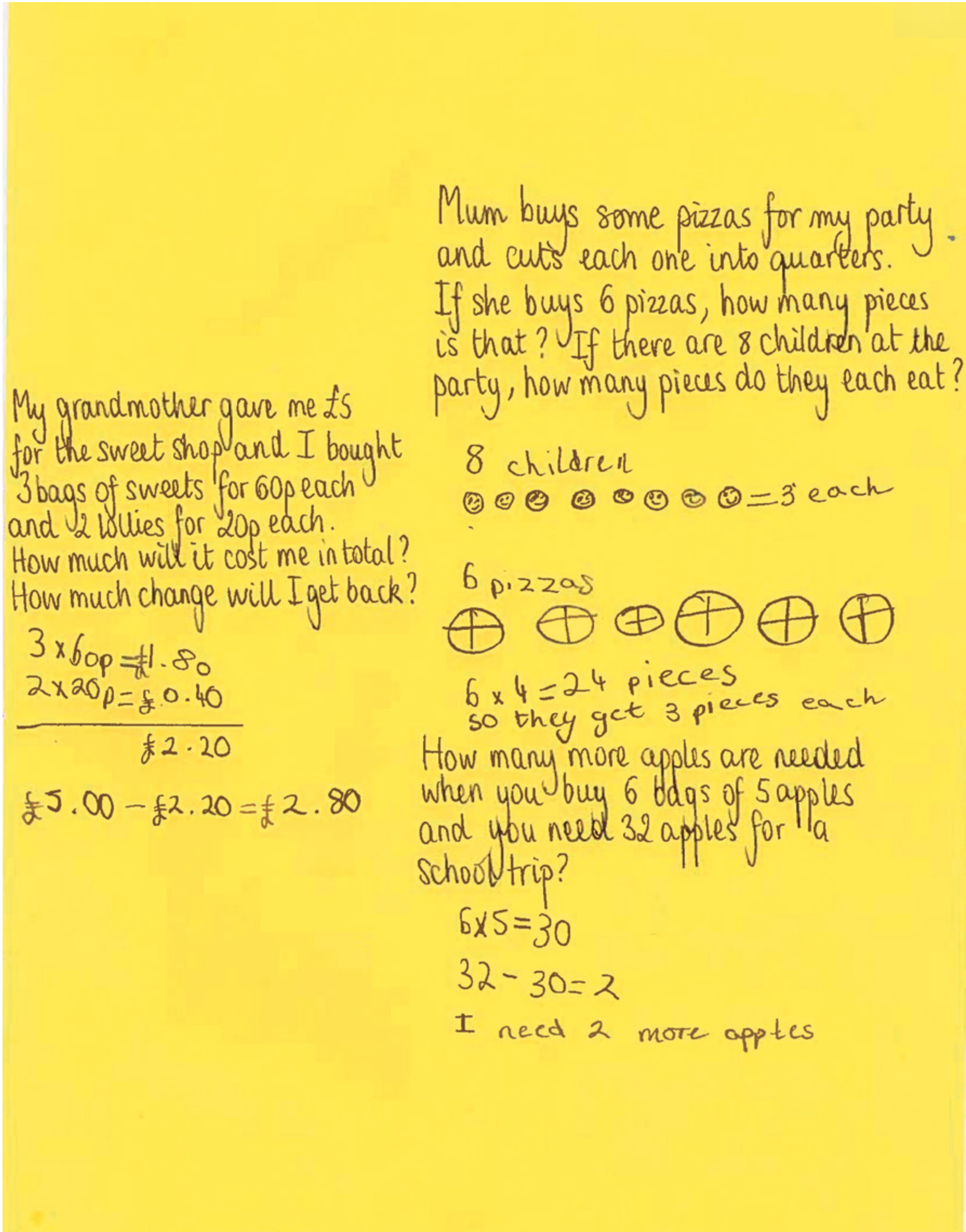
17	15	=32
20	12	=32

$8 + 18 + 5 = 3 + \boxed{13} + 15$ ✓

8	5	18	=31
3	13	15	=31

Working at greater depth

Statement	The pupil can solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?').
Context	Pupils were given several problems to choose from; the evidence below shows which problems the pupil chose to solve, and how she chose to solve them. She made sense of the problems, made appropriate decisions about the type of calculations used and explained both her decisions and her answers in the context of the problems.


My grandmother gave me £5 for the sweet shop and I bought 3 bags of sweets for 60p each and 2 lollies for 20p each.
How much will it cost me in total?
How much change will I get back?

3 x 60p = £1.80
2 x 20p = £0.40
£2.20

£5.00 − £2.20 = £2.80

Mum buys some pizzas for my party and cuts each one into quarters.
If she buys 6 pizzas, how many pieces is that? If there are 8 children at the party, how many pieces do they each eat?

8 children
= 3 each

6 pizzas

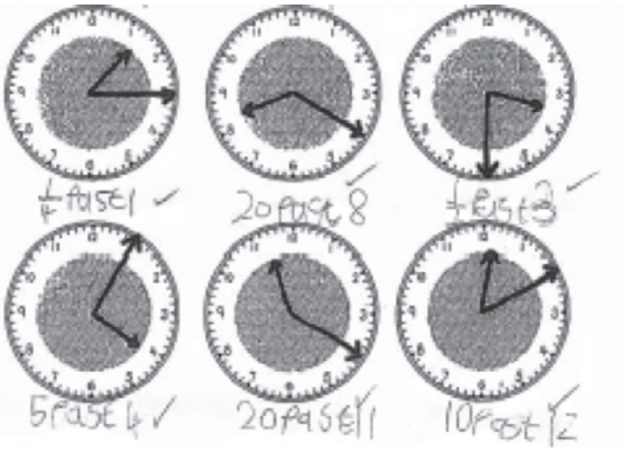
6 x 4 = 24 pieces
so they get 3 pieces each

How many more apples are needed when you buy 6 bags of 5 apples and you need 32 apples for a school trip?

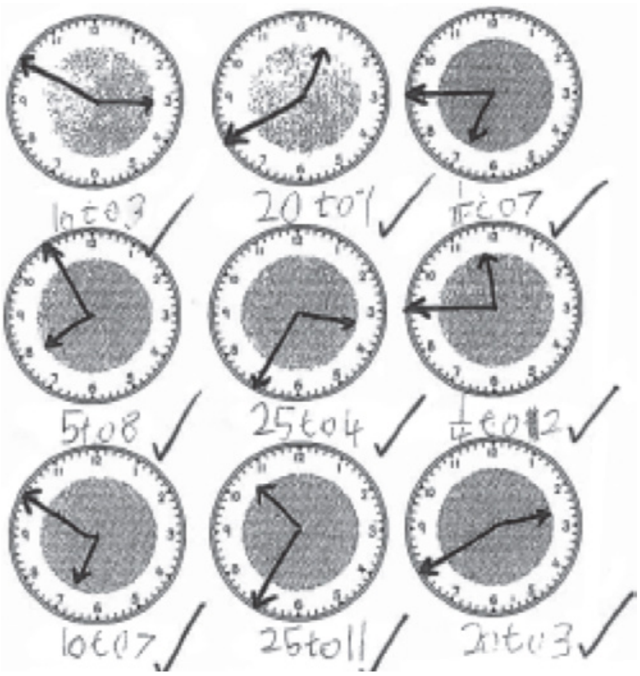
6 x 5 = 30
32 − 30 = 2
I need 2 more apples

Working at greater depth

Statement	The pupil can read the time on a clock to the nearest 5 minutes.
Context	The evidence below demonstrates the pupil's understanding of how clocks show both "past the hour" and "to the hour" times. The pupil explained that the minute hand takes 5 minutes to move from one number to another on a clock and so counting in fives helps when telling the time. They also used a teaching clock to show this, moving the hand and counting all the way around the clock to 60.



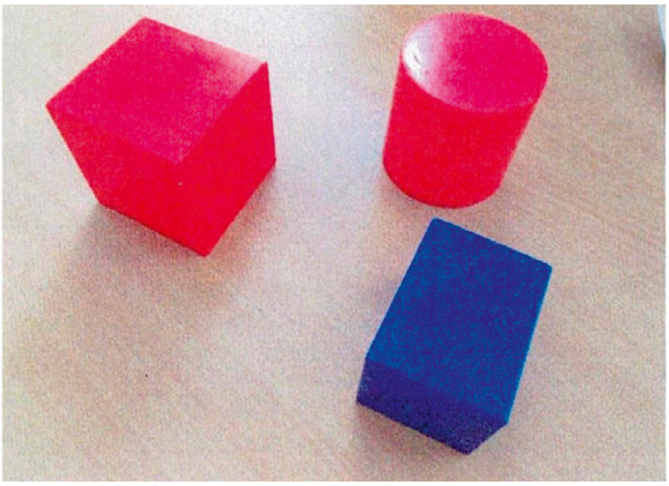
¼ past 1	20 past 8	½ past 3
5 past 4	20 past 11	10 past 12



10 to 3	20 to 1	¼ to 7
5 to 8	25 to 4	¼ to 12
10 to 7	25 to 11	20 to 3

Working at greater depth

Statement	The pupil can describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions).
Context	In this class, pupils could name the shapes and had a clear understanding of the geometrical language of 'edges', 'vertices', 'faces', 'curved' and 'straight'. They were working in a group of 4, to encourage interactive discussion about the shapes, but then worked independently to record the statements. The teacher observed the pupils' discussion and the way they handled the shapes and counted the properties. The pupils also used 'shape' language confidently and corrected each other if the wrong terminology was used. Along with the recorded evidence, the pupils' discussion showed a clear understanding of each shape's properties.



The cube has 8 vertus and so does the cuboid but the cylinder as none.
The cuboid have 12 ~~faces~~ eges and the cube has 12 ~~same~~ as well
The cylinder has 2 eges and its ~~~~ curved and the others have all straight eges.
The cube has squre faces there are six of them
The cuboid has 2 squre faces and 4 rectangle faces.

The cube has 8 vertics and so does the cuboid but the cylinder has none.

The cuboid have 12 eges and the cube has 12 as well

The cylinder has 2 eges and its curved and the others have all straight eges. The cube has squre faces there are six of them

The cuboid has 2 squre faces and 4 rectangle faces.

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