

2016 national curriculum assessments

Key stage 1

2016 teacher assessment exemplification: end of key stage 1

Mathematics

Working towards the
expected standard

April 2016



Standards
& Testing
Agency

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2016 teacher assessment exemplification: end of key stage 1

Key stage 1 (KS1) mathematics teacher assessment (TA), using the interim teacher assessment frameworks, is statutory for 2016.

This document contains material that exemplifies all of the statements within the KS1 interim TA framework for 'working towards the expected standard'.

Use of the exemplification materials

- Schools must use the interim TA frameworks to reach their TA judgements.
- If teachers are confident in their judgements, they do not need to refer to the exemplification materials. The exemplification materials are there to help teachers make their judgements where they want additional guidance.
- Local authorities (LAs) may find it useful to refer to exemplification materials to support external moderation visits.
- The judgement as to whether a pupil meets a statement is made across a collection of evidence and not on individual pieces of work.
- This document consists of pieces of work drawn from different pupils.

Note: you must also refer to the 'Interim teacher assessment frameworks at the end of key stage 1' on GOV.UK as they have not been fully duplicated here.

Interim teacher assessment framework at the end of key stage 1: mathematics

Working towards the expected standard

- The pupil can demonstrate an understanding of place value, though may still need to use apparatus to support them (e.g. by stating the difference in the tens and ones between 2 numbers i.e. 77 and 33 has a difference of 40 for the tens and a difference of 4 for the ones; by writing number statements such as $35 < 53$ and $42 > 36$).
- The pupil can count in twos, fives and tens from 0 and use counting strategies to solve problems (e.g. count the number of chairs in a diagram when the chairs are organised in 7 rows of 5 by counting in fives).
- The pupil can read and write numbers correctly in numerals up to 100 (e.g. can write the numbers 14 and 41 correctly).
- The pupil can use number bonds and related subtraction facts within 20 (e.g. $18 = 9 + ?$; $15 = 6 + ?$).
- The pupil can add and subtract a two-digit number and ones and a two-digit number and tens where no regrouping is required (e.g. $23 + 5$; $46 + 20$), they can demonstrate their method using concrete apparatus or pictorial representations.
- The pupil can recall doubles and halves to 20 (e.g. pupil knows that double 2 is 4, double 5 is 10 and half of 18 is 9).
- The pupil can recognise and name triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres from a group of shapes or from pictures of the shapes.

Working at the expected standard

- The pupil can partition two-digit numbers into different combinations of tens and ones. This may include using apparatus (e.g. 23 is the same as 2 tens and 3 ones which is the same as 1 ten and 13 ones).
- The pupil can add 2 two-digit numbers within 100 (e.g. $48 + 35$) and can demonstrate their method using concrete apparatus or pictorial representations.
- The pupil can use estimation to check that their answers to a calculation are reasonable (e.g. knowing that $48 + 35$ will be less than 100).
- The pupil can subtract mentally a two-digit number from another two-digit number when there is no regrouping required (e.g. $74 - 33$).
- The pupil can recognise the inverse relationships between addition and subtraction and use this to check calculations and work out missing number problems (e.g. $\Delta - 14 = 28$).
- The pupil can recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables to solve simple problems, demonstrating an understanding of commutativity as necessary (e.g. knowing they can make 7 groups of 5 from 35 blocks and writing $35 \div 5 = 7$; sharing 40 cherries between 10 people and writing $40 \div 10 = 4$; stating the total value of six 5p coins).
- The pupil can identify $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$ and knows that all parts must be equal parts of the whole.

Continued on the next page

Working at the expected standard *(continued)*

- The pupil can use different coins to make the same amount (e.g. pupil uses coins to make 50p in different ways; pupil can work out how many £2 coins are needed to exchange for a £20 note).
- The pupil can read scales in divisions of ones, twos, fives and tens in a practical situation where all numbers on the scale are given (e.g. pupil reads the temperature on a thermometer or measures capacities using a measuring jug).
- The pupil can read the time on the clock to the nearest 15 minutes.
- The pupil can describe properties of 2-D and 3-D shapes (e.g. the pupil describes a triangle: it has 3 sides, 3 vertices and 1 line of symmetry; the pupil describes a pyramid: it has 8 edges, 5 faces, 4 of which are triangles and one is a square).

Working at greater depth within the expected standard

- The pupil can reason about addition (e.g. pupil can reason that the sum of 3 odd numbers will always be odd).
- The pupil can use multiplication facts to make deductions outside known multiplication facts (e.g. a pupil knows that multiples of 5 have one digit of 0 or 5 and uses this to reason that 18×5 cannot be 92 as it is not a multiple of 5).
- The pupil can work out mental calculations where regrouping is required (e.g. $52 - 27$; $91 - 73$).
- The pupil can solve more complex missing number problems (e.g. $14 + \square - 3 = 17$; $14 + \Delta = 15 + 27$).
- The pupil can determine remainders given known facts (e.g. given $15 \div 5 = 3$ and has a remainder of 0, pupil recognises that $16 \div 5$ will have a remainder of 1; knowing that $2 \times 7 = 14$ and $2 \times 8 = 16$, pupil explains that making pairs of socks from 15 identical socks will give 7 pairs and one sock will be left).
- The pupil can solve 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?).
- The pupil can recognise the relationships between addition and subtraction and can rewrite addition statements as simplified multiplication statements (e.g. $10 + 10 + 10 + 5 + 5 = 3 \times 10 + 2 \times 5 = 4 \times 10$).
- The pupil can find and compare fractions of amounts (e.g. $\frac{1}{4}$ of £20 = £5 and $\frac{1}{2}$ of £8 = £4 so $\frac{1}{4}$ of £20 is greater than $\frac{1}{2}$ of £8).
- The pupil can read the time on the clock to the nearest 5 minutes.
- The pupil can read scales in divisions of ones, twos, fives and tens in a practical situation where not all numbers on the scale are given.
- The pupil can describe similarities and differences of shape properties (e.g. finds 2 different 2-D shapes that only have one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices but can describe what is different about them).

Statement

The pupil can demonstrate an understanding of place value, though may still need to use apparatus to support them (e.g. by stating the difference in the tens and ones between 2 numbers i.e. 77 and 33 has a difference of 40 for the tens and a difference of 4 for the ones; by writing number statements such as $35 < 53$ and $42 > 36$).

I am learning to use $<$ and $>$ signs

$$97 > 80 \quad \checkmark$$

$$17 < 47 \quad \checkmark$$

$$80 > 72 \quad \checkmark$$

$$31 > 17 \quad \checkmark$$

$$94 > 56 \quad \checkmark$$

$$51 > 41 \quad \checkmark$$

$$56 < 63 \quad \checkmark$$

$$41 < 47 \quad \checkmark$$

$$39 < 88 \quad \checkmark$$

$$51 < 56 \quad \checkmark$$

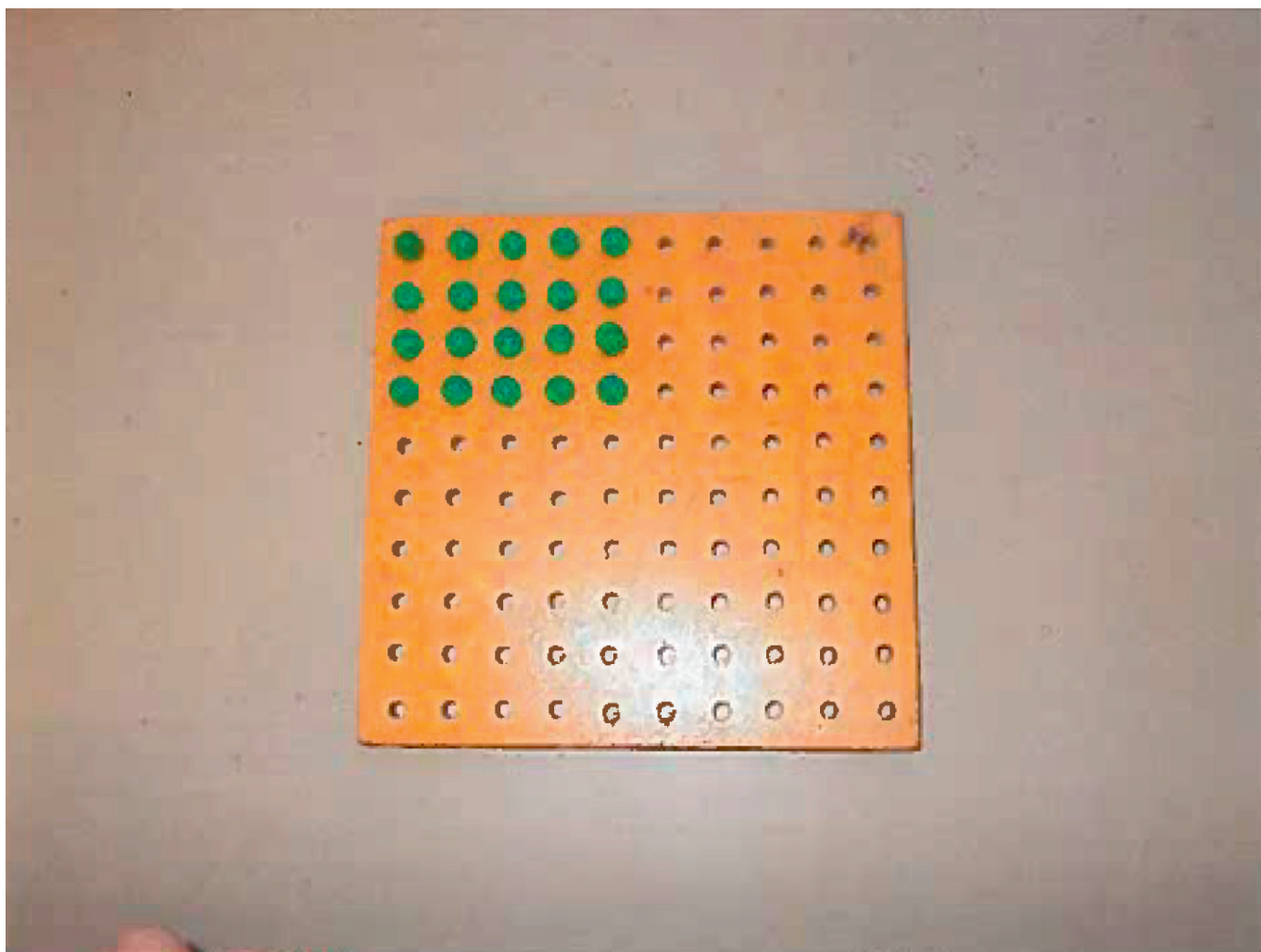
Context

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.

This was an assessment activity where pupils had to select two 2-digit number cards from the centre of the table and compare them, recording their work as statements using the ' $<$ ' or ' $>$ ' sign as appropriate. This pupil chose to make each equation using tens and ones apparatus to support their recording. The ' $<$ ' and ' $>$ ' signs are consistently used correctly in this piece of work, which demonstrates sound understanding. They independently recorded their answers.

Statement

The pupil can count in twos, fives and tens from 0 and use counting strategies to solve problems (e.g. count the number of chairs in a diagram when the chairs are organised in 7 rows of 5 by counting in fives).



Context

The pupil created an array on a pinboard. When asked for the total of pins, the pupil counted along the first row up to 5. They then counted a column of pins. The pupil then stated that there are '4 rows of 5, so I can count in 5s to find the answer: 5, 10, 15, 20. It must be 20.'

Statement

The pupil can count in twos, fives and tens from 0 and use counting strategies to solve problems (e.g. count the number of chairs in a diagram when the chairs are organised in 7 rows of 5 by counting in fives).

How many wheels do 4 bikes have?



• $2 + 2 + 2 + 2 = 8$

How many eyes do 5 children have?



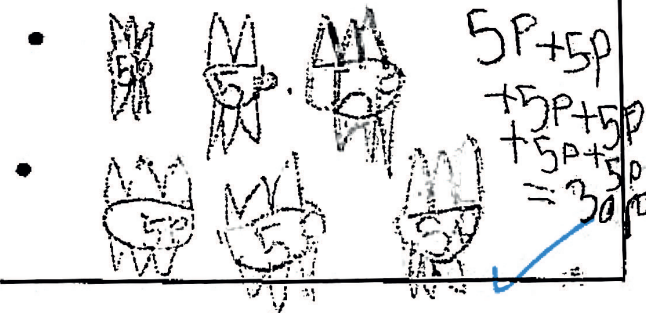
• $2 + 2 + 2 + 2 + 2 = 10$

How much does it cost for 3 lollies when they cost 5p each?



• $5p + 5p + 5p = 15$

How much does it cost for 6 toffees when they cost 5p each?



How many fingers do 3 children have?



• $10 + 10 + 10 = 30$

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.

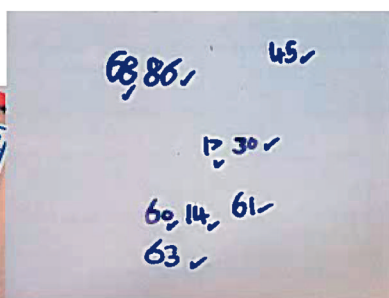
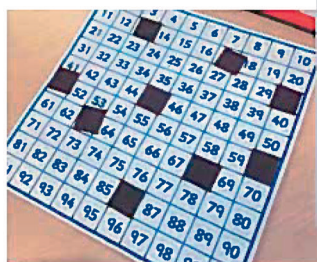
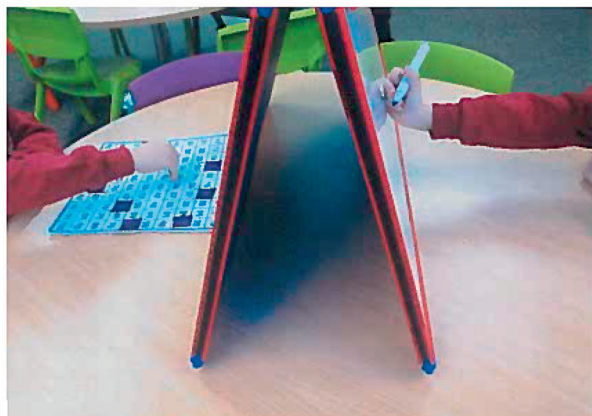
Statement

The pupil can read and write numbers correctly in numerals up to 100 (e.g. can write the numbers 14 and 41 correctly).

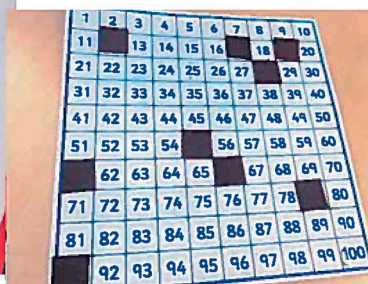
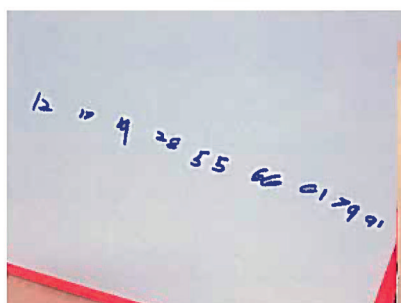


Numbers for reading were covered with a square to aid the teacher to match the writing of numbers to those read.

Children sat with a whiteboard frame between them, so that the writer couldn't see the numbers on the 100 square.



Harlow's writing of the numbers that Joe read to her.



Joe's writing of the numbers that Harlow read to him.

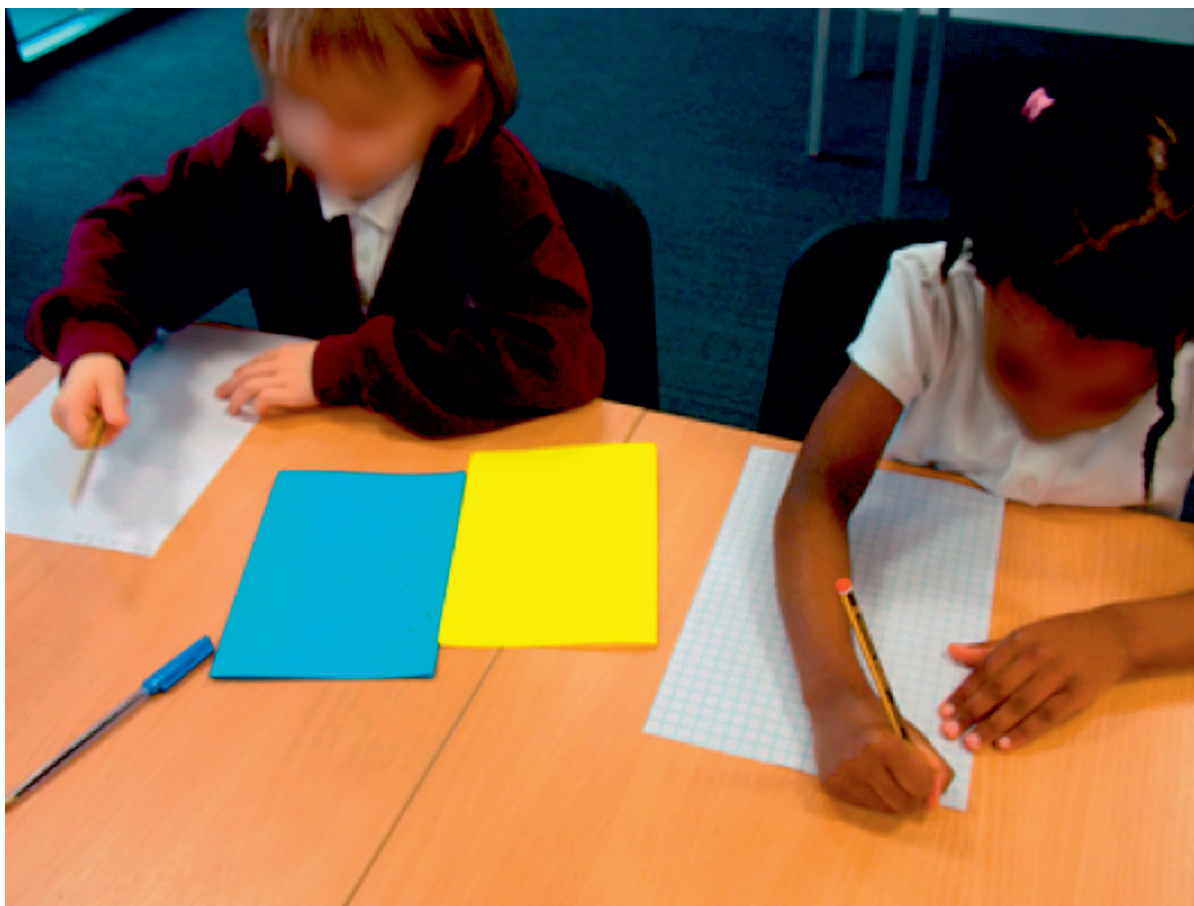
Context

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 of 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 both read and write numbers correctly.

Statement

The pupil can use number bonds and related subtraction facts within 20 (e.g. $18 = 9 + ?$; $15 = 6 + ?$).

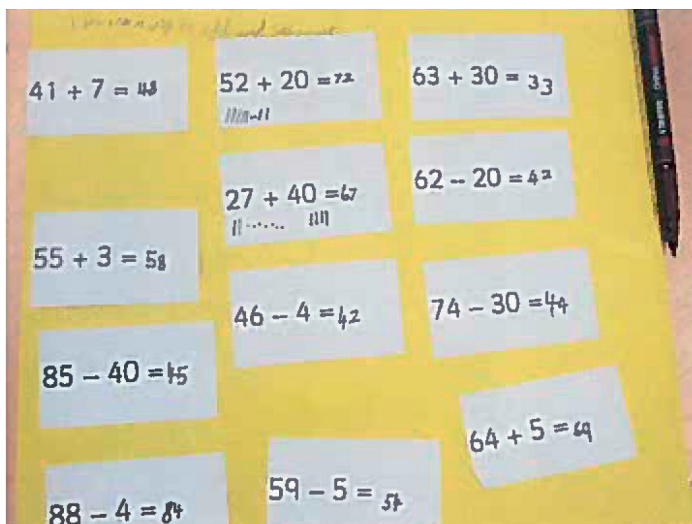
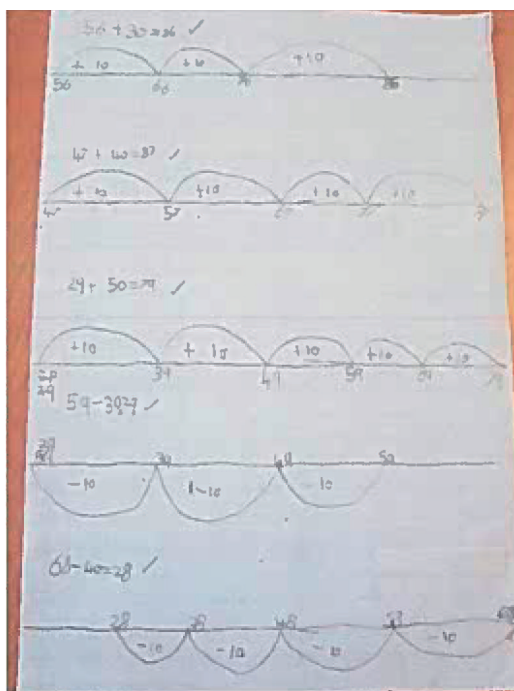
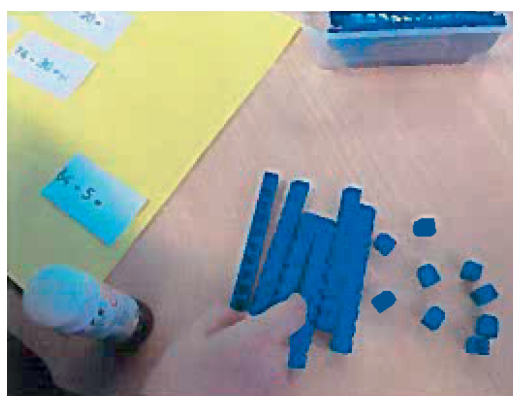
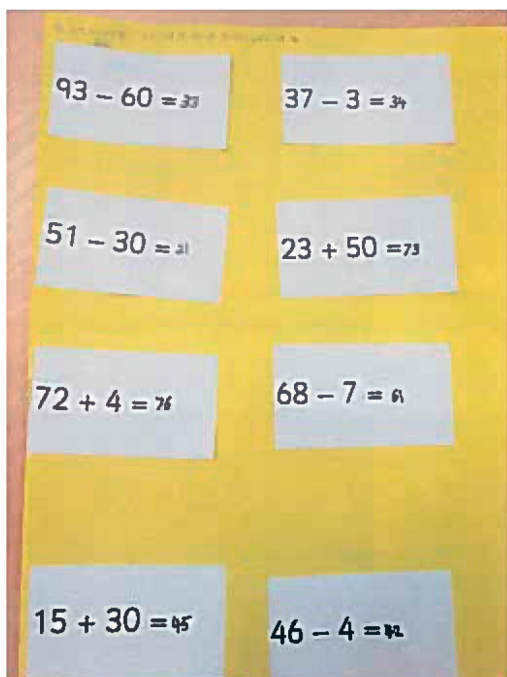


Context

Pupils worked in small groups to demonstrate their knowledge of number bonds up to 20. The pupils chose a number between 11 and 20 and the teacher then gave the group a number between 1 and 10. The pupils had to respond back with the number bond. The pupils each in turn provided correct answers to the teacher's request. Some pupils did not get the answer correct initially but were able to self-correct.

Statement

The pupil can add and subtract a 2-digit number and ones and a 2-digit number and tens where no regrouping is required (e.g. $23 + 5$; $46 + 20$), they can demonstrate their method using concrete apparatus or pictorial representations.



Context

The pupils had been working on addition and subtraction calculations. In the middle of the table were a range of addition and subtraction problems to solve, some adding/subtracting multiples of 10 to a 2-digit number and some adding/subtracting single digits to a 2-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.

Statement

The pupil can recall doubles and halves to 20 (e.g. pupil knows that double 2 is 4, double 5 is 10 and half of 18 is 9).



Context

The pupil had been asked to sort the dominos and identify those that displayed a double. The pupil was asked to explain how they knew it was a double and to recall some of the examples that they had found.

This discussion shows the pupil selecting doubles and then recalling doubles. Doubles were clearly displayed and the pupil correctly identified them.

The pupil explained '2 and 2 makes 4, 5 and 5 makes 10. Double 3 is 6.'

Statement

The pupil can recall doubles and halves to 20 (e.g. pupil knows that double 2 is 4, double 5 is 10 and half of 18 is 9).

Can I double numbers?

Draw the **same** number of dots on the other side of the domino then add together and record.



$$\text{double } 1 = 2$$

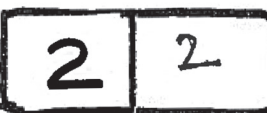


$$\text{double } 4 = 8$$

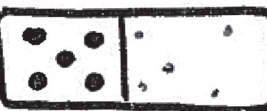


$$\text{double } 7 = 14$$

$$\text{double } 2 = 4$$



$$\text{double } 5 = 10$$



$$\text{double } 10 = 20$$



$$\text{double } 6 = 12$$



$$\text{double } 3 = 6$$



$$\text{double } 9 = 18$$



$$\text{double } 8 = 16$$

Context

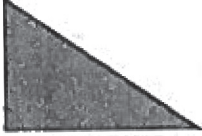





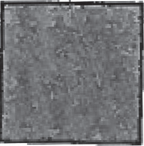

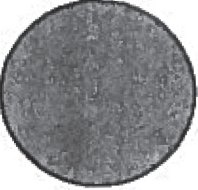

The pupil understood the concept of doubles as they completed each domino correctly and then added/doubled the numbers. The pupil could recall these facts when asked on 3 later occasions.

Statement

The pupil can recognise and name triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres from a group of shapes or from pictures of the shapes.

Name Khloe

LO: sort 2D shapes

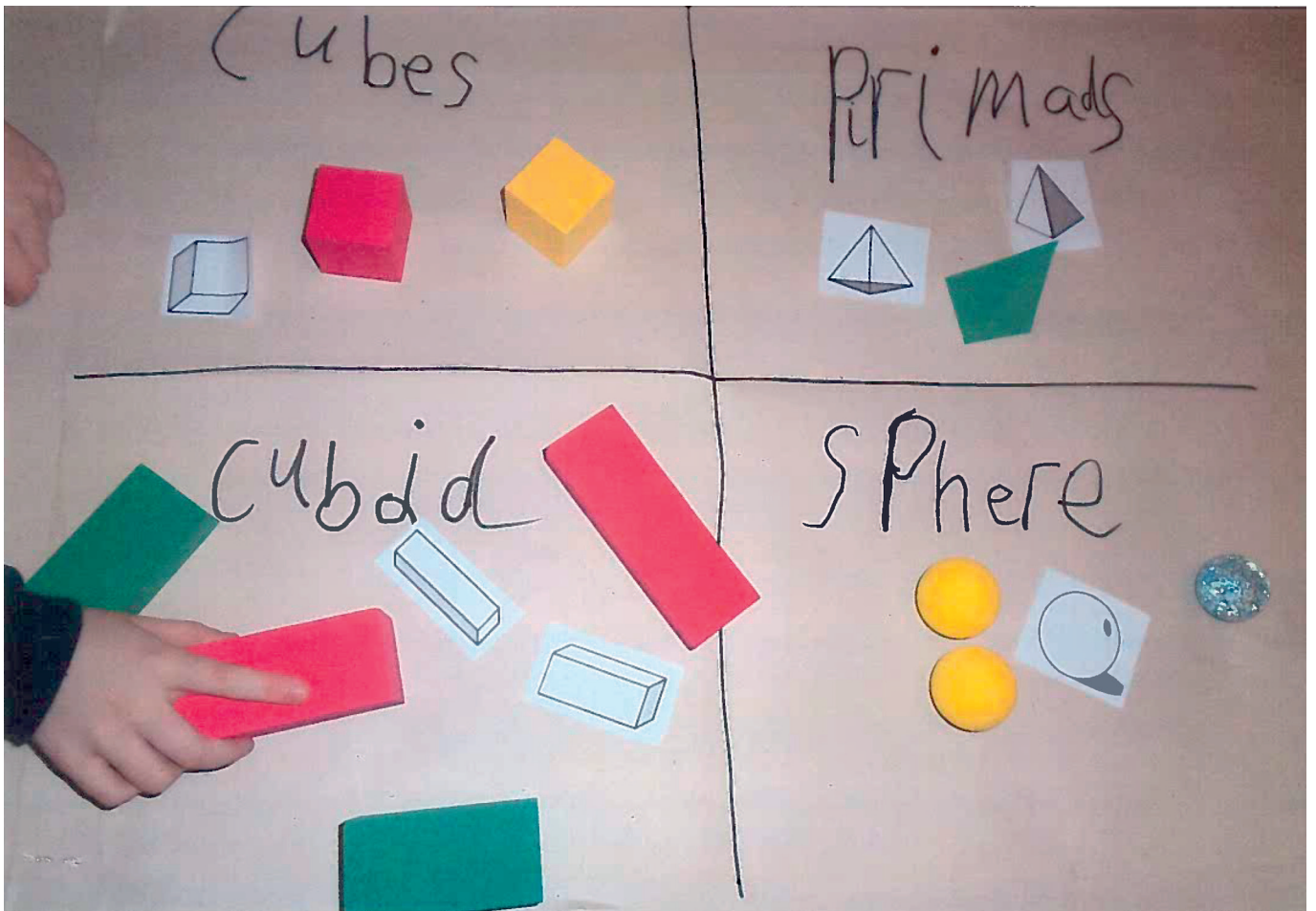
triangles	circles	squares	rectangles
			
			
			

Context

The pupils worked together in pairs to group a range of shapes and as a follow up activity were each given shapes to cut out and stick on a grid. This pupil worked with confidence, counting the sides and vertices to help her place the shapes correctly.

Statement

The pupil can recognise and name triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres from a group of shapes or from pictures of the shapes.



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.



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