

Thomas: Foundation Phase

I am learning to use < and > signs

47 > 80 ✓

17 < 47 ✓

80 > 12 ✓

31 > 17 ✓

94 > 56 ✓

51 > 41 ✓

56 < 63 ✓

41 < 47 ✓

39 < 88 ✓

51 < 56 ✓

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. Thomas pupil chose to make each equation using tens and ones apparatus to support his recording.

Thomas can write numbers to 100

(05)

He can compare two-digit numbers

(05)

He appears to understand values of digits and partitioning.

(05)

How many wheels do 4 bikes have?



• $2 + 2 + 2 + 2 = 8$

How many eyes do 5 children have?



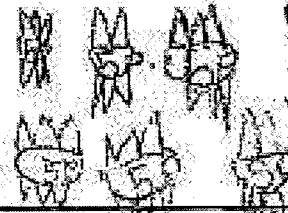
• $2 + 2 + 2 + 2 + 2 = 10$

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



• $5p + 5p + 5p = 15$

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



• $5p + 5p + 5p + 5p + 5p + 5p = 30p$

How many fingers do 3 children have?



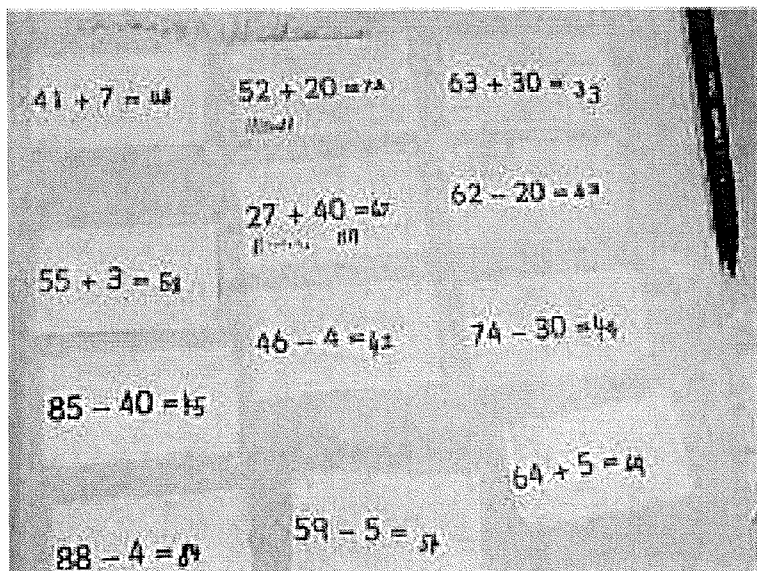
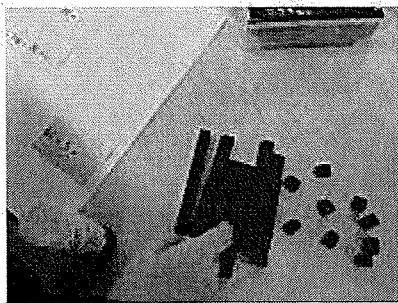
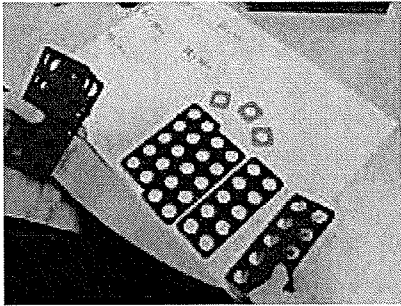
• $10 + 10 + 10 = 30$

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.

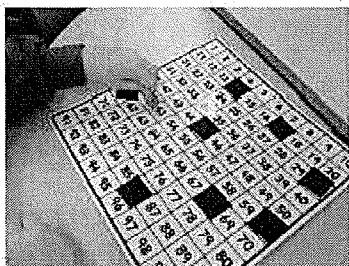
Thomas appears to understand that multiplication is repeated addition (05) although isn't using the x sign to record.

He is performing additions within 20 (05).

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. 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 bottom picture shows Thomas' work.

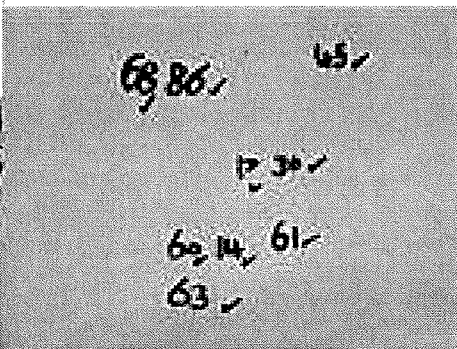
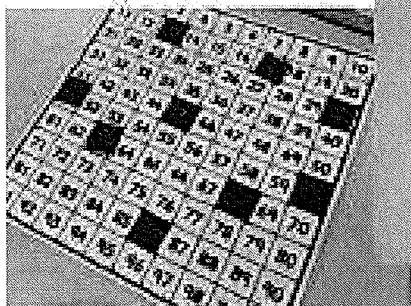
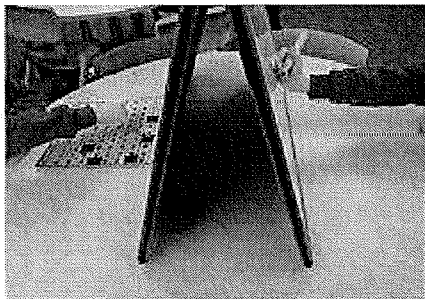


Thomas is adding
more difficult
calculations
~ it appears he
can count back
in tens and
ones
and count
on
- 'No bridging'



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.



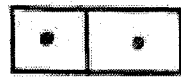
Pupils worked in pairs to play a game, sitting with a whiteboard frame between them. Pupil A read numbers from a

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 picture above shows what Thomas wrote.

05 - Thomas is reading + writing numbers to 100.

Can I double numbers?

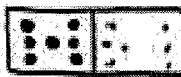
Draw the same number of dots on the other side of the domino then add together and record.



double 1 = 2



double 4 = 8



double 7 = 14

double 2 = 4



double 5 = 10



double 10 = 20



double 6 = 12



double 3 = 6



double 4 = 18

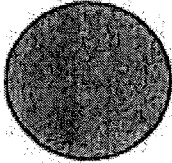
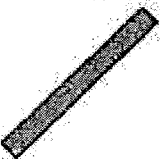


double 8 = 16

The pupils had been using dominoes to explore doubling. Thomas could recall these facts when asked on 3 later occasions.

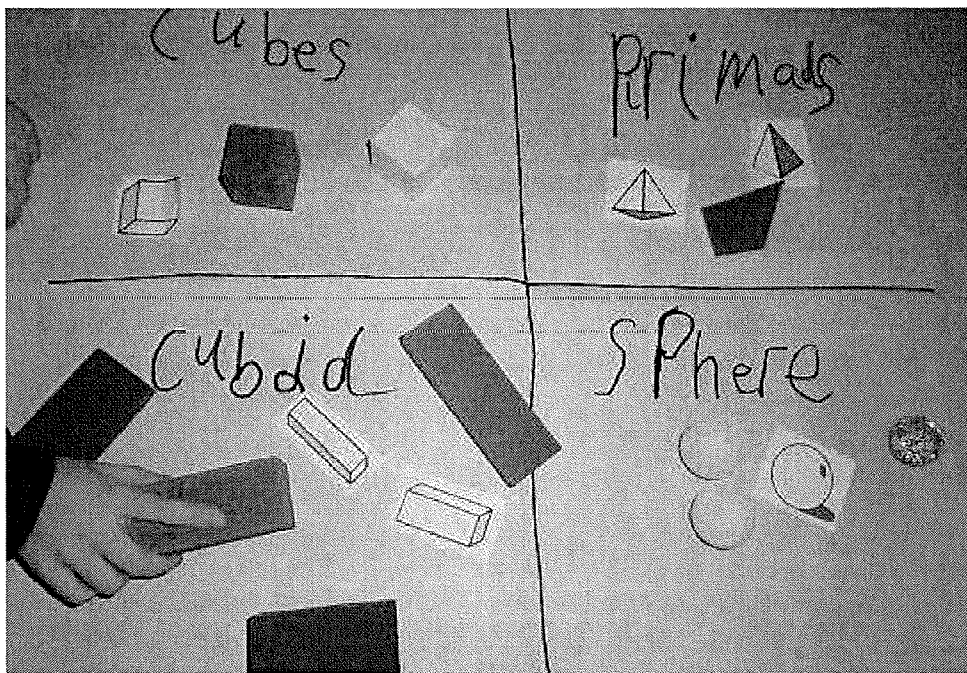
Thomas appears to have
mental recall of double
facts (05)
addn + subn
✓ Doubling
single digits
but no evidence
of double
digits (05)
which
would
be

LO: sort 2D shapes

triangles	circles	squares	rectangles
			
			
			

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. Thomas worked with confidence, counting the sides and vertices to help him place the shapes correctly

Thomas recognises 2D shapes (04)
and appears to
understand properties
(05)
although there is
no evidence for
describing
properties



The pupils were asked to group the 3D shapes according to their own criteria. Thomas sorted a variety of images and 3D shapes according to shape name.

Thomas appears to be able to recognise and name ^{3D} (common) shapes (04).

There isn't evidence of him describing properties (05)

~ perhaps he could have been asked why!

Summative comments:

Most of Thomas' work in number within these samples show elements of Outcome 5. Within shape work, his work shows evidence of Outcome 4.

In order for Thomas to further develop, he would need to be given opportunities to:

- Explain the value of digits. (05)
- Link repeated addition with multiplication (05)
- Develop / Demonstrate strategies for more complex addition and subtraction, including crossing tens boundaries. (06)
- Double two digit numbers. (05)
to 20.
- Explain properties of 2D and 3D shapes. (05).

Reasoning about numbers

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

Then explain why you chose that number.

$19 \times 5 =$	84	(95)	93
It's 95 because it ends in a five or 0 when you count in fives.			
$19 \times 2 =$	35	33	(38)
It's 38 because if counting in 2s it should be even.			
$19 \times 10 =$	(190)	185	192
I think it's 190 because when you count in tens it always ends in a 0.			
$28 + 38 =$	63	(66)	70
It's because $8 + 8 = 16$.			
$47 + 45 =$	90	95	(92)
It's 92 because $5 + 7 = 12$.			

Carys shows here that she can use 2, 5, 10 tables to solve problems and is able to recognise patterns in them. (06)

Carys is able to show that she can perform more complex additions (06) using her knowledge of number facts to support.

$$42 + 18 = 60$$



$$51 + 19 = 70$$



$$67 + 13 = 80$$



$$83 + 17 = 100$$



$$57 + 13 = 70$$



Here Carys shows she can perform more difficult additions (06) and is crossing tens boundaries.

5 pairs of socks = socks altogether

6 pairs of socks = socks altogether

If I have 11 socks, how many pairs of socks would I have?
There would be 5 pairs of socks and one sock left over.

9 pairs of socks = socks altogether

10 pairs of socks = socks altogether

If I have 19 socks, how many pairs of socks would I have?
There are nine pairs of socks and one sock left. I would have nineteen socks altogether.

6 pairs of socks = socks altogether

7 pairs of socks = socks altogether

If I have 13 socks, how many pairs of socks would I have?
There are 6 pairs of socks and one sock left. I would have 13 socks together.

There would be 5 pairs of socks and one sock left over.

$$+9 \quad +9 \quad 18$$

$$+10 \quad +10$$

There are nine pairs of socks and one sock left. I would have nineteen socks altogether.

There are 6 pairs of socks and one sock left. I would have 13 socks together.

Carys worked quickly and confidently through the task, without the use of any practical equipment, and clearly explained her understanding when questioned. For example, when explaining that there would be 9 pairs of socks and 1 sock left over if there were 19 socks altogether, she said 'I already know that 9 pairs of socks is 18 socks and 10 pairs of socks is 20 socks, so there must be 9 pairs of socks with 1 sock left as there aren't enough socks to make 10 pairs. I would need 1 more sock as you need 2 socks for a pair.'

Carys shows here that she can use doubling and halving (05) as well as linking doubling to two times tables. She appears to be recalling two times tables facts as well as beginning to understand remainders (01).

Problem solving with halves and quarters (2)

- 1) I have 24 sweets in a bag. I share them with my friend. How many do we get each?

$$\frac{1}{2} \text{ of } 24 = 12 \quad \checkmark$$

- 2) Tom has 30 marbles. He loses half of them in a game. How many does he have left?

$$\frac{1}{2} \text{ of } 30 = 15 \quad \checkmark$$

- 3) Dad made 28 buns. He put half away in a tin. How many buns are left?

$$\frac{1}{2} \text{ of } 28 = 14 \quad \checkmark$$

- 4) 16 children went to a party. One quarter of them don't like pizza. How many children is that? So how many DO like pizza?

$$\frac{1}{4} \text{ of } 16 = 4 \text{ so } 12 \text{ like pizza} \quad \checkmark$$

- 5) There were 40 chocolates in a box. We ate one quarter of them. How many are left now?

$$\frac{1}{4} \text{ of } 40 = 10 \text{ so } 30 \text{ are left} \quad \checkmark$$

- 6) There are 32 balloons in a packet. We blew up half of them. How many is that?

$$\frac{1}{2} \text{ of } 32 = 16 \quad \checkmark$$

- 7) Mum bought 12 apples. When she got home, she found that a quarter of them were bad. How many good apples were there?

$$\frac{1}{4} \text{ of } 12 = 3 \text{ so } 9 \text{ are good} \quad \checkmark$$

- 8) There are 24 footballs in the basket. One quarter of them are flat. How many are not flat?

$$\frac{1}{4} \text{ of } 24 = 6 \text{ so } 18 \text{ are blown up} \quad \checkmark$$

- 9) 16 cars are in the car park. $\frac{1}{4}$ of them are red. How many cars are not red?

$$\frac{1}{4} \text{ of } 16 = 4 \text{ so } 12 \text{ are not red} \quad \checkmark$$

- 10) There are 20 children in Class 2. One quarter of them wear glasses. How many children don't wear glasses?

$$\frac{1}{4} \text{ of } 20 = 5 \text{ so } 15 \text{ don't wear glasses} \quad \checkmark$$

Carys is able to find half of numbers as well as quarters. She is finding halves + quarters in real life situations (relates to 06)

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?

$$\begin{array}{r} 3 \times 60p = \pounds 1.80 \\ 2 \times 20p = \pounds 0.40 \\ \hline \pounds 2.20 \end{array}$$

$$\pounds 5.00 - \pounds 2.20 = \pounds 2.80$$

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
○○○○○○○○ = 8 each

6 pizzas
⊕ ⊕ ⊕ ⊕ ⊕ ⊕

$6 \times 4 = 24$ 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?

$$6 \times 5 = 30$$

$$32 - 30 = 2$$

I need 2 more apples

Pupils were given several tasks to choose from and Carys chose this task. The questions were written down for her.

Carys is using multiplication to
solve problems
(06)

She can pay for items beyond
£2 and
calculate

Decimal notation for money (06) change (06)

I have £1.00 to spend. I buy a mix of ice creams (10p), lollies (5p) and ice pops (2p).

Show 3 different ways of spending exactly £1.00.

$$\begin{array}{l}
 \text{Ice Creams: } 7 \times 10 = 70p \\
 \text{Lollies: } 4 \times 5 = 20p \\
 \text{Ice Pops: } 15 \times 2 = 10p \\
 \hline
 \text{Total: } 70p + 20p + 10p = 100p = \text{£}1.00
 \end{array}$$

$$\begin{array}{l}
 \text{Ice Creams: } 6 \times 10 = 60p \\
 \text{Lollies: } 11 \times 5 = 55p \\
 \text{Ice Pops: } 6 \times 5 = 30p \\
 \hline
 \text{Total: } 60p + 55p + 30p = 145p \neq \text{£}1.00
 \end{array}$$

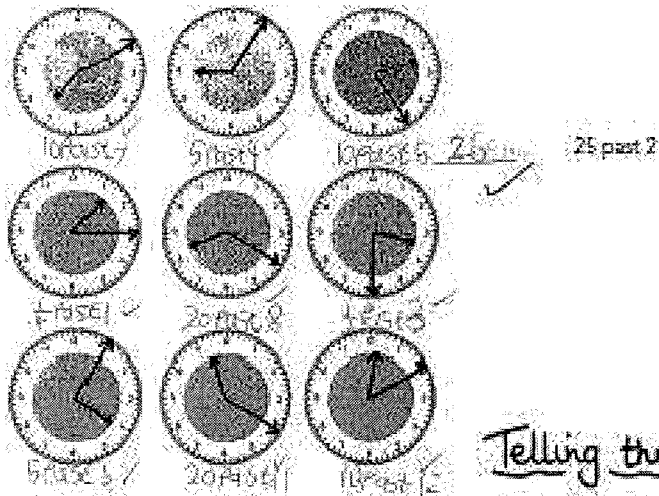
$$\begin{array}{l}
 \text{Ice Creams: } 5 \times 10 = 50p \\
 \text{Lollies: } 6 \times 5 = 30p \\
 \text{Ice Pops: } 10 \times 2 = 20p \\
 \hline
 \text{Total: } 50p + 30p + 20p = 100p = \text{£}1.00
 \end{array}$$

Carys understands multiplication and is using it to solve problems (06)

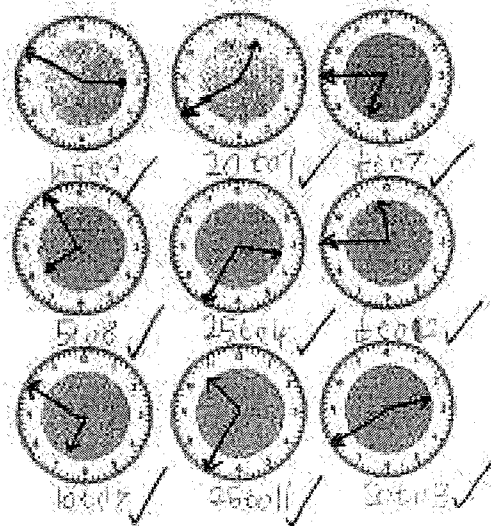
She can calculate with money (up to £1 (05) here) and is using decimal notation with money (06)

Can I tell the time to 5 minutes?

- Look at the long hand first.....
- How many minutes past?



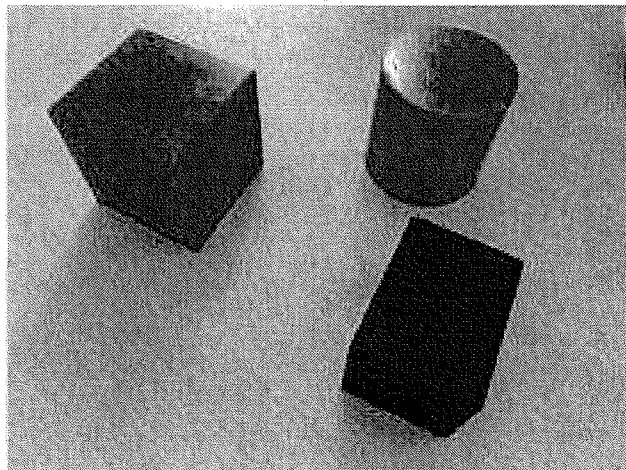
Telling the time "to" the hour



Carys can read the hour and minutes to the nearest 5 minutes on an analogue clock (06)

The cube has 8 vertices and so does the cuboid but the cylinder has none.
 The cuboid has 12 edges and the cube has 12 as well
 The cylinder has 2 edges and its curved and the others have all straight edges.
 The cube has square faces there are six of them.
 The cuboid has 2 square faces and 4 rectangle faces.

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



Pupils were working in a group of 4, to encourage interactive discussion about the shapes, but then worked independently to record statements about the shapes.

The teacher observed the pupils' discussion, the way they handled shapes and counted the properties. The pupils also used shape language confidently and corrected each other if the wrong terminology was used. This is Carys' recorded evidence.

Carys can recognise and describe properties of 3D shapes for classification
 - not full evidence for OB but some towards it.

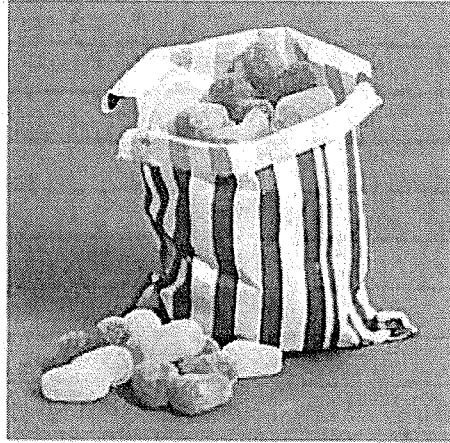
Summative comment: Carys

Much of Carys' work shows elements of outcomes. She is confidently working with calculations with number, using number facts and relationships to help her.

In order to show further evidence for outcomes (and to extend her learning), Carys would need to be given opportunities to:

- Classify 3D shapes, using a greater range of shapes.
- Show understanding of division, including with remainders.
- Reading a clock to the nearest minute.

Alena: Foundation Phase



The bag of sweets costs 45p

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

$$10p + 10p + 10p + 10p + 5p = 45p$$

$$20p + 20p + 5p = 45p$$

$$5p + 5p + 5p + 5p + 5p + 5p + 5p + 5p = 45p$$

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

$$10p + 10p + 5p + 5p + 5p + 5p + 5p = 45p$$

$$10p + 10p + 10p + 5p + 5p + 5p = 45p$$

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

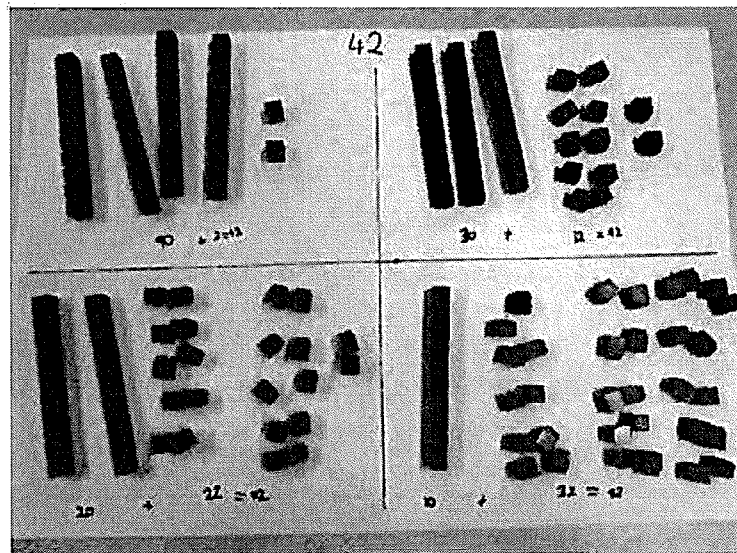
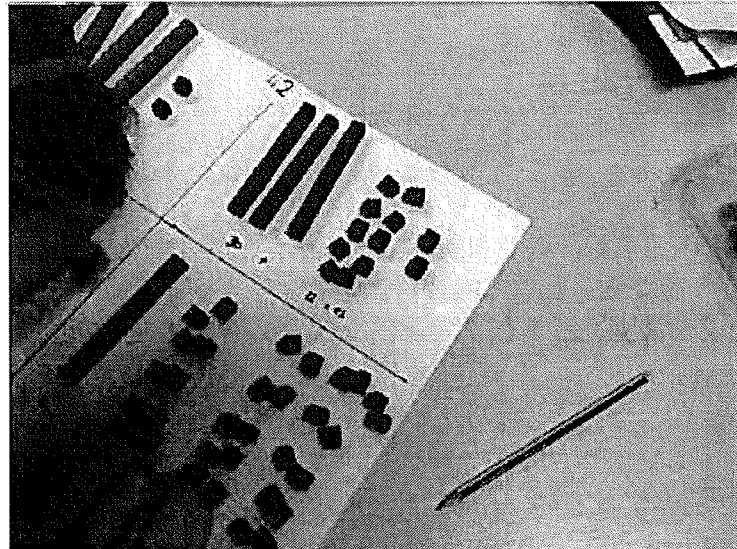
$$20p + 5p + 5p + 5p + 5p + 5p = 45p$$

$$10p + 5p + 5p + 5p + 5p + 5p + 5p + 5p = 45p$$

Some evidence here:
Alena can 'pay' for
items up to £1
(05)

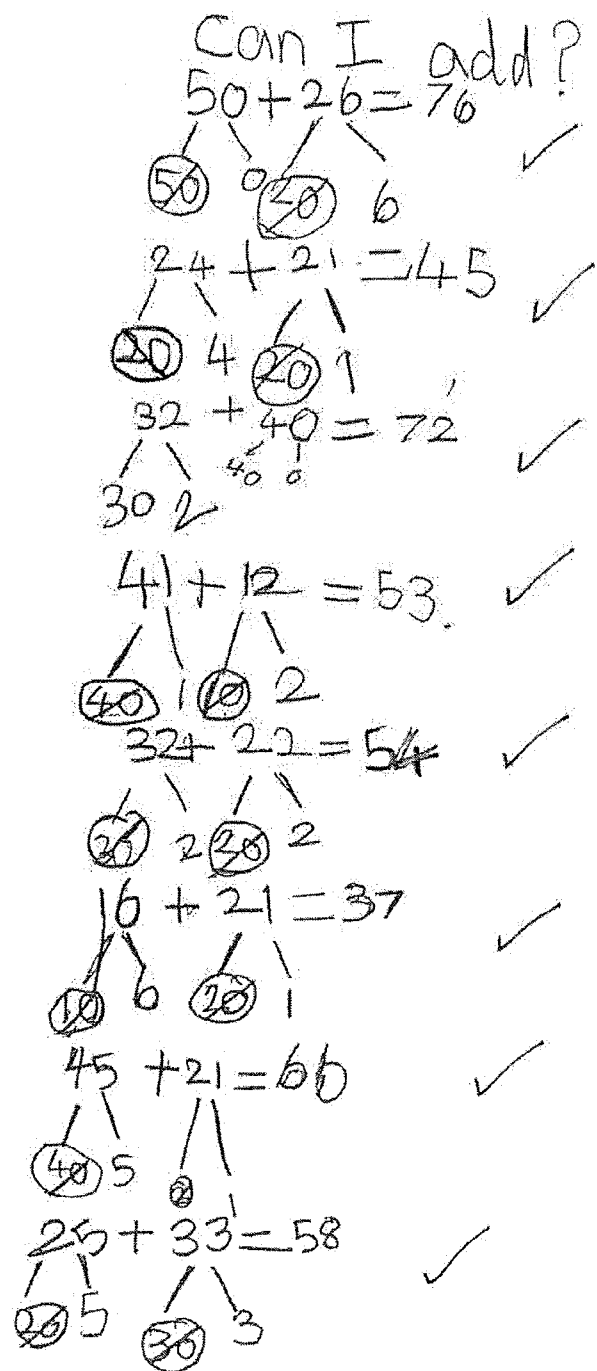
She can count on in
10's and 5's (05)

Following work on place value, the pupils were asked to show their understanding by partitioning two-digit numbers in different ways, with a range of apparatus 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 apparatus. Alena chose the base ten equipment and the photographs show her work



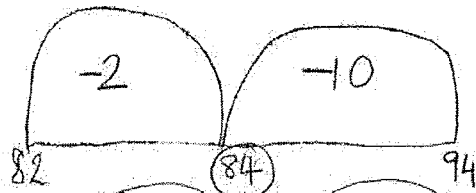
Alena worked independently and quickly became systematic in her use of the apparatus, by positioning the ones in a recognisable pattern of ten. When asked about this, Alena said that it made it easier to count and she explained that she was taking one ten away each time and putting ten ones down instead.

Alena can show understanding of place value up to 100 - partitioning 2 digit numbers (05) understands value. Some evidence of writing numbers to 100 (05)

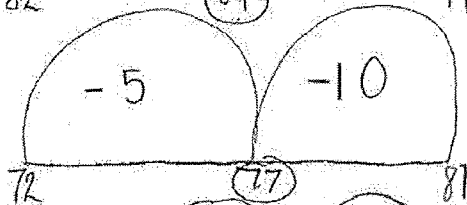


Alena can perform additions
 and is able to partition
 two digit
 Some evidence of Ob (using place value to support) but (05) numbers
 she is not crossing any tens
 boundaries here

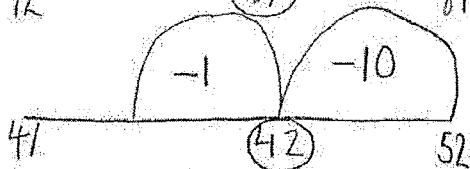
Tan I subtract 2 digit numbers?



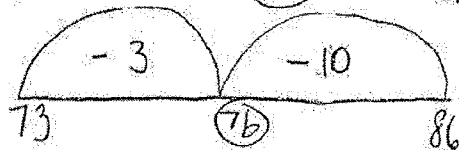
$$94 - 12 = 82 \checkmark$$



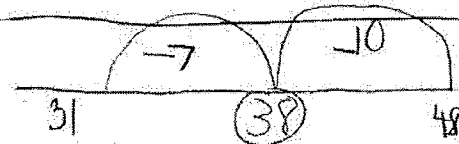
$$87 - 15 = 72 \checkmark$$



$$52 - 11 = 41 \checkmark$$



$$86 - 13 = 73 \checkmark$$



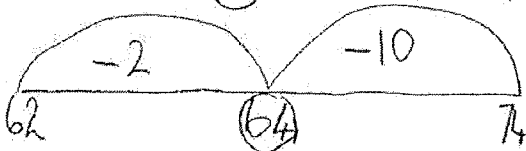
$$48 - 17 = 31 \checkmark *$$



$$66 - 14 = 52 \checkmark *$$



$$39 - 17 = 22 \checkmark$$

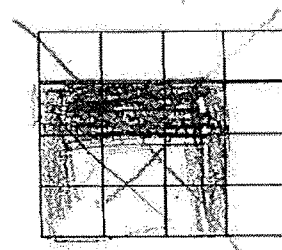
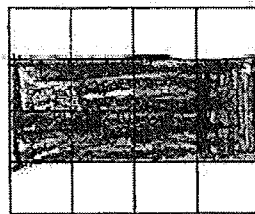
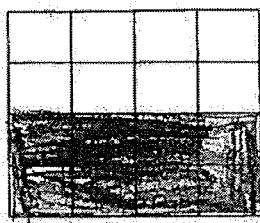
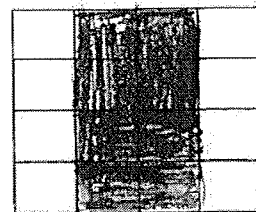
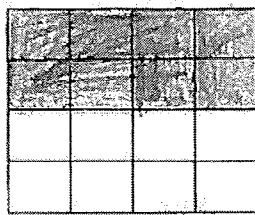
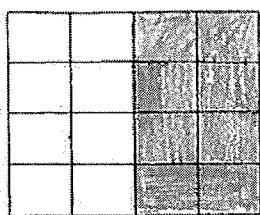


$$74 - 12 = 62 \checkmark$$

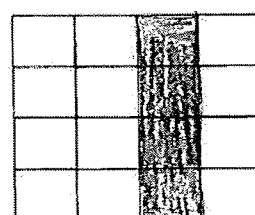
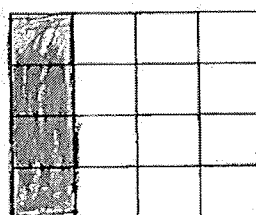
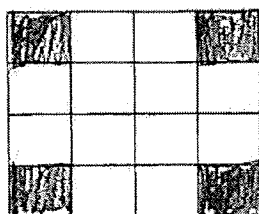
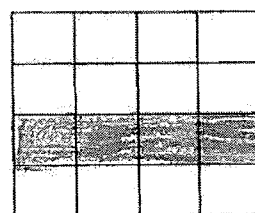
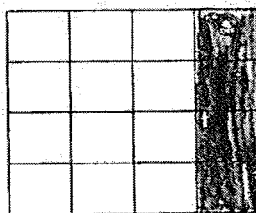
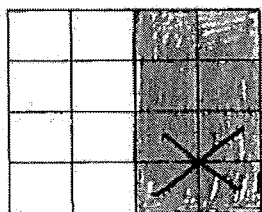
Alera can count back to
subtract
using 10 tens (05)
She hasn't
crossed tens
boundary.
which would provide
greater evidence for 66.

13.10.14 I am learning to understand fractions.

Can you show one half of each shape in different ways?

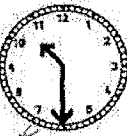


Can you show one quarter of each shape in different ways?



Alena shows that she
understands
halves + quarters
(05) but
has not shown
evidence of
understanding
the relationship
between them
(06)

Can I order everyday events?

 ① I get up at half past 7	 ② start school at 9 o'clock
 ③ play out at half past 10	 ④ I eat my lunch at 12 o'clock
 ⑤ I finish school at quarter past 3	 ⑥ I watch TV at 4 o'clock
 ⑦ I have my tea at half past 5	 ⑧ I go to bed at quarter to 8

~~eat dinner~~
 ① get up
 watch T.V.

~~have my tea~~
 start school
 go to bed

~~finish school~~
 play out

Alena is using analogue clock to tell the time by reading quarters of an hour (05)

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 2 short sides & 2 long sides ✓ - It is not equal ✓ - It is symmetrical ✓
	Triangle ✓	- It is equilateral ✓ - It is symmetrical ✓ - It has 3 corners ✓ - It has 3 sides ✓ - It is not equal ✓
	Square ✓	- It has 4 sides ✓ - It has 4 corners ✓ - It is not equal ✓ - It is symmetrical ✓ - It has 4 sides ✓
	Circle ✓	- It has 1 curved side ✓ - It has 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 5 sides ✓
	Hexagon ✓	- The hexagon is 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 ✓
	Octagon ✓	- It has 8 sides ✓ - It has 8 corners ✓ - It is not equal ✓ - It is symmetrical ✓
Shape	Name of shape	Properties
	quadrilateral ✓	- It has 4 sides ✓ - It has 4 corners ✓ - It has 2 parallel sides ✓ - It is not equal ✓
	Pentagon ✓	- It has 5 sides ✓ - It has 5 corners ✓ - It is symmetrical ✓
	quadrilateral ✓	- It has 4 sides ✓ - It has 4 corners ✓ - It is not symmetrical ✓
	hexagon ✓	- It has 6 sides ✓ - It has 6 corners ✓ - It is not symmetrical ✓

Here Alena recognises and classifies regular 2D shapes.
(06)

Summative Comment: Alena

Alena's work here shows evidence of elements of Outcome 5 - particularly in number although there are some indications that she is at the secure end of Outcome 5 because there are some aspects of Outcome 6. In shape (2D) there is evidence of Outcome 6.

To make further progress and providing evidence for Outcome 6, Alena will need to be given opportunities to:

- demonstrate that she can perform more difficult addition + subtraction calculations (particularly crossing tens boundary)
- Use money in a range of contexts, being extended to paying with a greater variety of coins and calculating change.
- Read and write and calculate with numbers beyond 100.
- Show understanding of multiplication and division (no evidence in what was presented).