Procedural variation examples
Fluency project
Enigma Maths Hub

A collection of procedural variation questions that we have been using to develop mastery in mathematical fluency with our pupils.

Created by a group of schools involved in a fluency project funded by the Enigma Maths Hub

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Background

In order to develop fluency with our pupils we explored the use of procedural variation.

Procedural variation is often used in Shanghai and we have been hearing more about this approach in the UK.

Mike Askew has talked about Variety or Variation and we used this when developing our own understanding

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Variety or Variation?

Mike Askew uses the following statements which we found useful

- **Variety**

  ‘Pick and mix’

  Most practice exercises contain variety

- **Variation**

  Careful choice of WHAT to vary

  Careful choice what the variation will draw attention to

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Addition and subtraction variation examples

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Caroline Haslett Primary School
Louise Cullen
Foundation Stage

Foundation Stage and variation

This activity was carried out by FS children as a morning activity.

Some children were able to spot the pattern but found it difficult to verbalise what they did.

T said "there is a 6 there and a 6 there". S said "1, 2, 3, 4, 5, 6"

Although children were generally unable to verbalise what they did, I think several of them did use the pattern as they got the last two missing numbers correct which I would not have expected them to.

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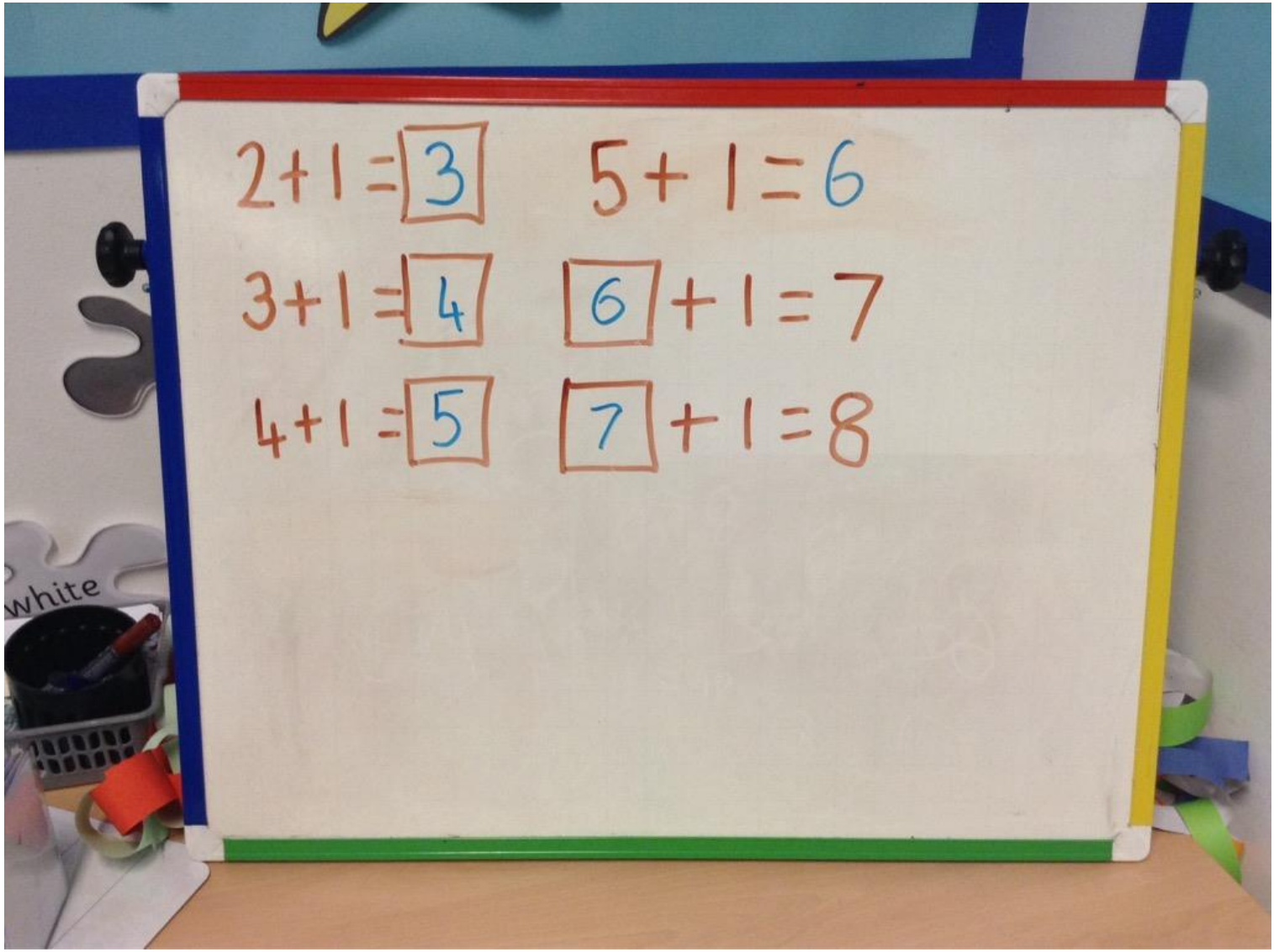
Foundation stage and variation



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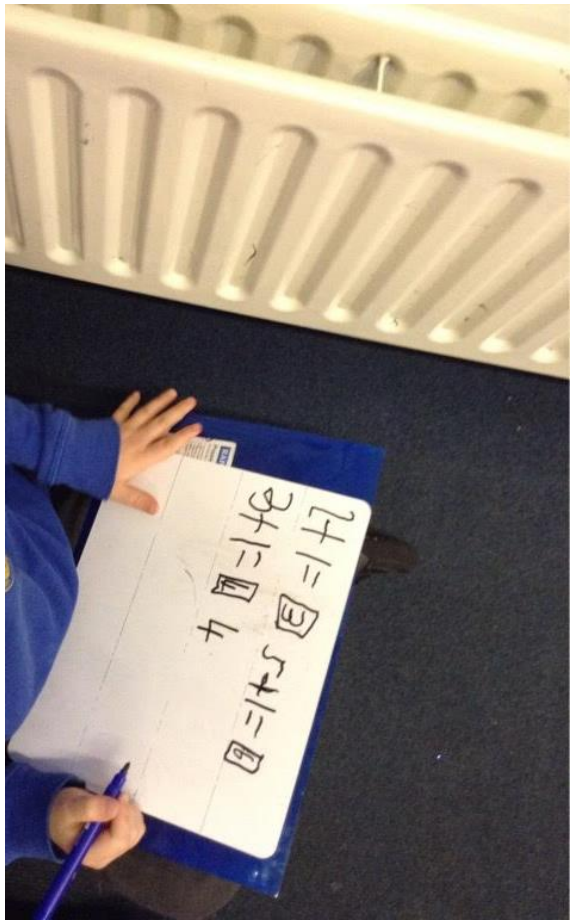
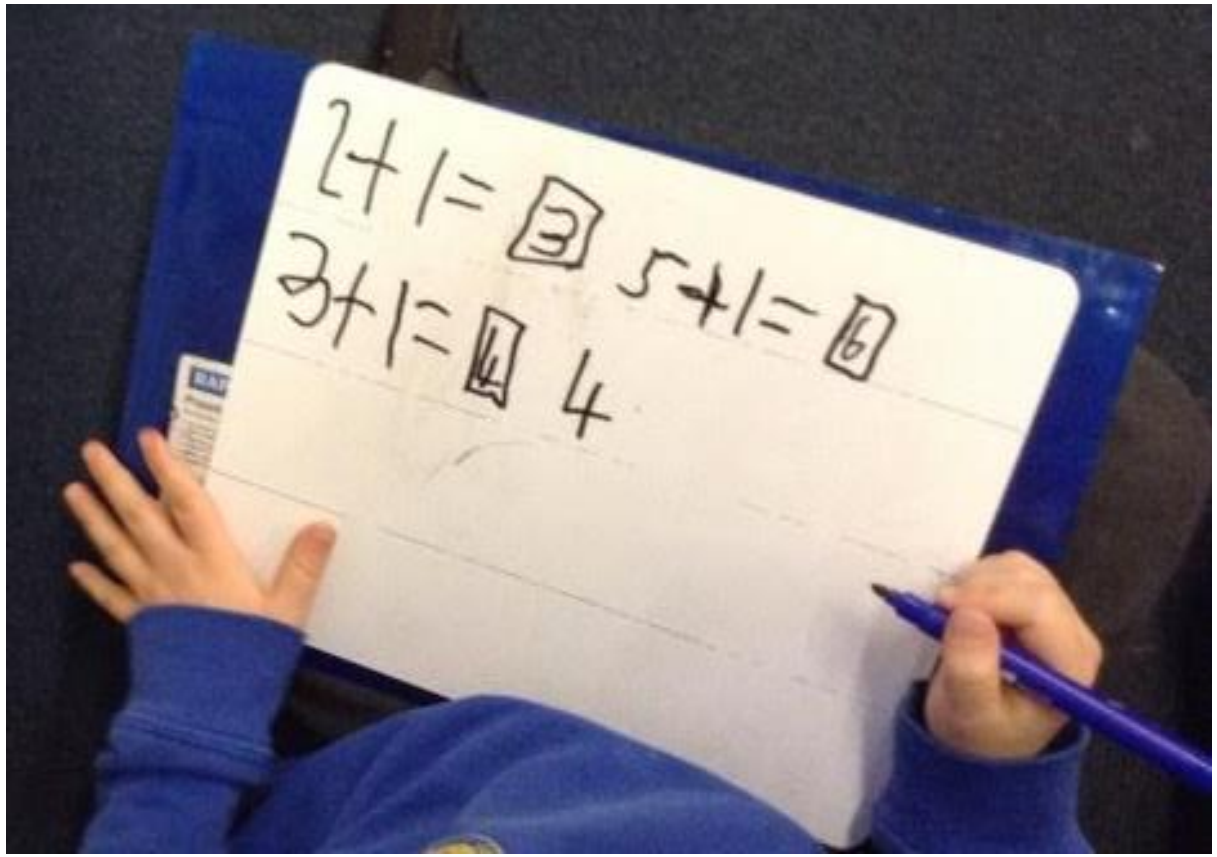
Foundation stage and variation

Foundation stage and variation





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Irchester Primary School
Ruth Heygate
Year 1

Year 1 Variation: Facts of 10

1 + 9 = ___ + 1 = 10 ____ + 9 = 10 10 - ___ = 9 10 - ___ = 1	2 + 8 = ___ + 2 = 10 ____ + 8 = 10 10 - ___ = 8 10 - ___ = 2	3 + 7 = ___ + ___ = 10 7 + ____= 10 10 - ___ = 7 10 - ___ = 3
6 + 4 = ___ + 6 = 10 ____ + 4 = 10 10 - ___ = 4 10 - ___ = 6	5 + 5 = ___ + ___ = 10 5 + ____= 10 10 - ___ = 5 10 - ___ = 5	

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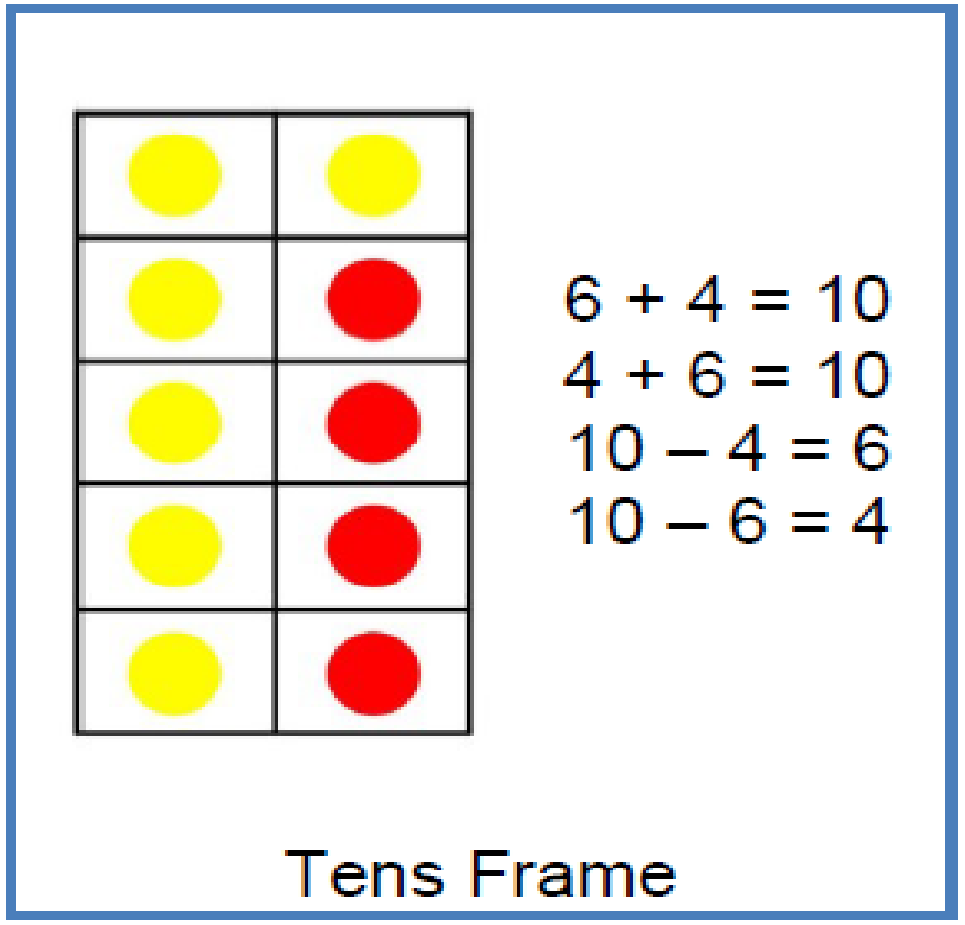
Variation supported through model below



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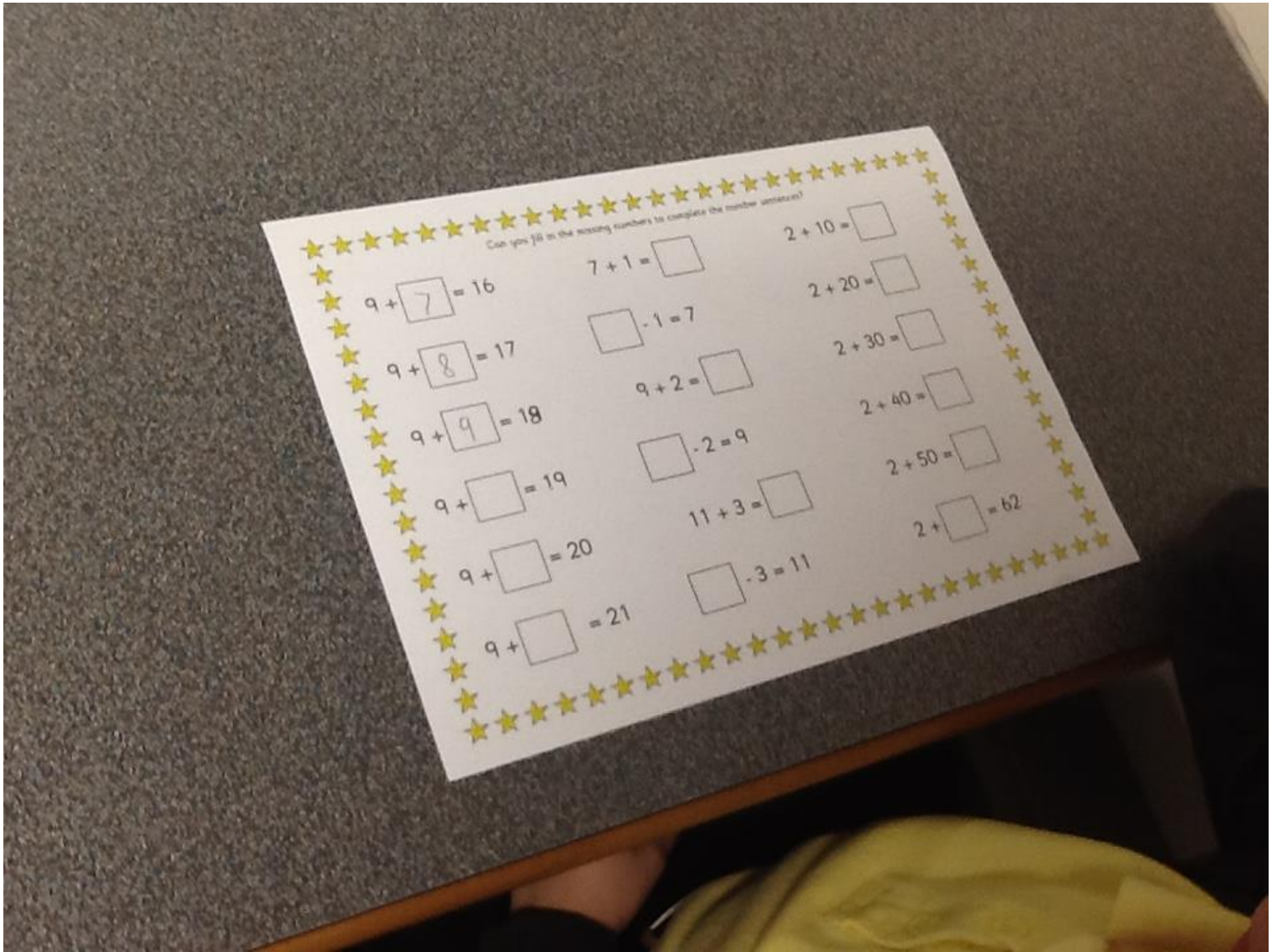
Barleyhurst Primary School
Gemma Anderson
Year 1

Can you fill in the missing numbers to complete the number sentences?

9 + ☐ = 16	7 + 1 = ☐	2 + 10 = ☐
9 + ☐ = 17	☐ - 1 = 7	2 + 20 = ☐
9 + ☐ = 18	9 + 2 = ☐	2 + 30 = ☐
9 + ☐ = 19	☐ - 2 = 9	2 + 40 = ☐
9 + ☐ = 20	11 + 3 = ☐	2 + 50 = ☐
9 + ☐ = 21	☐ - 3 = 11	2 + ☐ = 62



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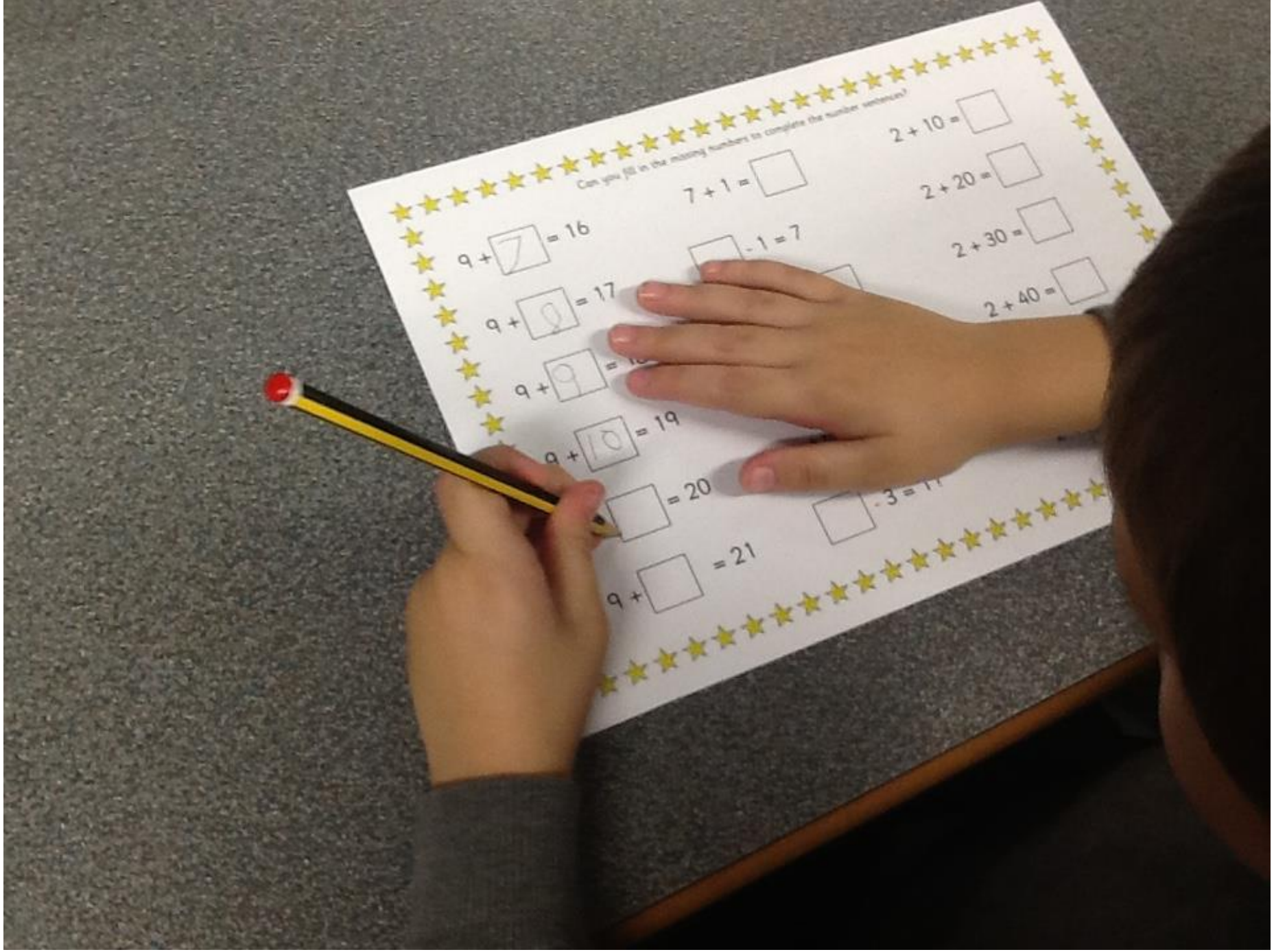

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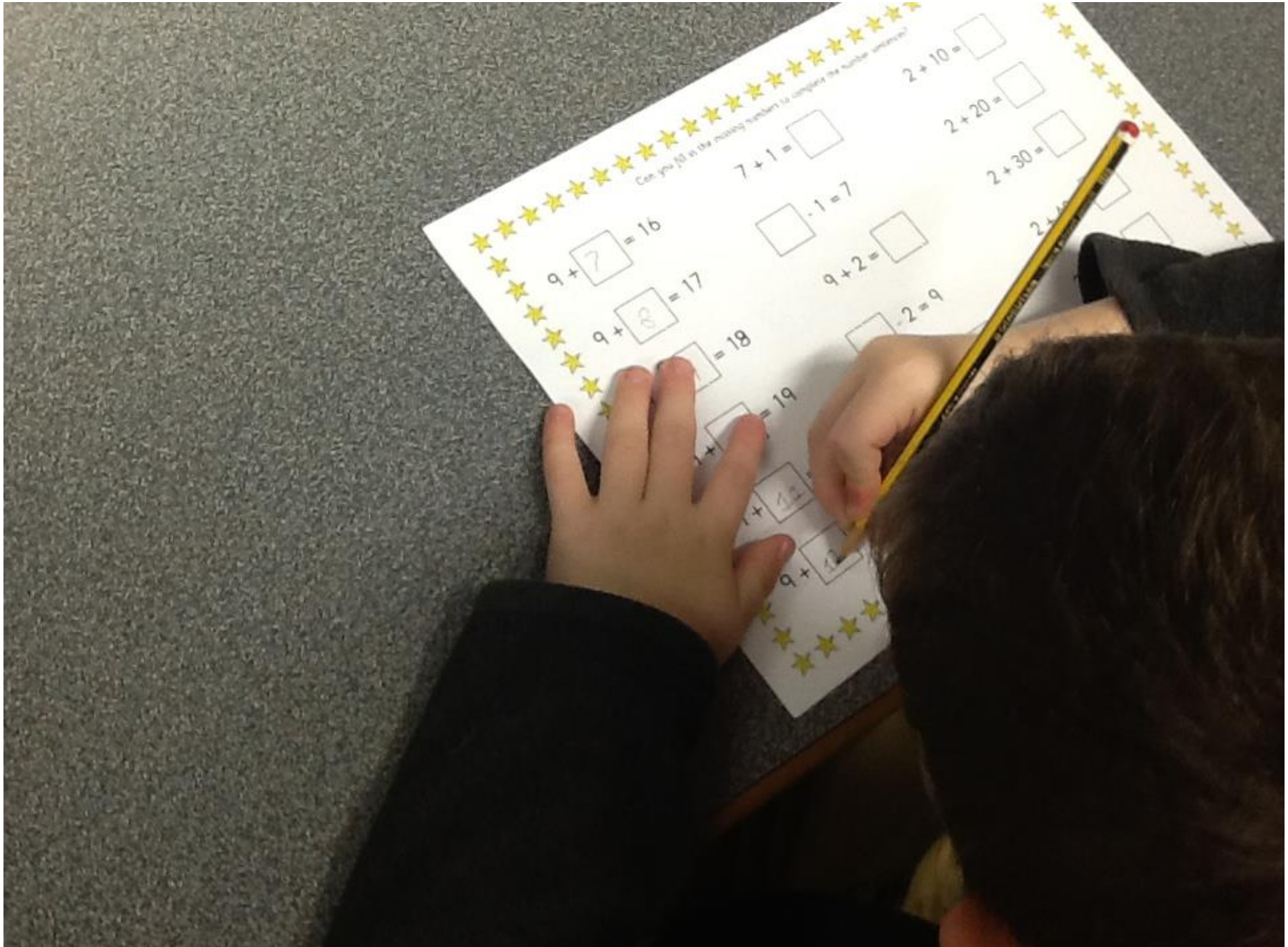

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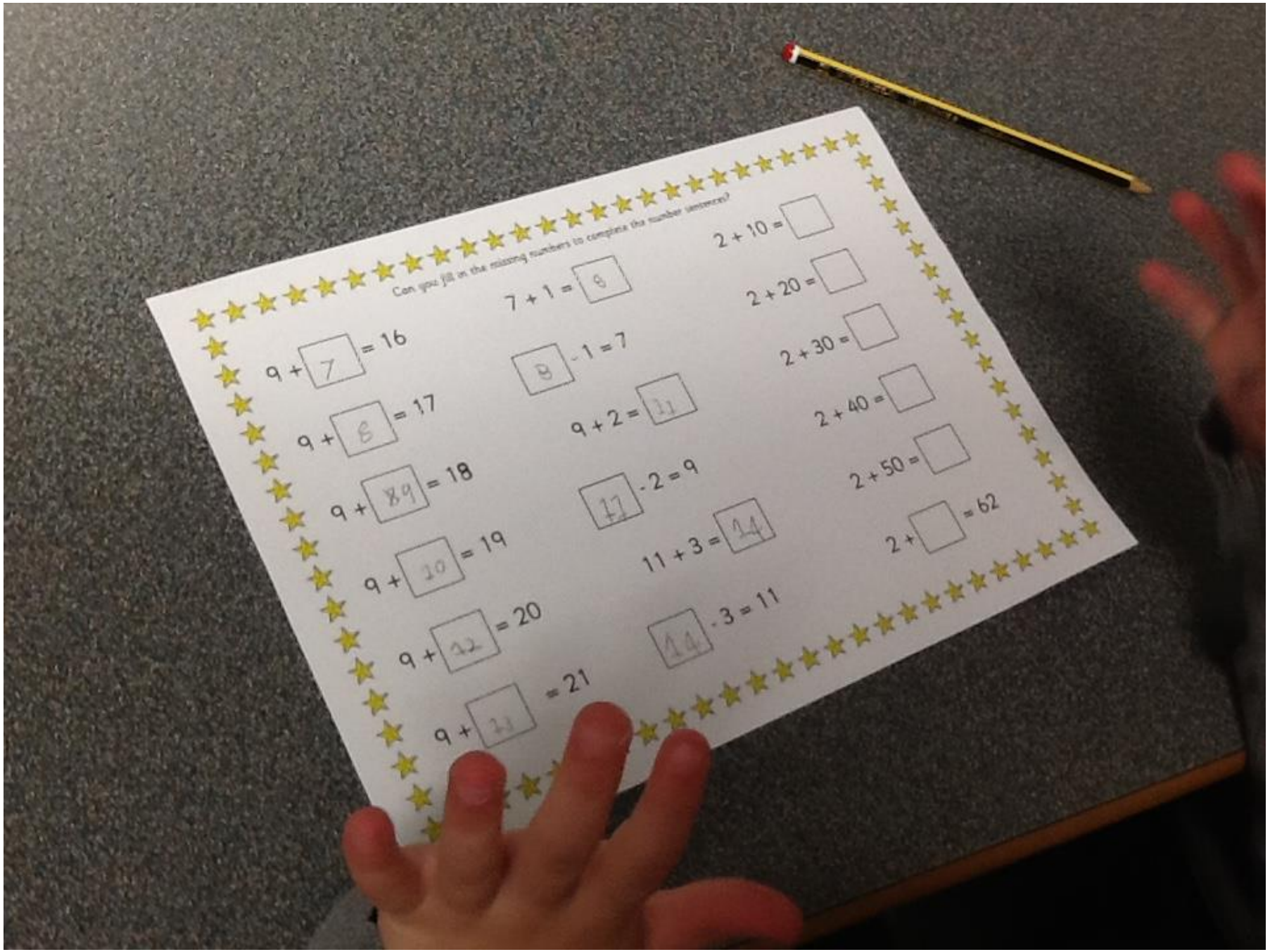

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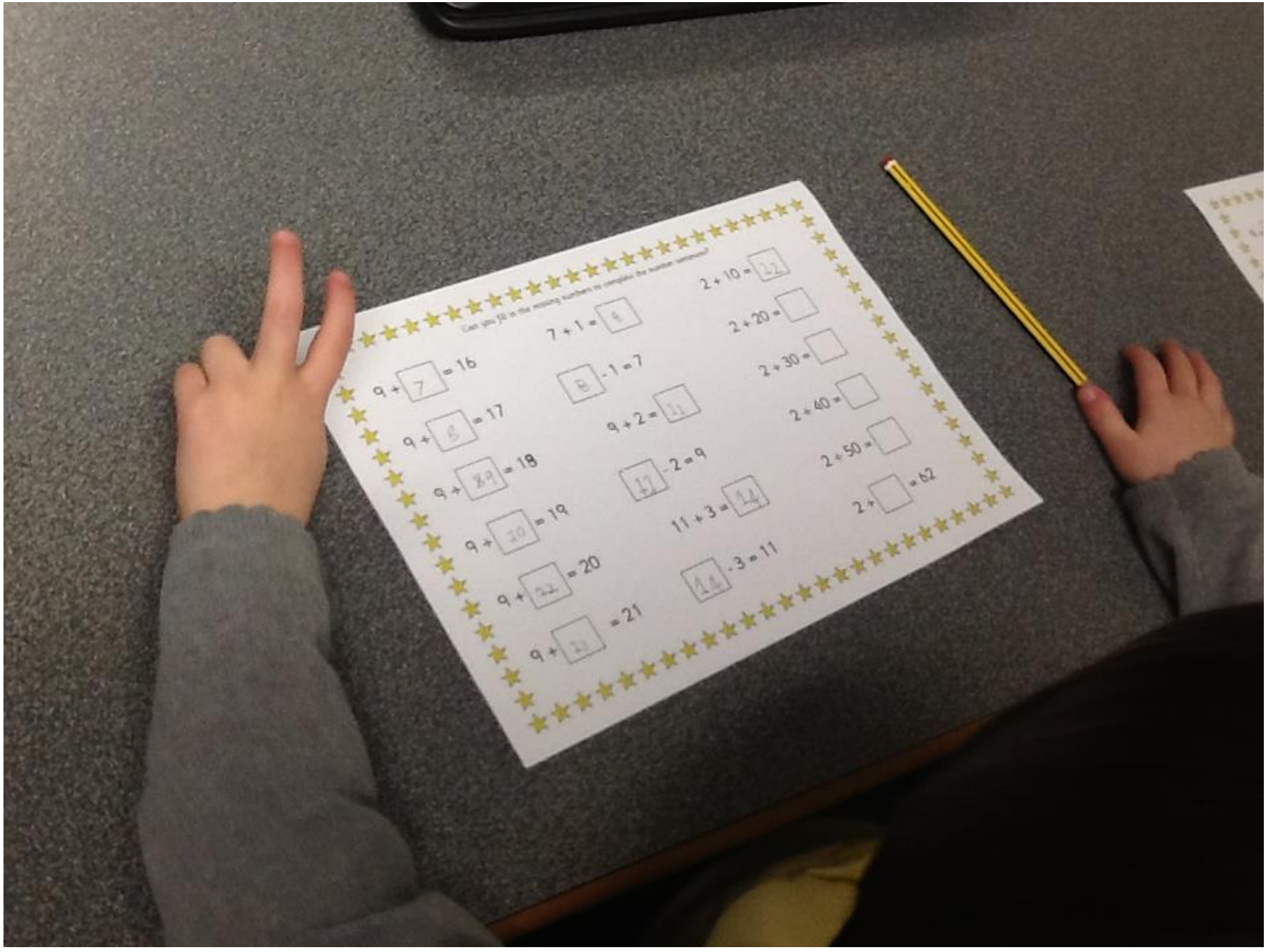

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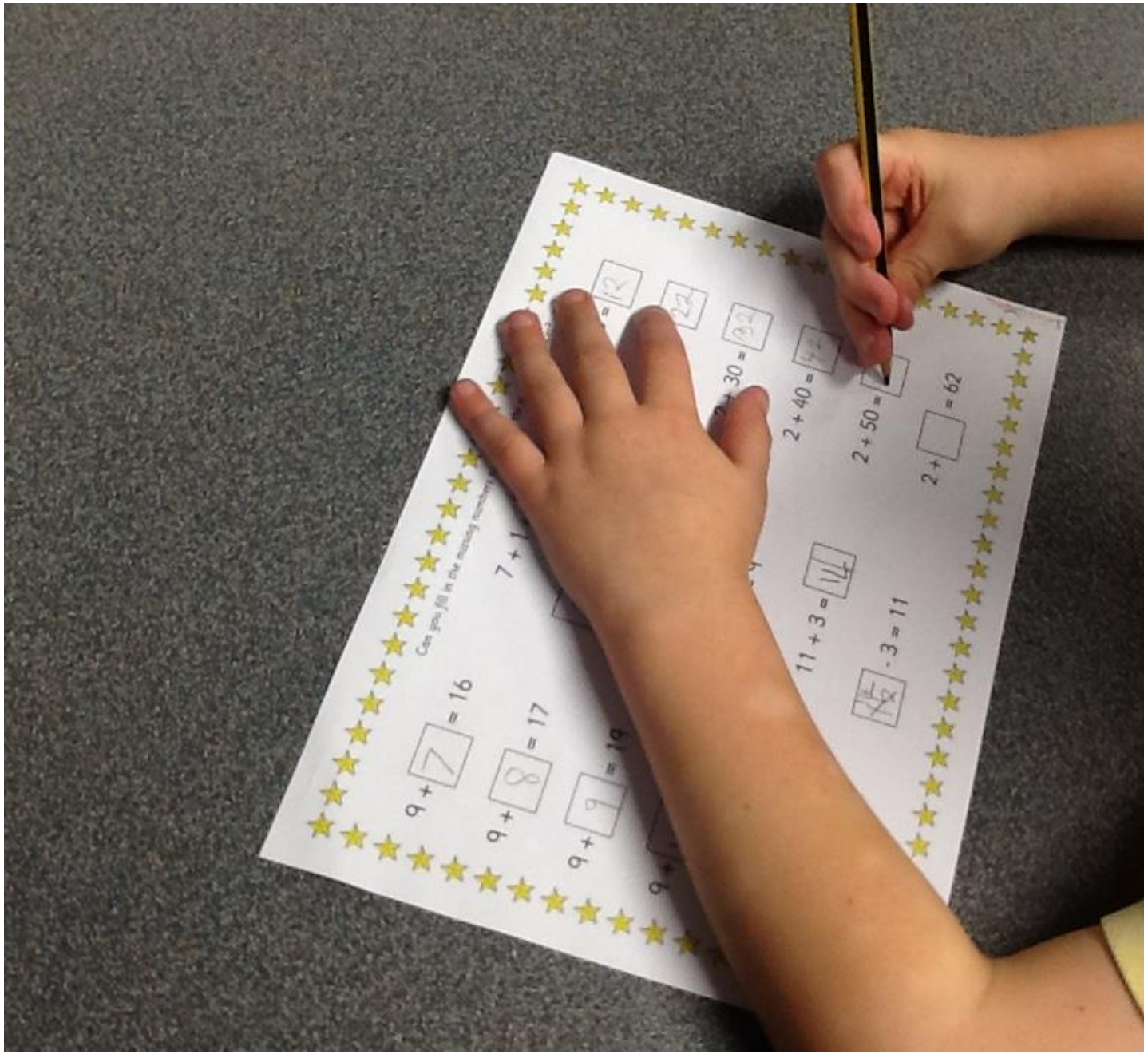

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Giles Brook Primary School
Claire Dinsey
Year 1

Year 1

$3 + \square = 5$

$\square + 5 = 5$

$\square + 1 = 5$

$5 = \square + 2$

$\square = 4 + 1$

$\square = 2 + 3$

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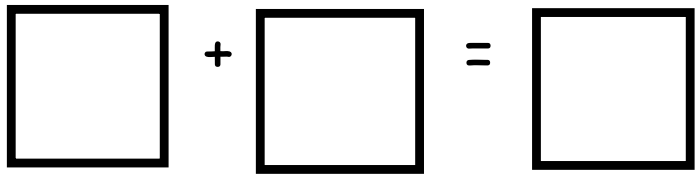
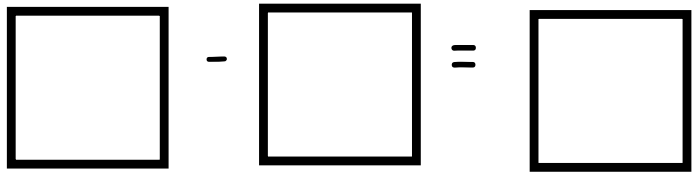
Year 1

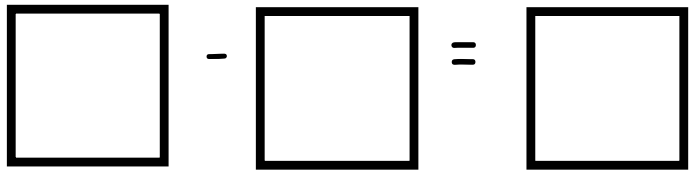
If I know .....

2 + 3 = 5

I also know:







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Year 1

$3 + \square = 6$

$\square + 5 = 6$

$\square + 0 = 6$

$6 = \square + 2$

$\square = 3 + 3$

$\square = 2 + 4$

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Priory Rise Primary School
Ross Bullen
Year 1

Key phrase: If I'm adding/subtracting 10 the units won't change

What do you notice?

0 + 10 = 10

10 + 10 = 20

20 + 10 = 30

30 + 10 = 40

40 + 10 = 50

50 + 10 = 60

60 + 10 = 70

70 + 10 = 80

80 + 10 = 90

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What do you notice?

$3 + 10 = 13$

$13 + 10 = 23$

$23 + 10 = 33$

$33 + 10 = 43$

$43 + 10 = 53$

$53 + 10 = 63$

$63 + 10 = 73$

$73 + 10 = 83$

$83 + 10 = 93$

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What do you notice?

90 - 10 = 80

80 - 10 = 70

70 - 10 = 60

60 - 10 = 50

50 - 10 = 40

40 - 10 = 30

30 - 10 = 20

20 - 10 = 10

10 - 10 = 0

What do you notice?

$97 - 10 = 87$

$87 - 10 = 77$

$77 - 10 = 67$

$67 - 10 = 57$

$57 - 10 = 47$

$47 - 10 = 37$

$37 - 10 = 27$

$27 - 10 = 17$

$17 - 10 = 7$

Adding 10

6 + 10 = ☐

16 + 10 = ☐

26 + 10 = ☐

36 + 10 = ☐

46 + 10 = ☐

56 + 10 = ☐

66 + 10 = ☐

76 + 10 = ☐

86 + 10 = ☐

Extend Page

Adding 10

6 + 10 = ☐

16 + 10 = ☐

26 + 10 = ☐

36 + 10 = ☐

46 + 10 = ☐

56 + 10 = ☐

66 + 10 = ☐

76 + 10 = ☐

86 + 10 = ☐

Adding & Subtracting 10

30 - 10 = ☐
20 + 10 = ☐

23 + 10 = ☐
33 - 10 = ☐

26 + 10 = ☐
36 - 10 = ☐

52 - 10 = ☐
42 + 10 = ☐

17 - 10 = ☐
7 + 10 = ☐

88 + 10 = ☐
98 - 10 = ☐

Adding & Subtracting 10

30 - 10 = ☐
20 + 10 = ☐

23 + 10 = ☐
33 - 10 = ☐

26 + 10 = ☐
36 - 10 = ☐

52 - 10 = ☐
42 + 10 = ☐

17 - 10 = ☐
7 + 10 = ☐

88 + 10 = ☐
98 - 10 = ☐

Extend Page

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Kents Hill School
Sharon Pace
Year 2

L9: To continue a pattern

3 + 1 = ☐

3 + 10 = ☐

4 + 1 = ☐

4 + 10 = ☐

5 + 1 = ☐

5 + 10 = ☐

What do you notice?

What is the same?

What is different?

What number sentence would come next? Continue the pattern.

☐ ☐ ☐

☐ ☐ ☐

☐ ☐ ☐

Explain why you have chosen these number sentences.

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LO: To continue a pattern

3 + 1 = ☐

3 + 10 = ☐

4 + 1 = ☐

4 + 10 = ☐

5 + 1 = ☐

5 + 10 = ☐

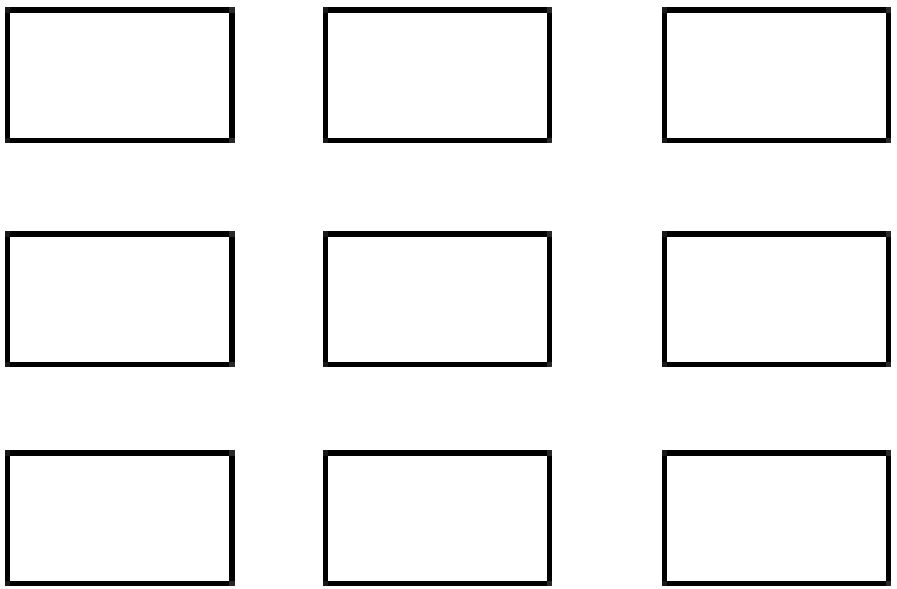
What do you notice?

What is the same?

What is different?

What number sentence would come next? Continue the pattern.

What number sentence would come next? Continue the pattern.



Explain why you have chosen these number sentences.

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Great Linford Primary School
Steph Scott
Year 2

3.12.15

OL: Can I add multiples of 10 to a number?

30 + 10 =

40 + 10 =

31 + 10 =

41 + 10 =

32 + 10 =

42 + 10 =

33 + 20 =

43 + 20 =

13.11.15

OL: Can I add multiples of 10 to a number?

30 + 20 =

40 + 20 =

31 + 20 =

41 + 20 =

32 + 20 =

42 + 20 =

33 + 20 =

43 + 20 =

13.11.15

OL: Can I add multiples of 10 to a number?

32 + 20 =	55 + 20 =
32 + 21 =	55 + 21 =
37 + 30 =	28 + 40 =
37 + 31 =	28 + 41 =

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Wavendon Gate Primary School
Becky Bailey
Year 4

Examples

What do you notice?

127 + 10 = 137

137 + 10 = 147

147 + 10 = 157

157 + 10 = 167

167 + 10 = 177

Can you explain what it happening? Why?

Can you continue the pattern?

What about?

1037 + 10 = _____

2346 + 10 = _____

10 321 + 10 = _____

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What do you notice?

15 - 6 = 9

25 - 6 = 19

35 - 6 = 29

35 - 16 = 19

105 - 76 =29

Why is that?

How could we use this to help us with other subtractions like 35 - 17 or 46 - 18?

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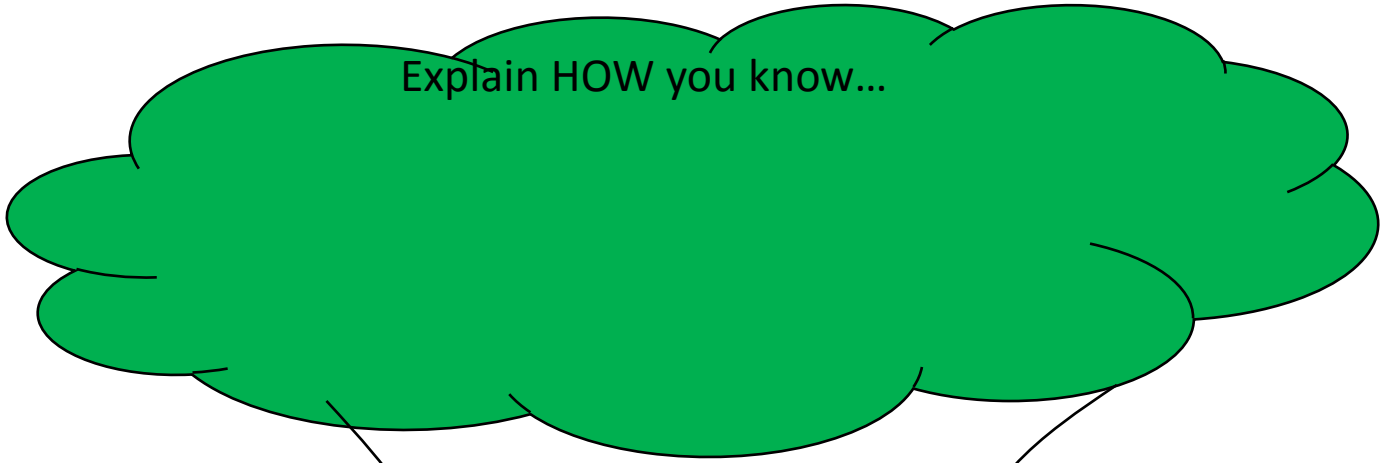
Spring Lane School
Laura Butler
Emilie Harbottle
Year 5

LO: To use knowledge of place value to solve addition calculations



0.04 + 0.005 =

0.4 + 0.5 =

4 + 5 =

40 + 50 =

400 + 500 =

4000 + 5000 =

40 000 + 50 000 =

4000 + ... = 90000

0.4 + ... = 90

0.04 + ... = 90

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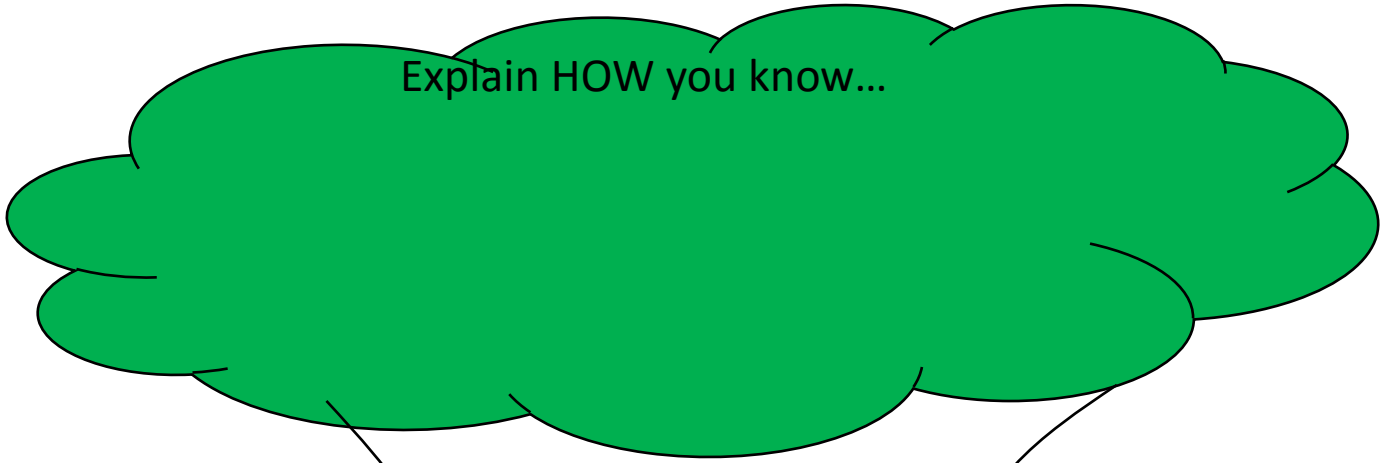
LO: To use knowledge of place value to solve addition calculations



0.04 + 0.005 =

0.4 + 0.5 =

4 + 5 =

40 + 50 =

400 + 500 =

4000 + 5000 =

40 000 + 50 000 =

4000 + ... = 90000

0.4 + ... = 90

0.04 + ... = 90

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LO: To use knowledge of place value to solve addition calculations

Explain HOW you know…

0.04 + 0.005 =

0.4 + 0.5 =

4 + 5 =

40 + 50 =

400 + 500 =

4000 + 5000 =

40 000 + 50 000 =

4000 + ... = 90000

0.4 + ... = 90

0.04 + ... = 90

LO: To use knowledge of place value to solve addition calculations

Explain HOW you know…

0.04 + 0.005 =

0.4 + 0.5 =

4 + 5 =

40 + 50 =

400 + 500 =

4000 + 5000 =

40 000 + 50 000 =

4000 + ... = 90000

0.4 + ... = 90

0.04 + ... = 90

Variation examples
Fluency project
Enigma Maths Hub
Loughton School
Cathy Woodward
Year 6

Year 6 Variation questions

7.38 + 2.54 =

17.38 + 2.54 =

7.38 + 12.54 =

17.38 + 12.54 =

9.62 + 6.14 =

10.62 + 6.14 =

11.62 + 6.14 =

13.62 + 6.14 =

8.73 - 5.27 =

7.73 - 5.27 =

6.73 - 5.27 =

5.73 - 5.27 =

9.31 - 7.28 =

11.31 - 7.28 =

13.31 - 7.28 =

15.31 - 7.28 =

Year 6 Variation questions

7.38 + 2.54 =
17.38 + 2.54 =
7.38 + 12.54 =
17.38 + 12.54 =

9.62 + 6.14 =
10.62 + 6.14 =
11.62 + 6.14 =
13.62 + 6.14 =

8.73 - 5.27 =
7.73 - 5.27 =
6.73 - 5.27 =
5.73 - 5.27 =

9.31 - 7.28 =
11.31 - 7.28 =
13.31 - 7.28 =
15.31 - 7.28 =

Multiplication and division variation examples

Variation examples
Fluency project
Enigma Maths Hub
Falconhurst Primary School
Laura Crawley
Year 1

Multiplication Variation
Repeated Addition
Year 1

2 lots of 1 = 1 + 1 = 2 lots of 10 = 10 + 10 =	3 lots of 1 = 1 + 1 + 1 = 3 lots of 10 = 10 + 10 + 10 =
4 lots of 1 = 1 + 1 + 1 + 1 = 4 lots of 10 = 10 + 10 + 10 + 10 =	5 lots of 1 = 1 + 1 + 1 + 1 + 1 = 5 lots of 10 = 10 + 10 + 10 + 10 + 10 =

2 = 2
2 + 2 =
2 + 2 + 2 =
2 + 2 + 2 + 2 =
2 + 2 + 2 + 2 + 2 =
2 + 2 + 2 + 2 + 2 + 2 =

What do you notice about these numbers?

Can you write the same pattern for adding 5s?

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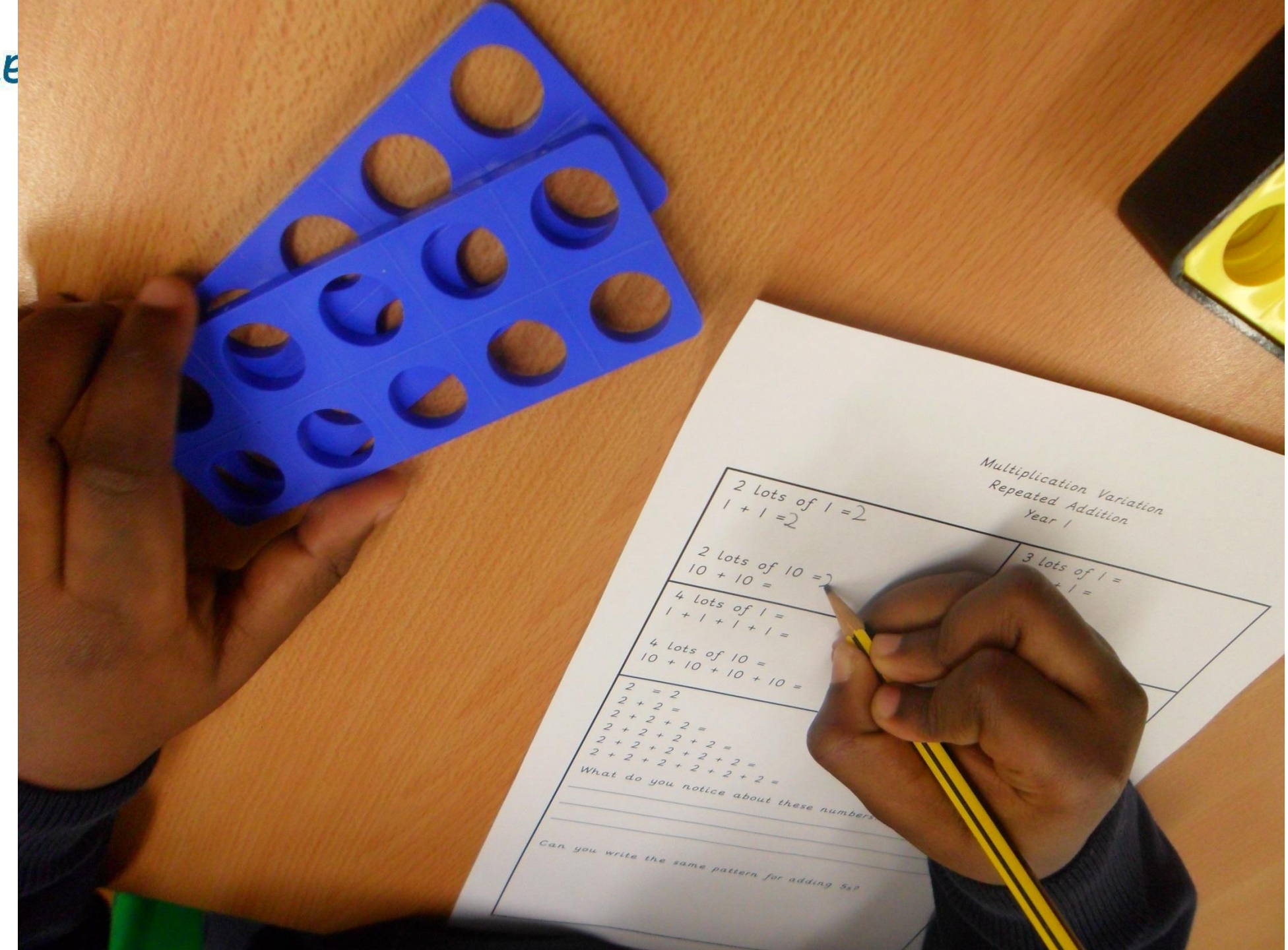
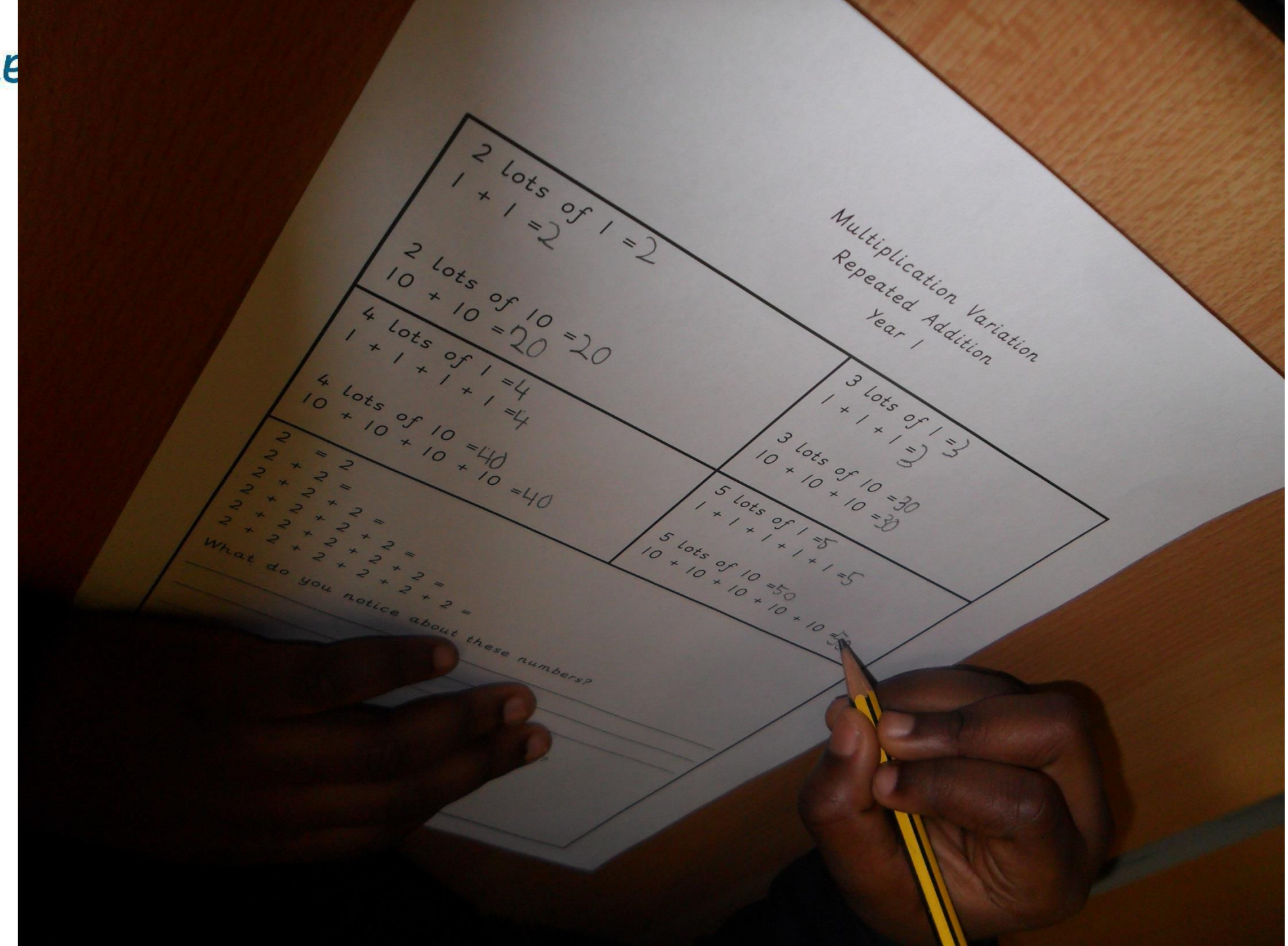

Multiplication Variation
Repeated Addition
Year 1
2 lots of 1 =2
1 + 1 =2
2 lots of 10 =2
10 + 10 =
4 lots of 1 =
1 + 1 + 1 + 1 =
4 lots of 10 =
10 + 10 + 10 + 10 =
2 = 2
2 + 2 =
2 + 2 + 2 =
2 + 2 + 2 + 2 =
2 + 2 + 2 + 2 + 2 =
2 + 2 + 2 + 2 + 2 + 2 =
What do you notice about these numbers?
Can you write the same pattern for adding 5s?


Multiplication Variation
Repeated Addition
Year 1
2 lots of 1 =2
1 + 1 =2
2 lots of 10 =20
10 + 10 =20
4 lots of 1 =4
1 + 1 + 1 + 1 =4
4 lots of 10 =40
10 + 10 + 10 + 10 =40
3 lots of 1 =3
1 + 1 + 1 =3
3 lots of 10 =30
10 + 10 + 10 =30
5 lots of 1 =5
1 + 1 + 1 + 1 + 1 =5
5 lots of 10 =50
10 + 10 + 10 + 10 + 10 =50
2 = 2
2 + 2 =
2 + 2 + 2 =
2 + 2 + 2 + 2 =
2 + 2 + 2 + 2 + 2 =
2 + 2 + 2 + 2 + 2 + 2 =
What do you notice about these numbers?

Multiplication Variation
Repeated Addition
Year 1

2 lots of 1 = 2
1 + 1 = 2

2 lots of 10 = 20
10 + 10 = 20

3 lots of 1 = 3
1 + 1 + 1 = 3

3 lots of 10 = 30
10 + 10 + 10 = 30

4 lots of 1 = 4
1 + 1 + 1 + 1 = 4

4 lots of 10 = 40
10 + 10 + 10 + 10 = 40

5 lots of 1 = 5
1 + 1 + 1 + 1 + 1 = 5

5 lots of 10 = 50
10 + 10 + 10 + 10 + 10 = 50

2 = 2
2 + 2 = 4
2 + 2 + 2 = 6
2 + 2 + 2 + 2 = 8
2 + 2 + 2 + 2 + 2 = 10
2 + 2 + 2 + 2 + 2 + 2 = 12

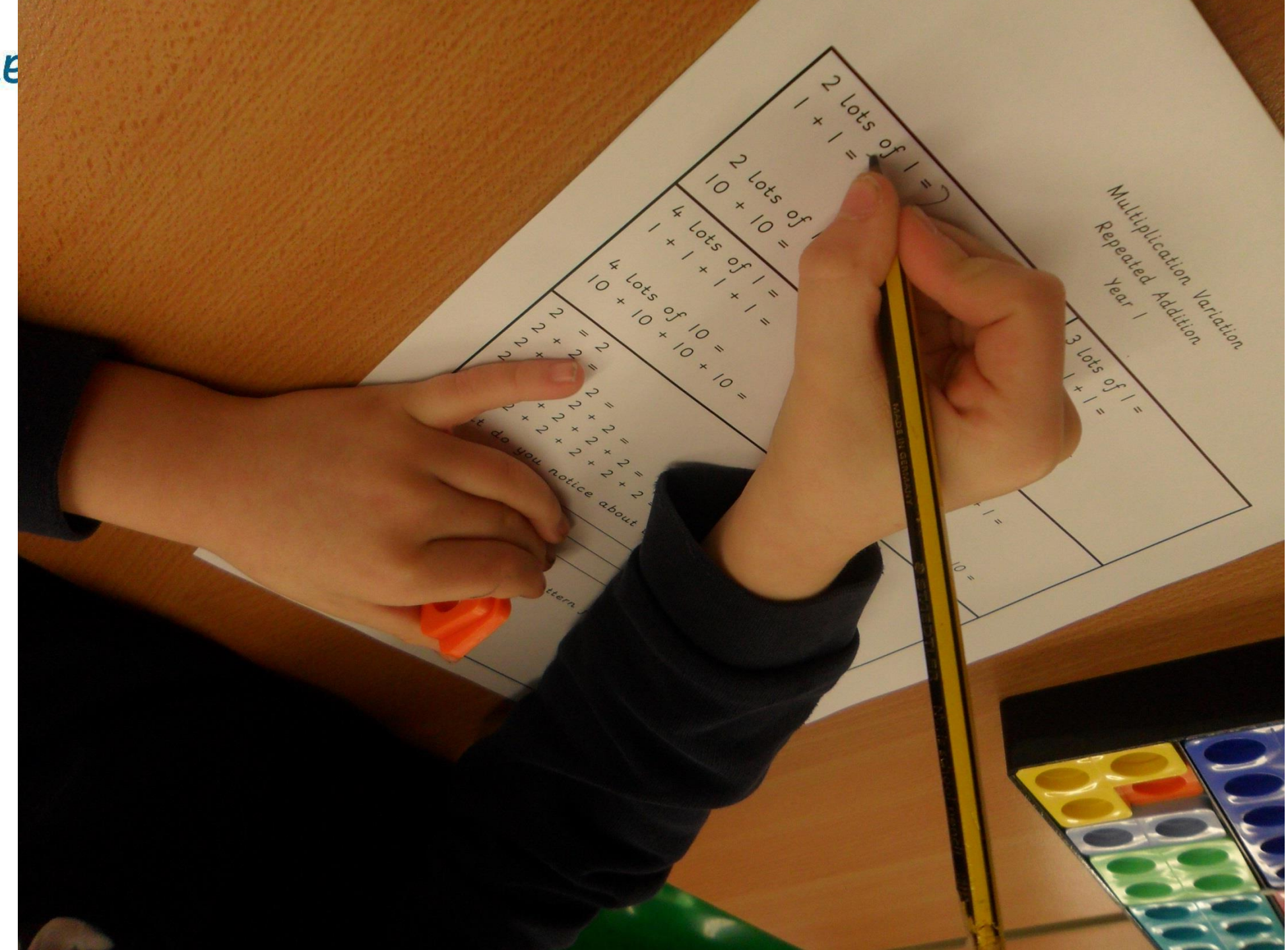
What do you notice about these numbers?

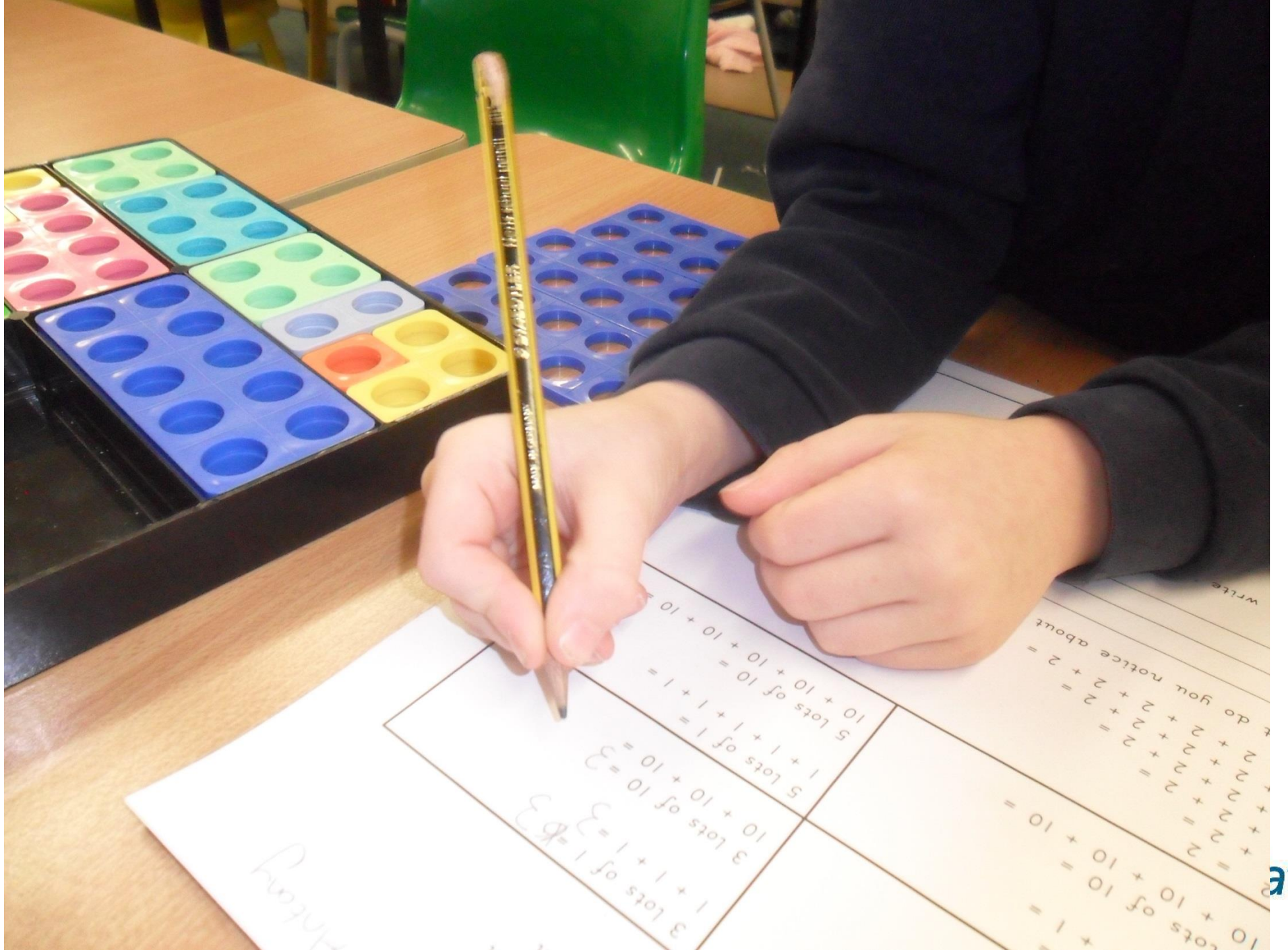
They go up in twos

Can you write the same pattern for adding 5s?

~~2+2~~ 5+5+5+5+5=25

5=5
5+5=10
5+5+5=15


Multiplication Variation
Repeated Addition
Year 1
2 lots of 1 =
1 + 1 =
2 lots of
10 + 10 =
4 lots of 1 =
1 + 1 + 1 + 1 =
4 lots of 10 =
10 + 10 + 10 + 10 =
3 lots of 1 =
1 + 1 =
2 + 2 =
2 + 2 + 2 =
2 + 2 + 2 + 2 =
2 + 2 + 2 + 2 + 2 =
do you notice about



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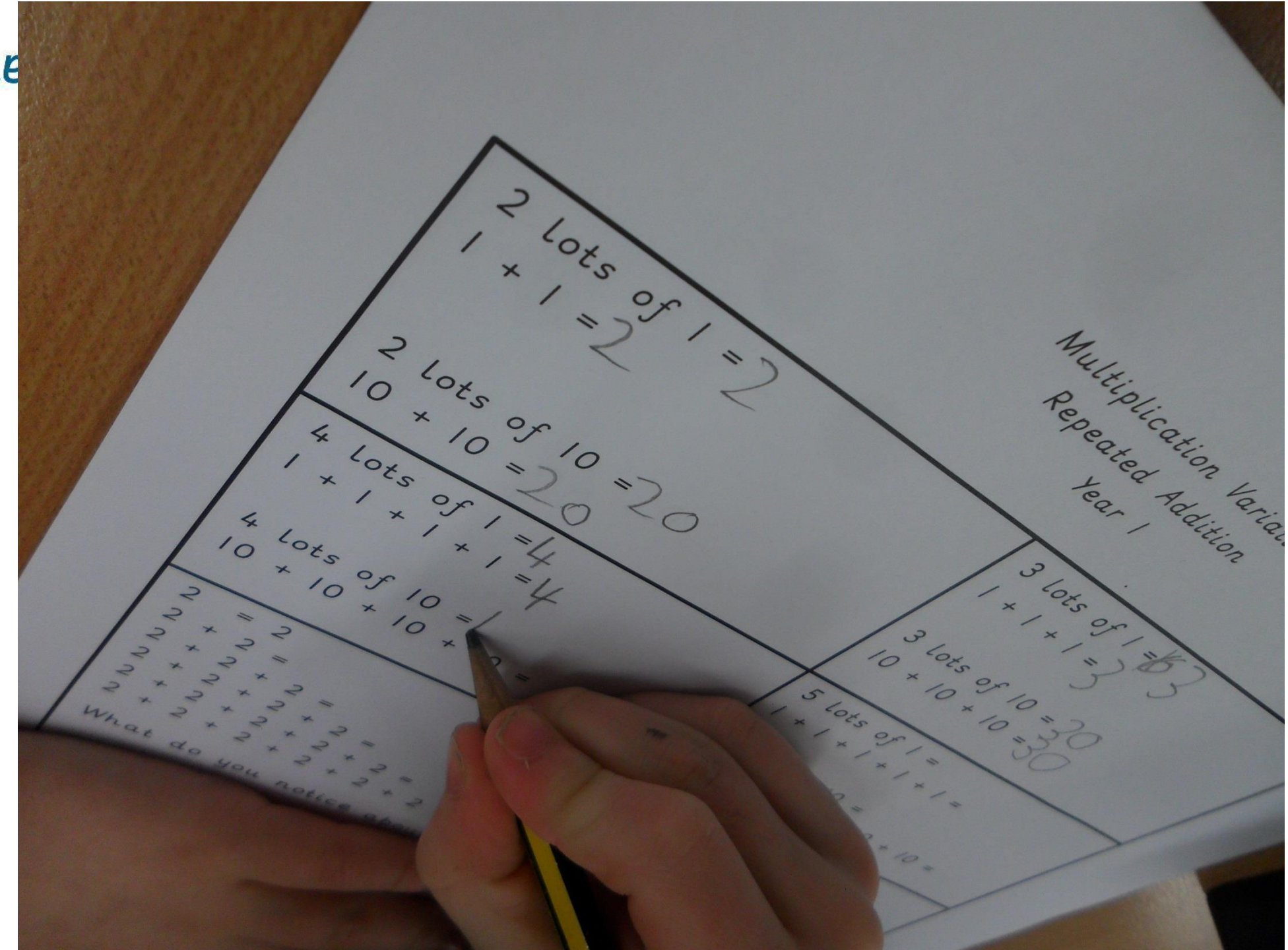
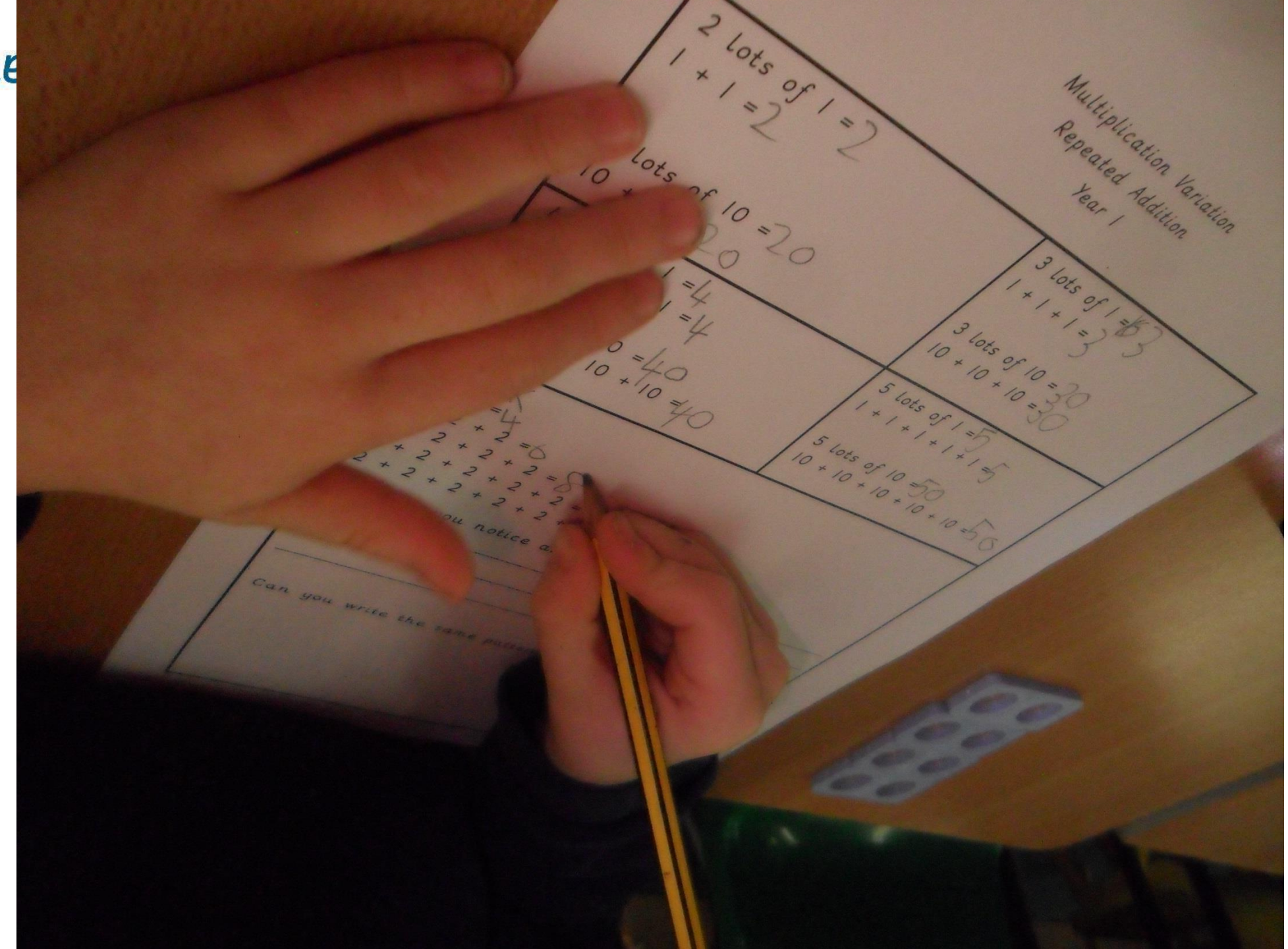

Multiplication Variat
Repeated Addition
Year 1
2 lots of 1 = 2
1 + 1 = 2
2 lots of 10 = 20
10 + 10 = 20
4 lots of 1 = 4
1 + 1 + 1 + 1 = 4
3 lots of 1 = 3
1 + 1 + 1 = 3
3 lots of 10 = 30
10 + 10 + 10 = 30
What do you notice



Multiplication Variation
Repeated Addition
Year 1

2 lots of 1 = 2 1 + 1 = 2 2 lots of 10 = 20 10 + 10 = 20	3 lots of 1 = 3 1 + 1 + 1 = 3 3 lots of 10 = 30 10 + 10 + 10 = 30
4 lots of 1 = 4 1 + 1 + 1 + 1 = 4 4 lots of 10 = 40 10 + 10 + 10 + 10 = 40	5 lots of 1 = 5 1 + 1 + 1 + 1 + 1 = 5 5 lots of 10 = 50 10 + 10 + 10 + 10 + 10 = 50

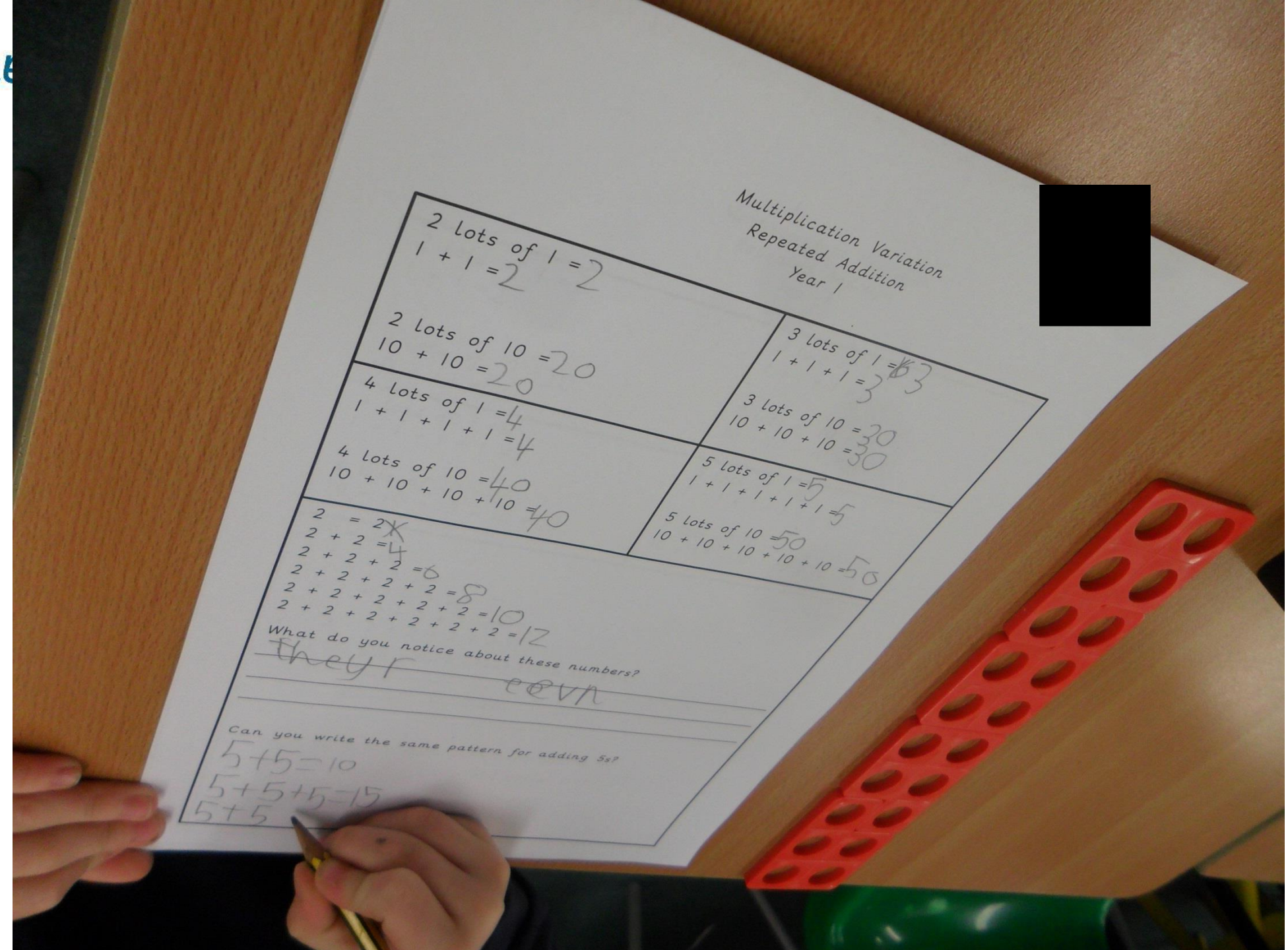
2 = 2
2 + 2 = 4
2 + 2 + 2 = 6
2 + 2 + 2 + 2 = 8
2 + 2 + 2 + 2 + 2 = 10
2 + 2 + 2 + 2 + 2 + 2 = 12

What do you notice about these numbers?

they r eevn

Can you write the same pattern for adding 5s?

5+5=10
5+5+5=15
5+5+5+5=20


Multiplication Variation
Repeated Addition
Year 1
2 lots of 1 = 2
1 + 1 = 2
2 lots of 10 = 20
10 + 10 = 20
4 lots of 1 = 4
1 + 1 + 1 + 1 = 4
4 lots of 10 = 40
10 + 10 + 10 + 10 = 40
3 lots of 1 = 3
1 + 1 + 1 = 3
3 lots of 10 = 30
10 + 10 + 10 = 30
5 lots of 1 = 5
1 + 1 + 1 + 1 + 1 = 5
5 lots of 10 = 50
10 + 10 + 10 + 10 + 10 = 50
2 = 2
2 + 2 = 4
2 + 2 + 2 = 6
2 + 2 + 2 + 2 = 8
2 + 2 + 2 + 2 + 2 = 10
2 + 2 + 2 + 2 + 2 + 2 = 12
What do you notice about these numbers?
they r even
Can you write the same pattern for adding 5s?
5+5=10
5+5+5=15
5+5

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Multiplication Variation
Repeated Addition
Year 1

2 lots of 1 = 2 1 + 1 = 2 2 lots of 10 = 50 10 + 10 = 50	3 lots of 1 = 3 1 + 1 + 1 = 3 3 lots of 10 = 60 10 + 10 + 10 = 60
4 lots of 1 = 4 1 + 1 + 1 + 1 = 4 4 lots of 10 = 40 10 + 10 + 10 + 10 = 40	5 lots of 1 = 5 1 + 1 + 1 + 1 + 1 = 51 5 lots of 10 = 50 10 + 10 + 10 + 10 + 10 = 50

2 = 2
2 + 2 = 50
2 + 2 + 2 =
2 + 2 + 2 + 2 = 8
2 + 2 + 2 + 2 + 2 = 10
2 + 2 + 2 + 2 + 2 + 2 = 51

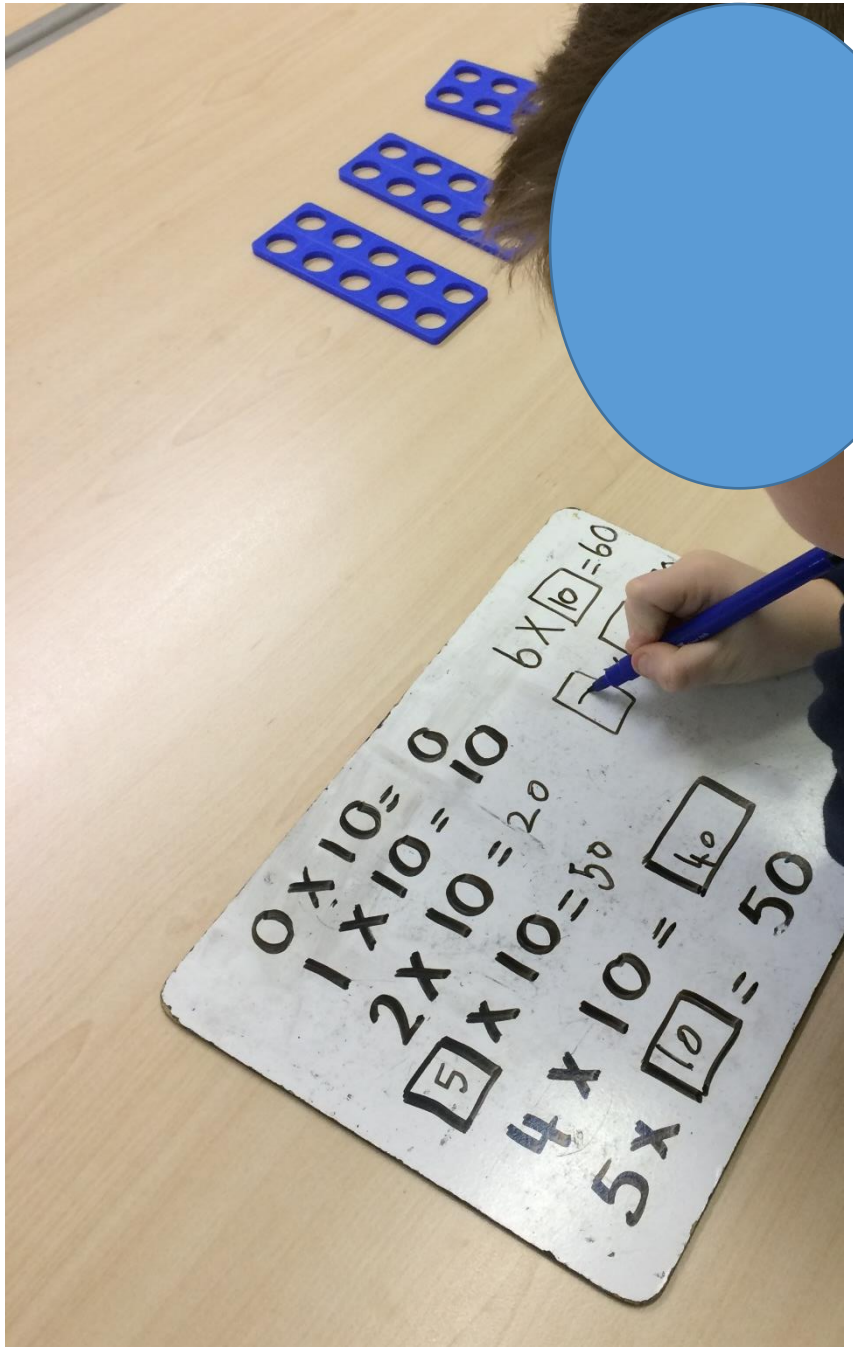
What do you notice about these numbers?

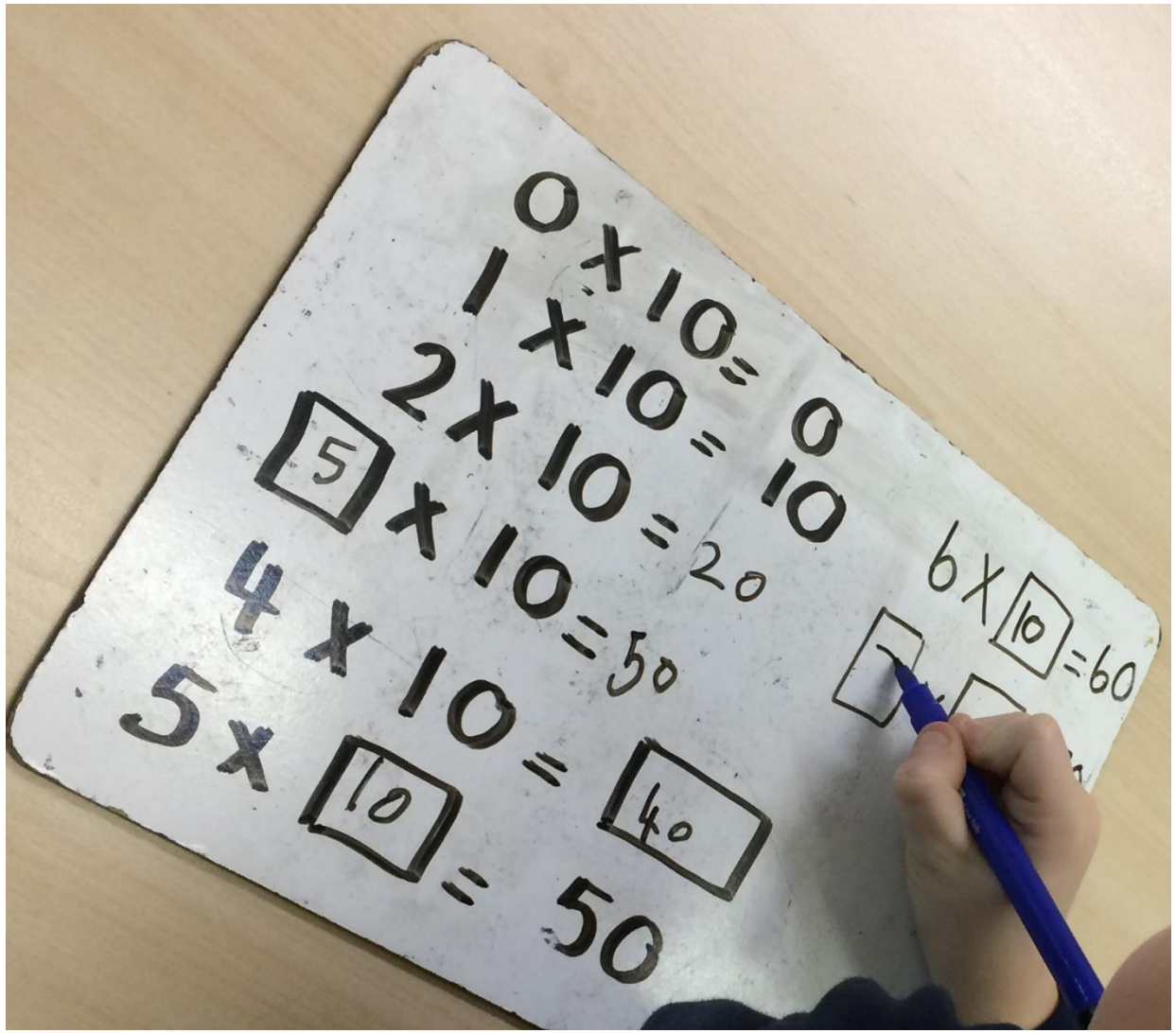
The 0 go in 0bv

Can you write the same pattern for adding 5s?

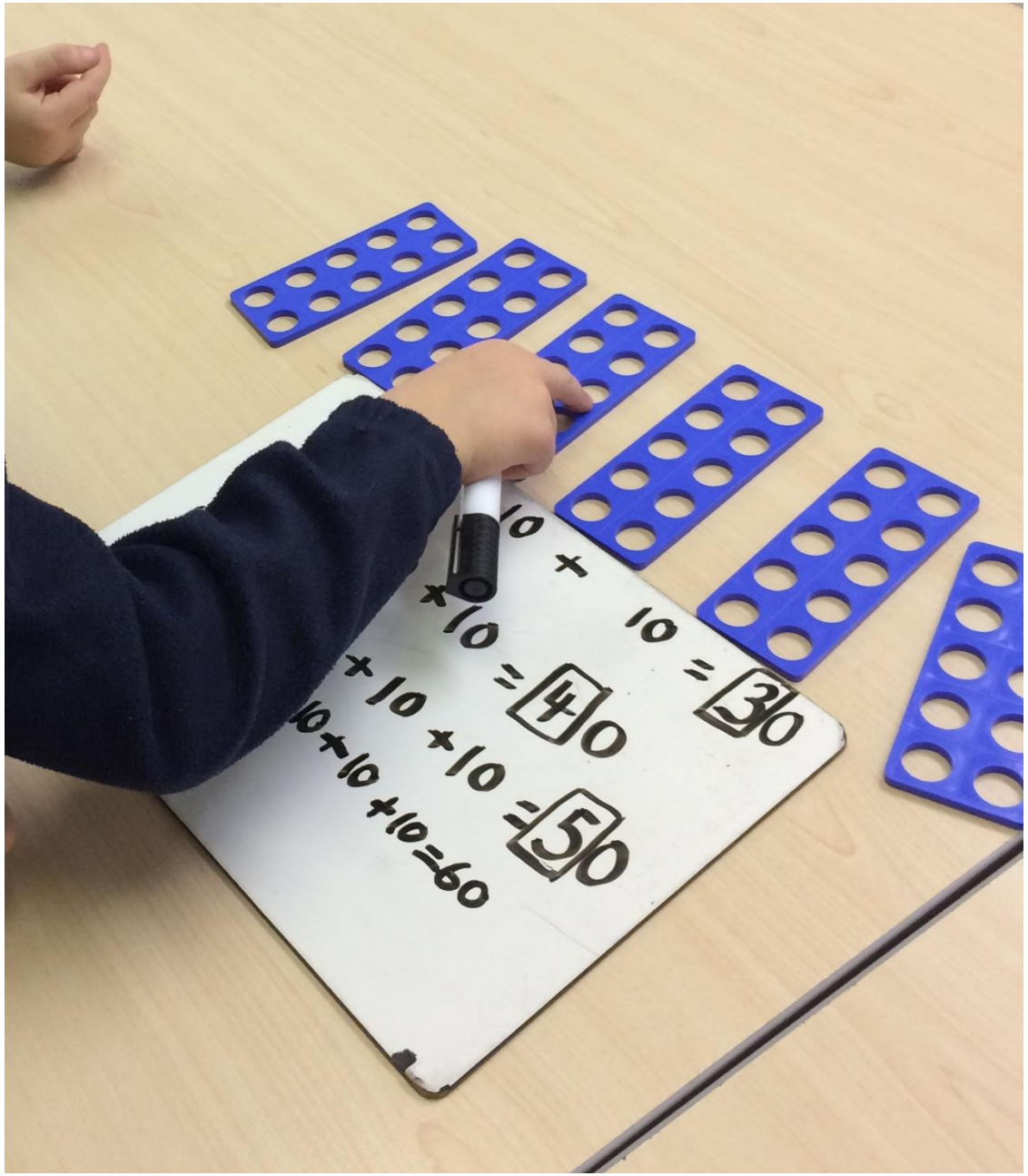
5+5 = 10
5+5+5 = 15
5+5+5 = 850
5+5+5+5+5 = 55

Variation examples
Fluency project
Enigma Maths Hub
Giles Brook Primary School
Claire Dinsey
Year 1

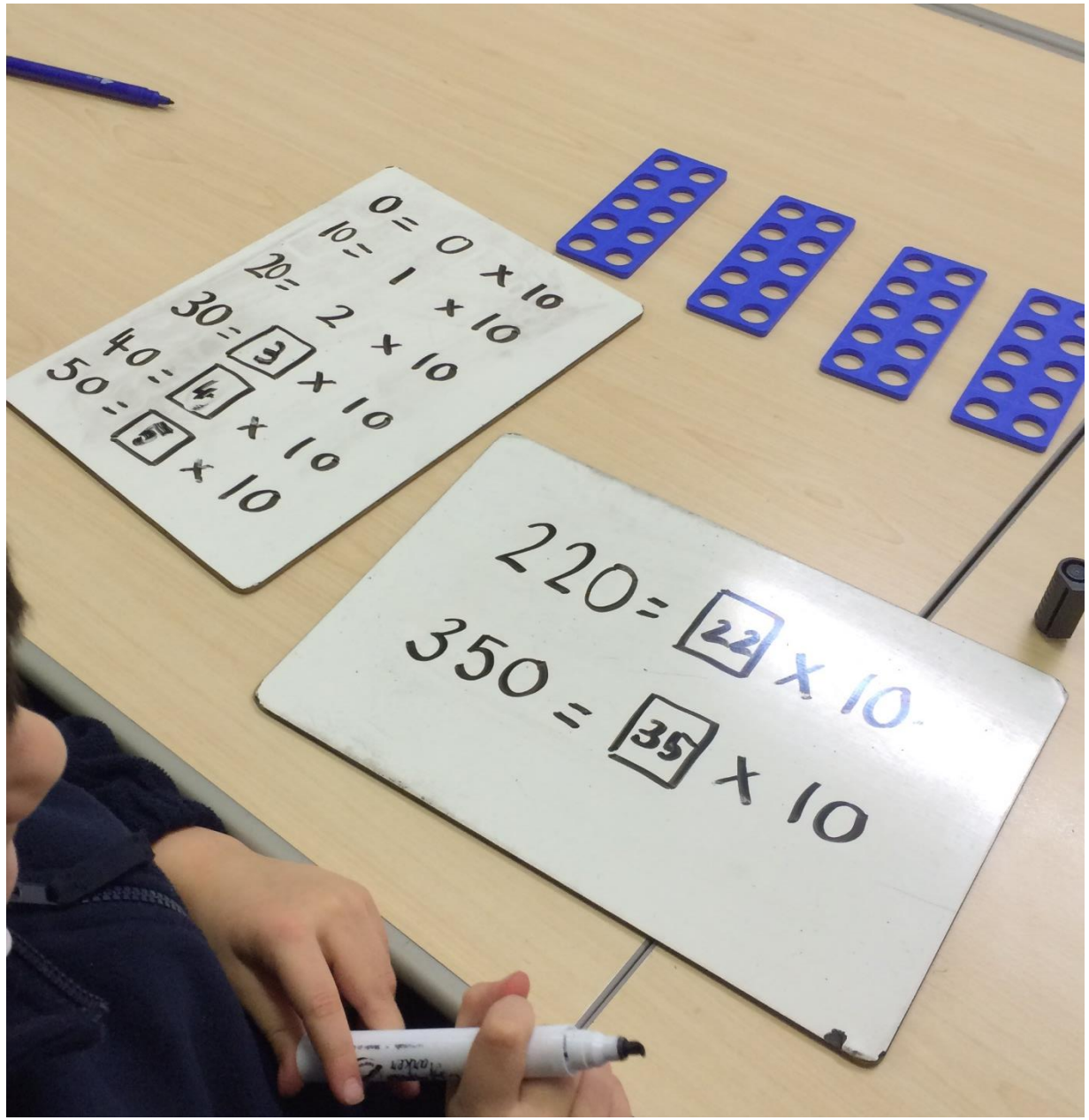




MathsHUBS
Enigma



MathsHUBS
Enigma



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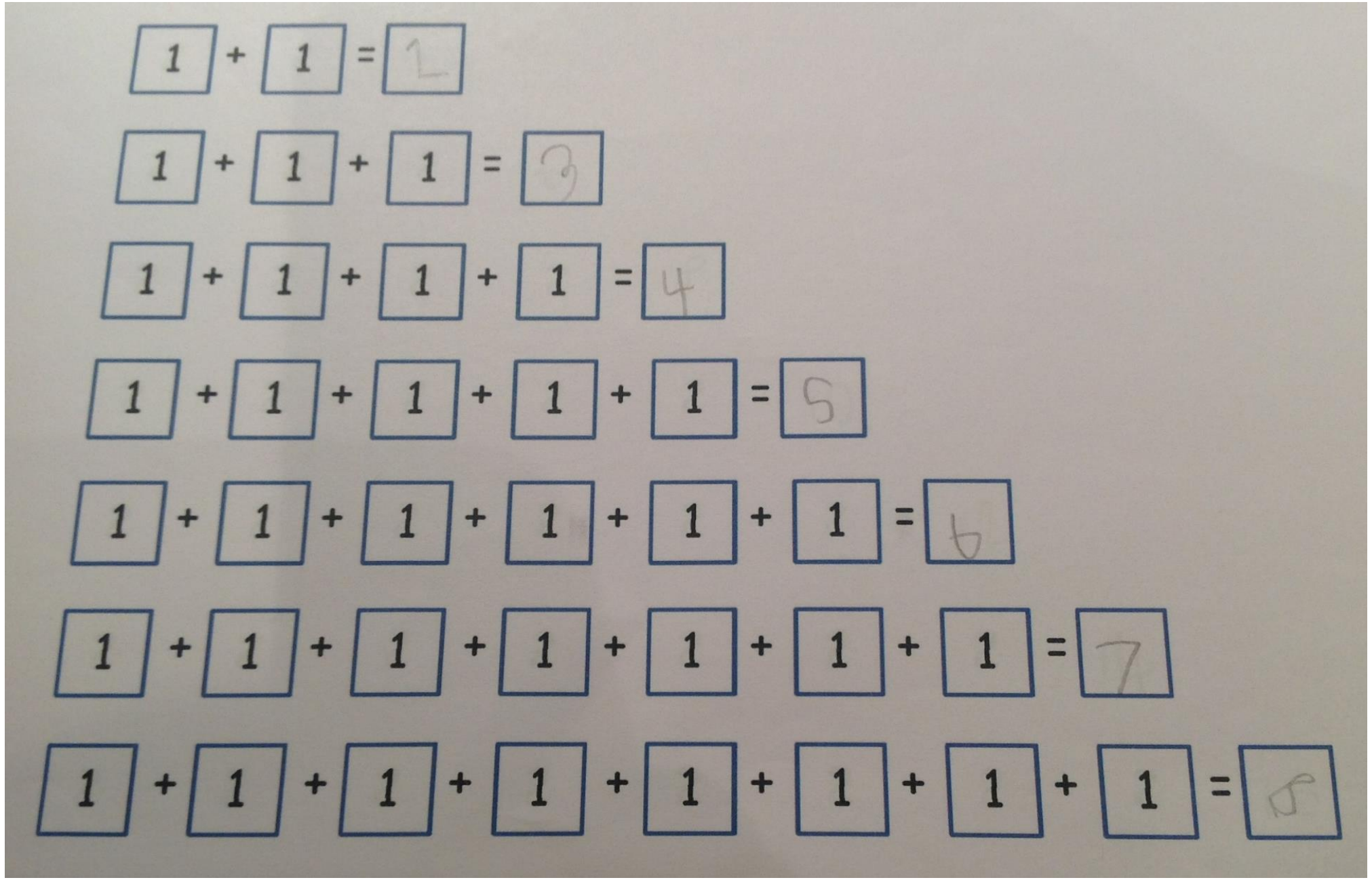
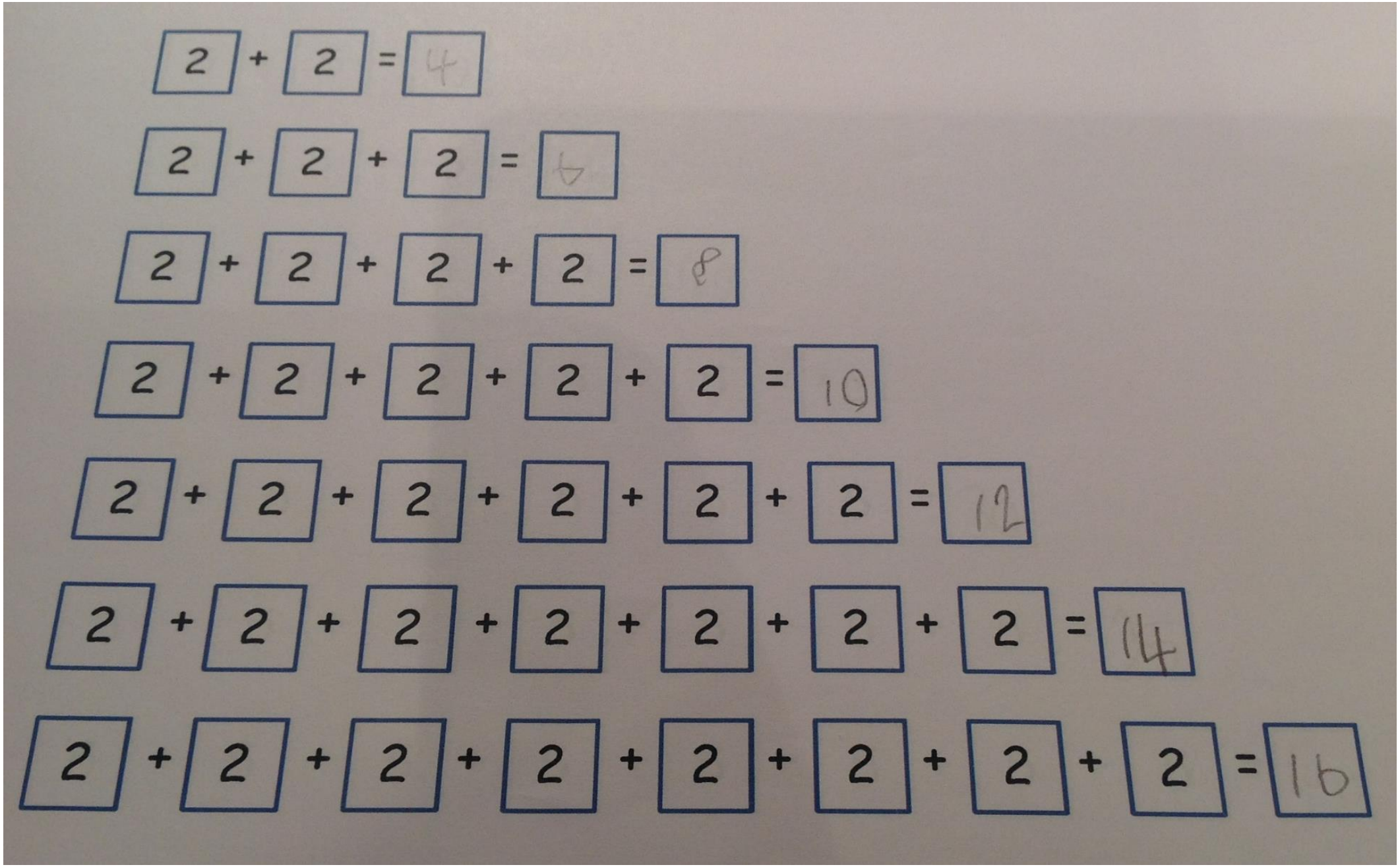
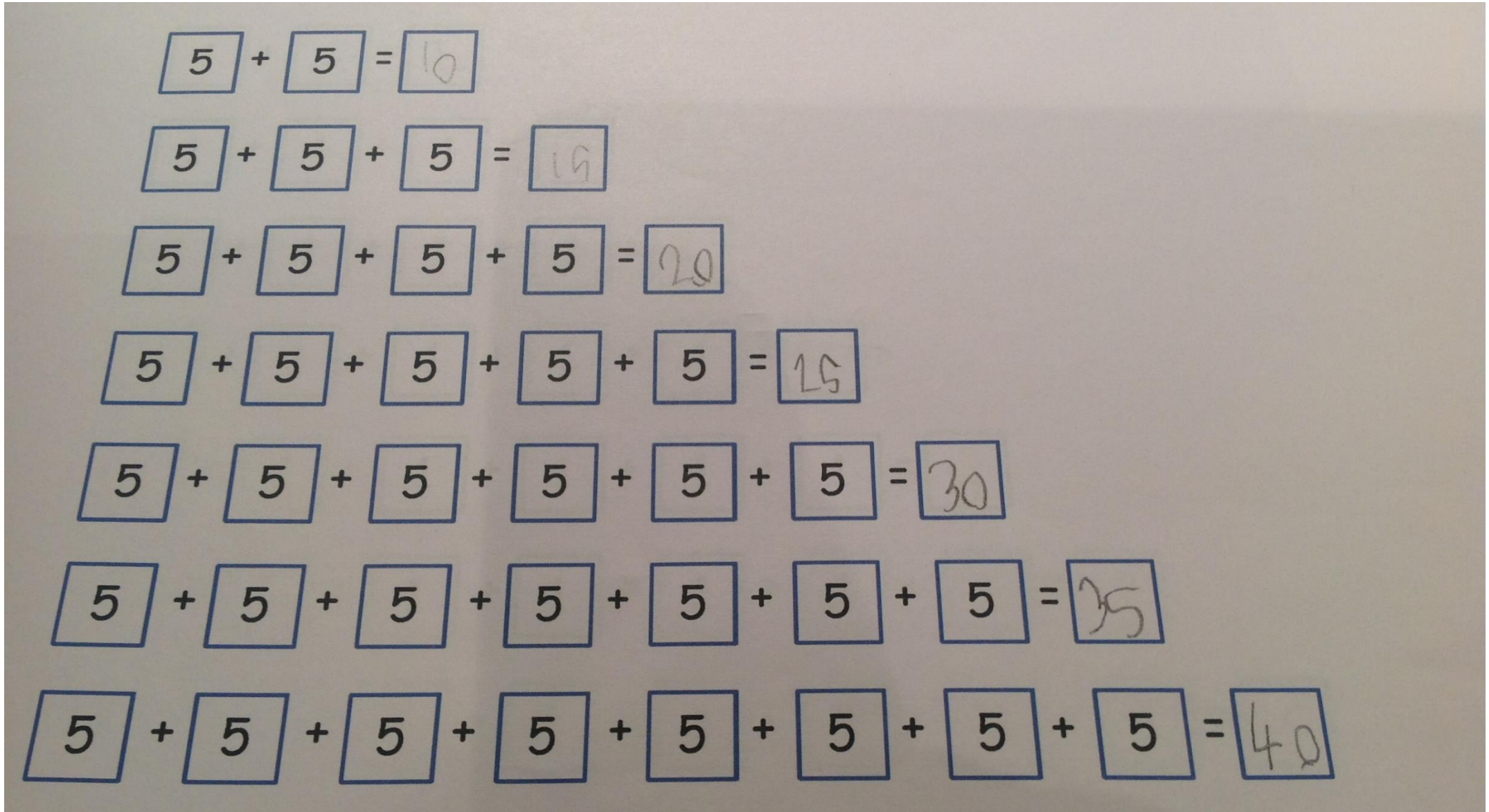
Enigma

Variation examples
Fluency project
Enigma Maths Hub
Priory Rise Primary School
Ross Bullen
Year 1


1 + 1 = 2
1 + 1 + 1 = 3
1 + 1 + 1 + 1 = 4
1 + 1 + 1 + 1 + 1 = 5
1 + 1 + 1 + 1 + 1 + 1 = 6
1 + 1 + 1 + 1 + 1 + 1 + 1 = 7
1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 8


2 + 2 = 4
2 + 2 + 2 = 6
2 + 2 + 2 + 2 = 8
2 + 2 + 2 + 2 + 2 = 10
2 + 2 + 2 + 2 + 2 + 2 = 12
2 + 2 + 2 + 2 + 2 + 2 + 2 = 14
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 16



Variation examples
Fluency project
Enigma Maths Hub
Kents Hill School
Sharon Pace
Year 2

LI: To use repeated addition

1 + 1 = ☐	2 + 2 = ☐
1 + 1 + 1 = ☐	2 + 2 + 2 = ☐
1 + 1 + 1 + 1 = ☐	2 + 2 + 2 + 2 = ☐
1 + 1 + 1 + 1 + 1 = ☐	2 + 2 + 2 + 2 + 2 = ☐

What do you notice?

What is the same?

What is different?

LI: To continue a pattern

2 + 2 = ☐

3 + 3 + 3 = ☐

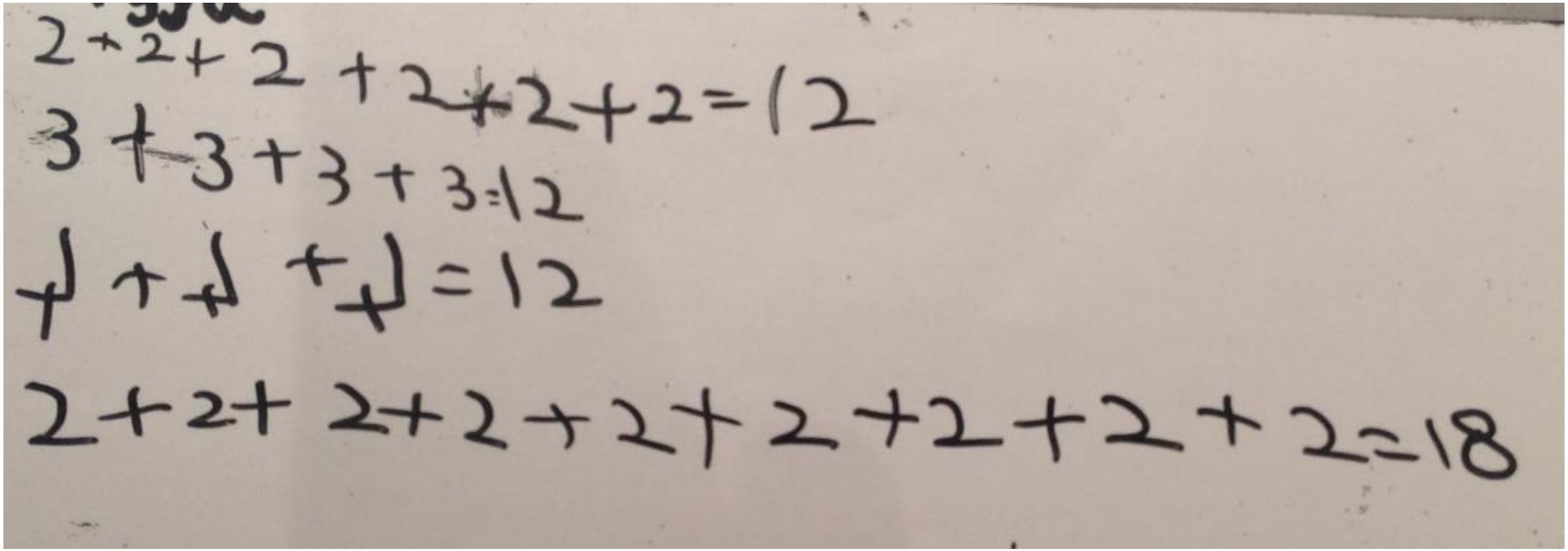
4 + 4 + 4 + 4 = ☐

___ + ___ + ___ + ___ + ___ = ☐

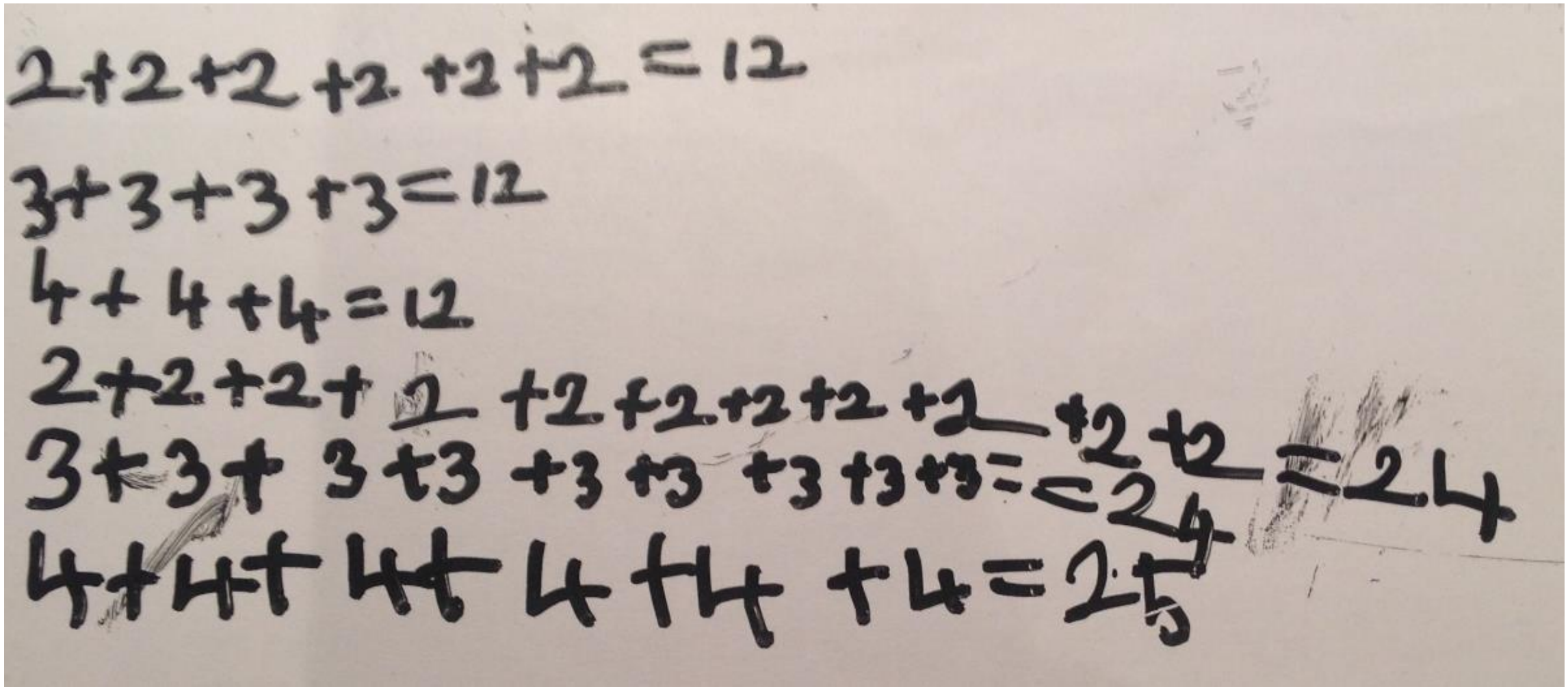
What jottings could you make?

Can you finish the last number sentence by following the pattern?

Variation examples
Fluency project
Enigma Maths Hub
Great Linford Primary School
Steph Scott
Year 2



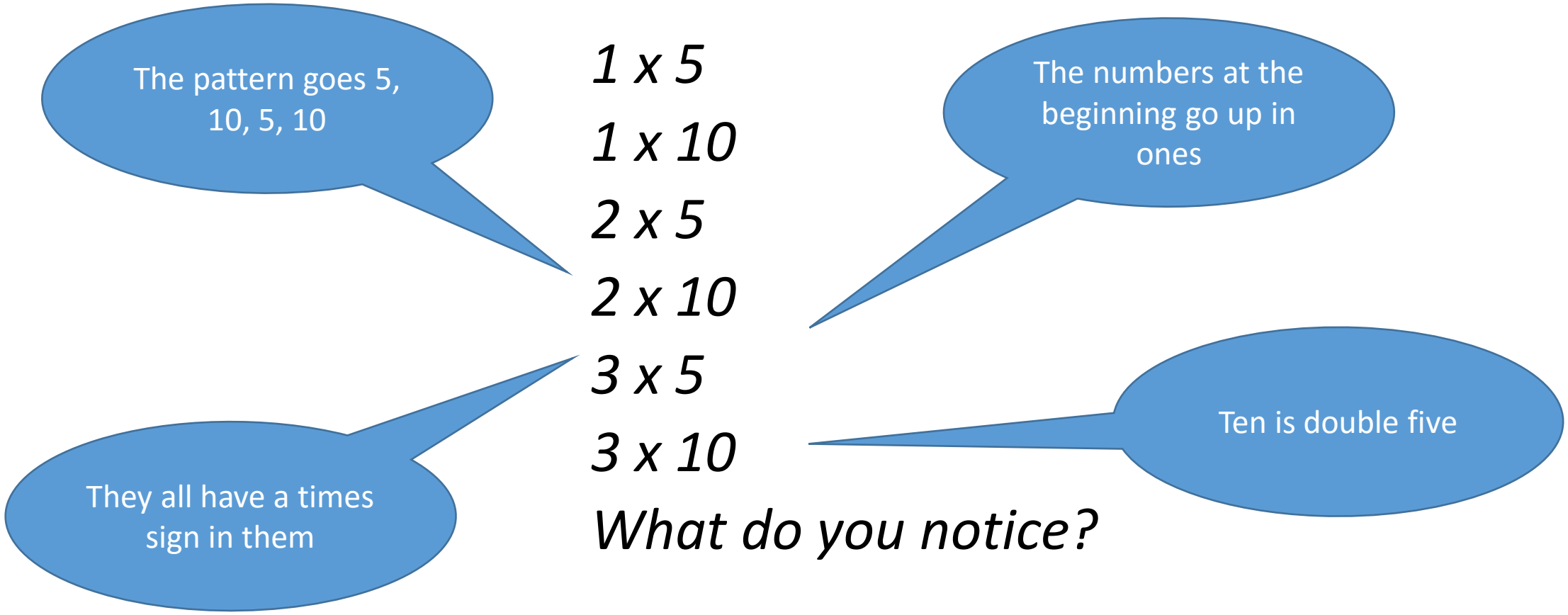
MathsHUBS
Enigma



MathsHUBS Enigma

Variation examples
Fluency project
Enigma Maths Hub
Clare Pickering
Year 2
Trinity C of E Primary School
Aldwincle, Northants

I began by displaying the following for oral discussion:



We then focused on finding the products for each calculation and discussed further how the products of the 10x table were double the 5x table.

1 x 5 = 5

1 x 10 = 10

2 x 5 = 10

2 x 10 = 20

3 x 5 = 15

3 x 10 = 30

I then posed the question: *What if I wrote:*

$\square \div 5 = 2$

Children were given the following in their books to find different possible solutions:

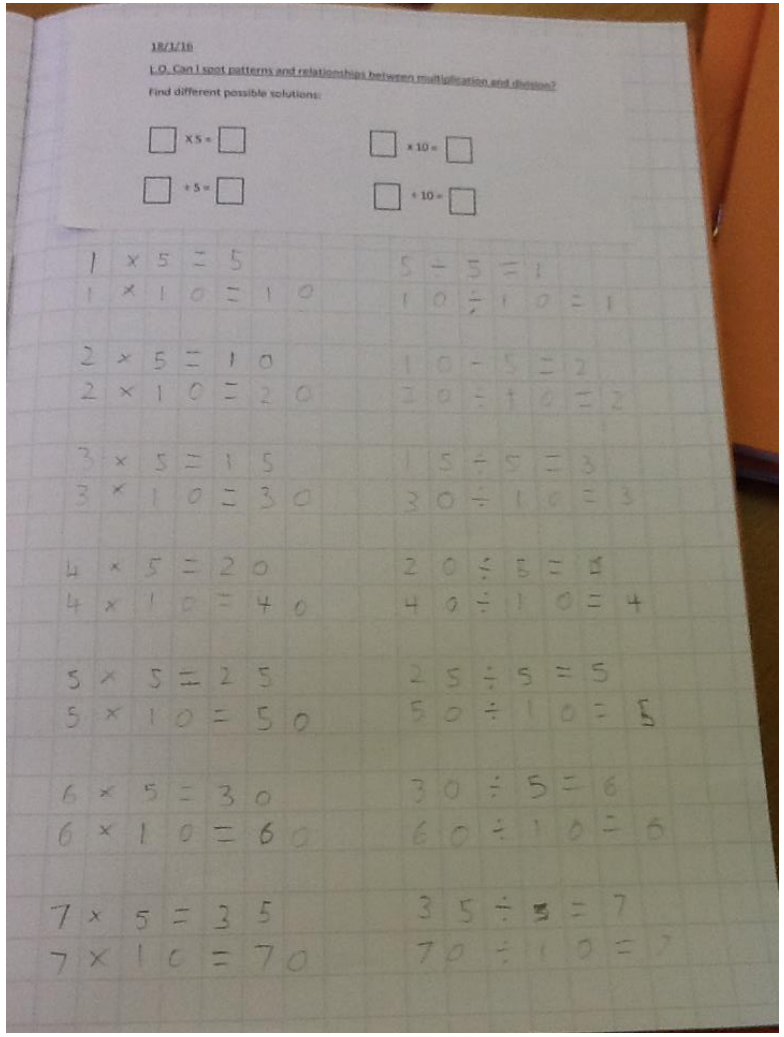
□ x 5 = □

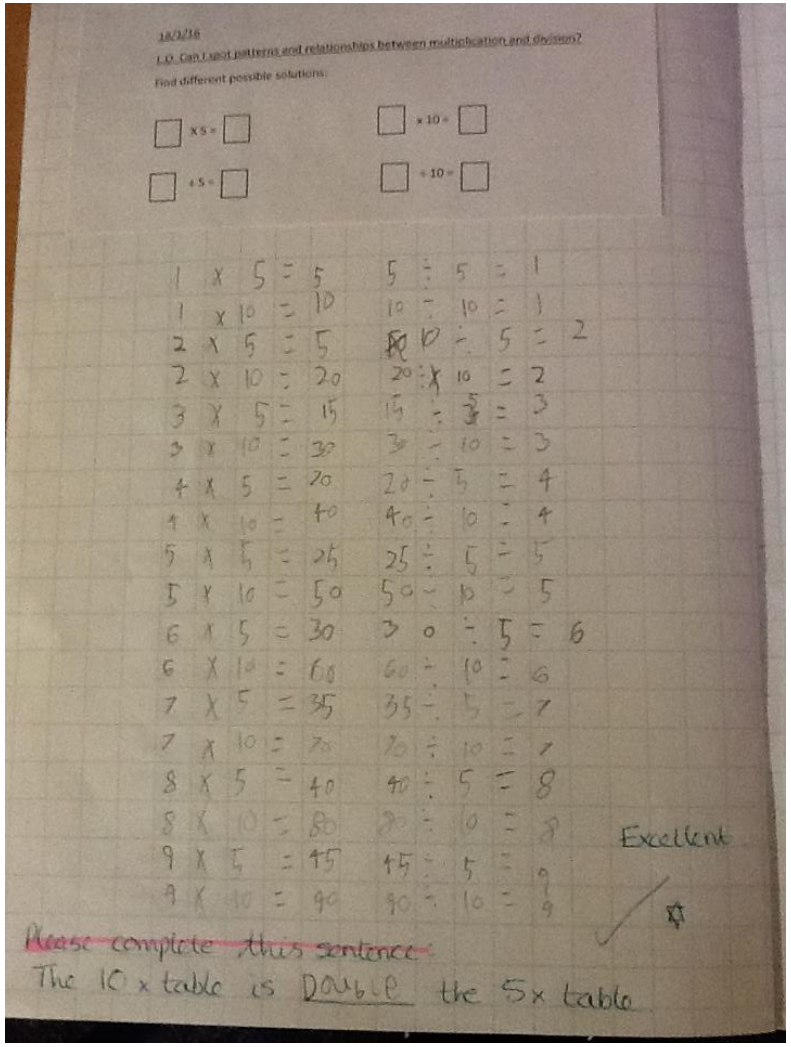
□ ÷ 5 = □

□ x 10 = □

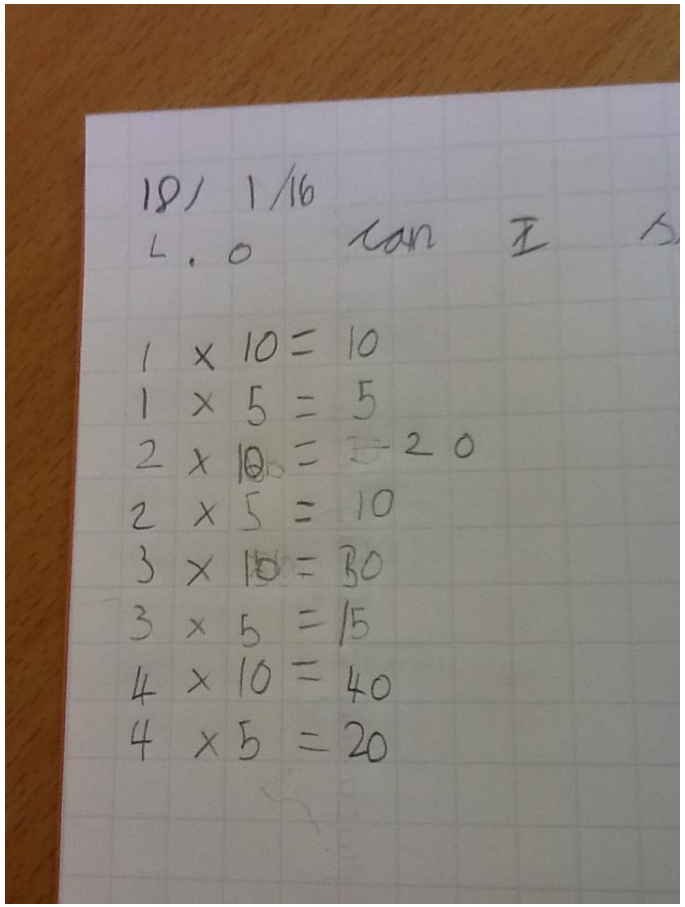
□ ÷ 10 = □

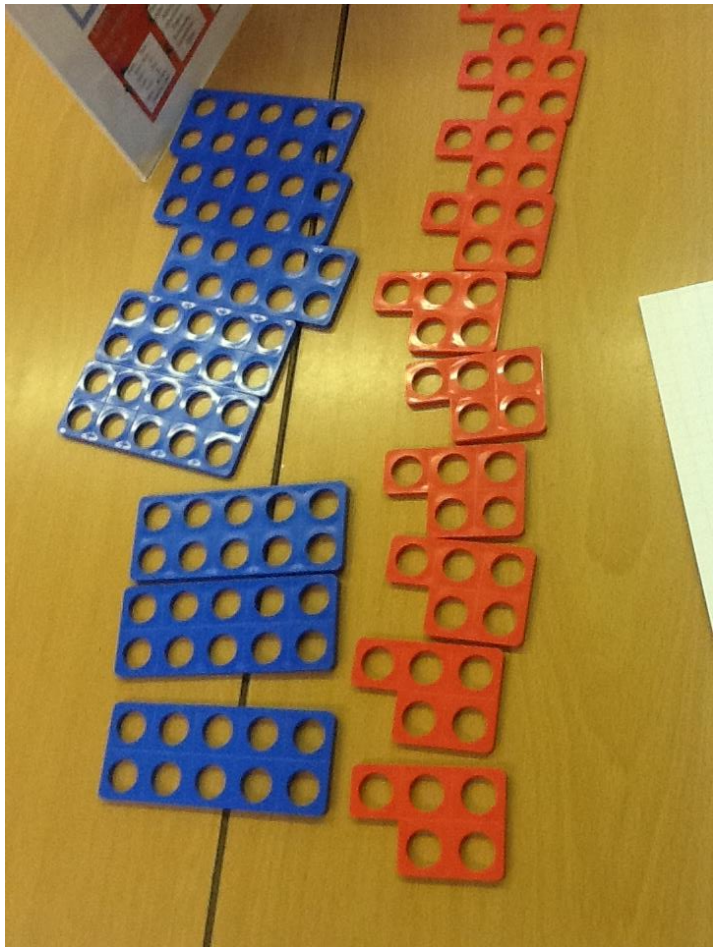
Examples of children's work:





LA children focused on spotting patterns in the 5 and 10 times tables without division:





Variation examples
Fluency project
Enigma Maths Hub
Caroline Haslett Primary School
Louise Cullen
Year 3 example

2 x 4 =	2 x 8 =
2 x 40 =	2 x 80 =
2 x 400 =	2 x □ = 1600
20 x 4=	20 x 8 =
□ x 4 = 800	200 x 8 =
20 x 40 =	20 x 80 =

Year 3: What do you notice?

- “They all have times in them.”
- “The four gets bigger, then the two.”
- “There are fours on one side and twos on the other.”
- “The fours are going 4, 40, 400.”

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“Can you use the 2 x 4 column to work out the 2 x 8 column?”

Some responses

- “No because they are different numbers.”
- “The second one has an 80. It goes in a row so you have to put another zero on. “
- “Instead of the 4’s it’s the 8’s.”

The children found it very difficult to see the link and only one child was able to say: “8 is double 4.”

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Variation examples
Fluency project
Enigma Maths Hub
Wavendon Gate Primary School
Becky Bailey
Year 4

Use your place value chart to help you complete the following on a whiteboard:

40 ÷ 1 = 40	80 ÷ 1 = 80	370 ÷ 1 = 370
40 ÷ 10 = 4	80 ÷ 10 = 8	370 ÷ 10 = 37
40 ÷ 4 = 10	80 ÷ 8 = 10	370 ÷ 37 = 10
70 ÷ 1 = 70	150 ÷ 1 = 150	1500 ÷ 1 = 1500
70 ÷ 10 = 7	150 ÷ 10 = 15	1500 ÷ 10 = 150
70 ÷ 7 = 10	150 ÷ 15 = 10	1500 ÷ 100= 15

What do you notice?

the answer is the same number we

True or false?

40 ÷ 10 = 4 ✓ 4 x 10 = 40

40 ÷ 1 = 4 x 40 ÷ 1 = 40 or 40 ÷ 10 = 4

400 ÷ 10 = 4 x 400 ÷ 10 = 40

400 ÷ 100 = 4 ✓ 4 x 100 = 400

How do you know?

Inverse

Complete:

1 x 9 = 9	9 x 1 = 9
1 x 0 = 0	0 x 1 = 0
0 x 9 = 0	9 x 0 = 0
8 x 1 = 8	8 x 0 = 0
1 x 1 = 1	1 x 2 = 2

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What do you notice?

$2 \times 3 = 6$

$2 \times 30 = 60$

$20 \times 3 = 60$

$2 \times 300 = 600$

$200 \times 3 = 600$

$20 \times 30 = 600$

$4 \times 5 = 20$

$4 \times 50 = 200$

$40 \times 5 = 200$

$4 \times 500 = 2000$

$400 \times 5 = 2000$

$40 \times 50 = 2000$

What do you notice?

2 x 4 = 8	6 x 4 = 24	10 x 4 = 40	12 x 4 = 48
2 x 8 = 16	6 x 8 = 48	10 x 8 = 80	12 x 8 = 96

Variation examples
Fluency project
Enigma Maths Hub
Barleyhurst Primary School
Gemma Anderson
Year 5

19 ÷ 4 =

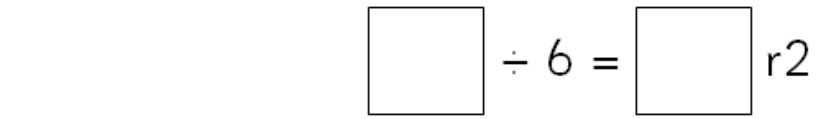
20 ÷ 4 =

21 ÷ 4 =

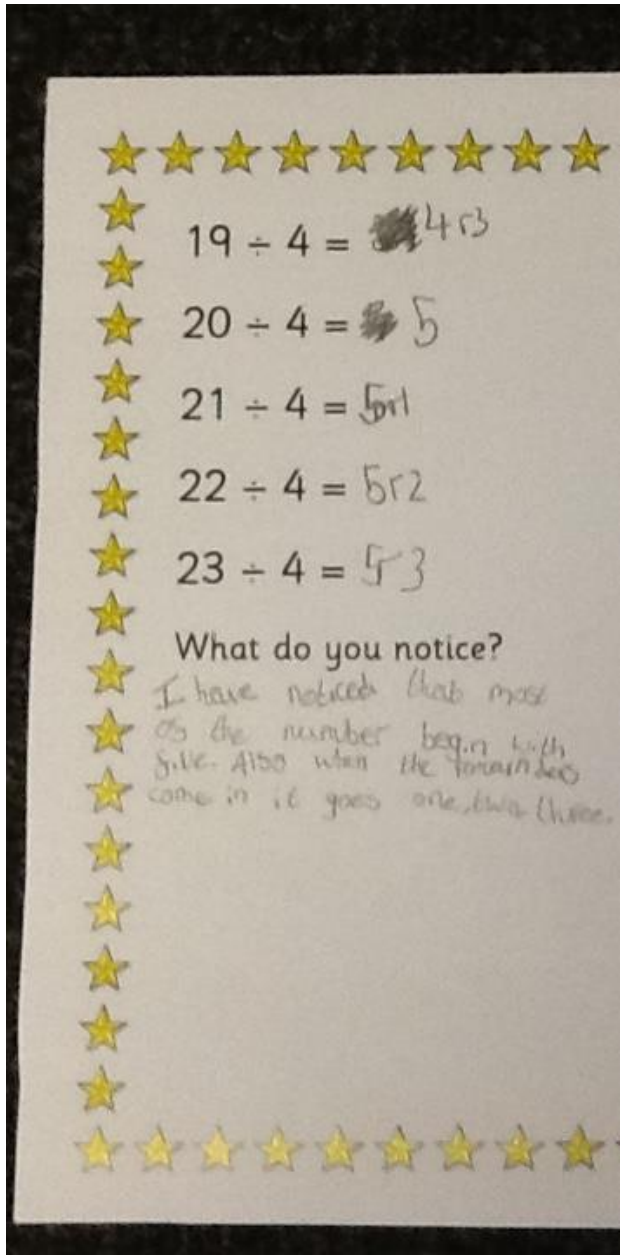
22 ÷ 4 =

23 ÷ 4 =

What do you notice?



What could the number sentence be?



19 ÷ 4 = [redacted]4r3

20 ÷ 4 = [redacted]5

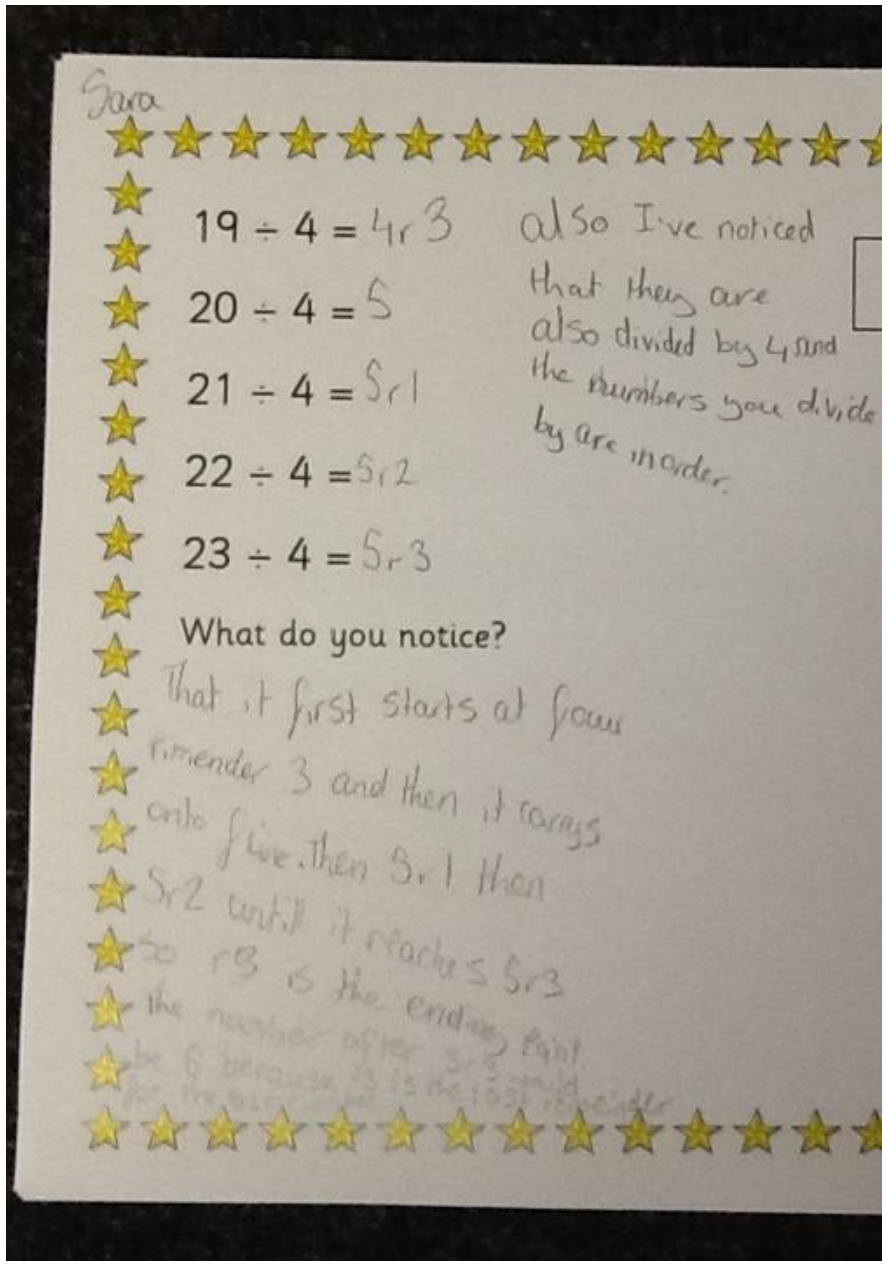
21 ÷ 4 = 5r1

22 ÷ 4 = 5r2

23 ÷ 4 = 5r3

What do you notice?

I have noticed that most of the number begin with five. Also when the remainders come in it goes one, two, three.



Sara

19 ÷ 4 = 4r3

20 ÷ 4 = 5

21 ÷ 4 = 5r1

22 ÷ 4 = 5r2

23 ÷ 4 = 5r3

also I've noticed that they are also divided by 4 and the numbers you divide by are in order.

What do you notice?

That it first starts at four remender 3 and then it carrys onto five. then 5r1 then 5r2 until it reaches 5r3 so r3 is the ending point the number after 5r3 is 6 because 23 is the last number

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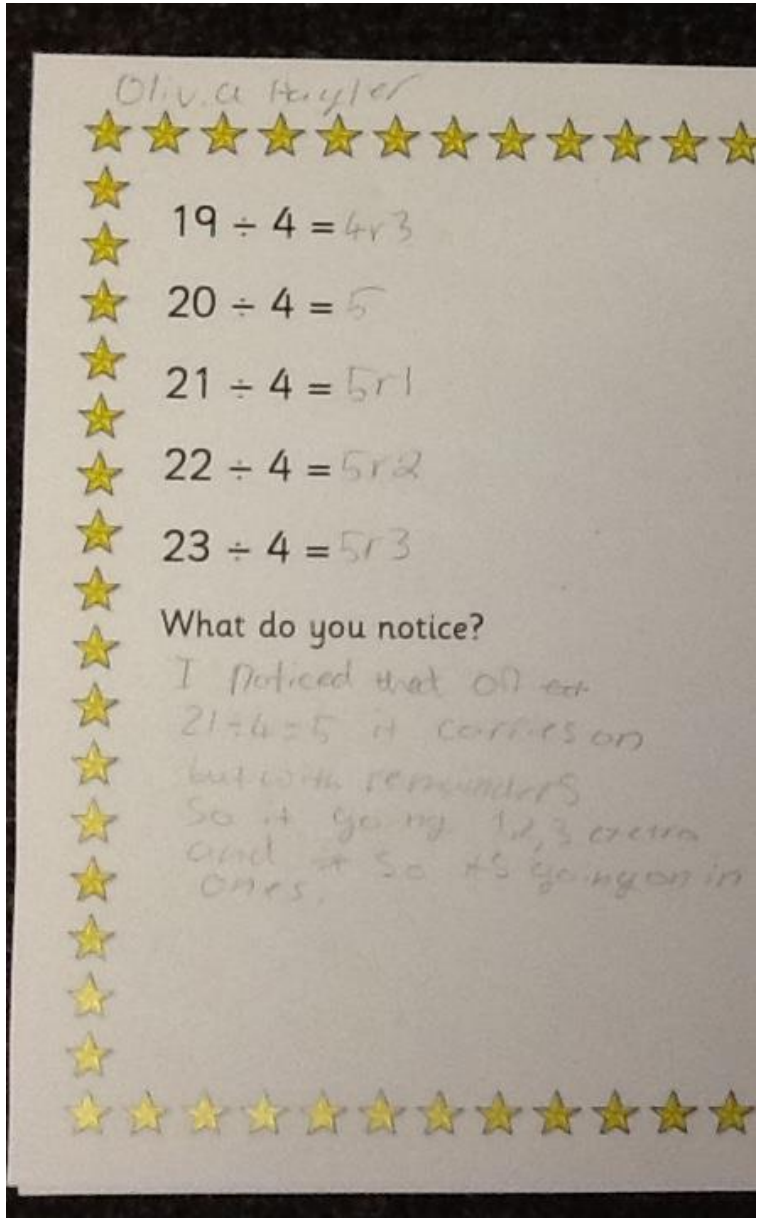
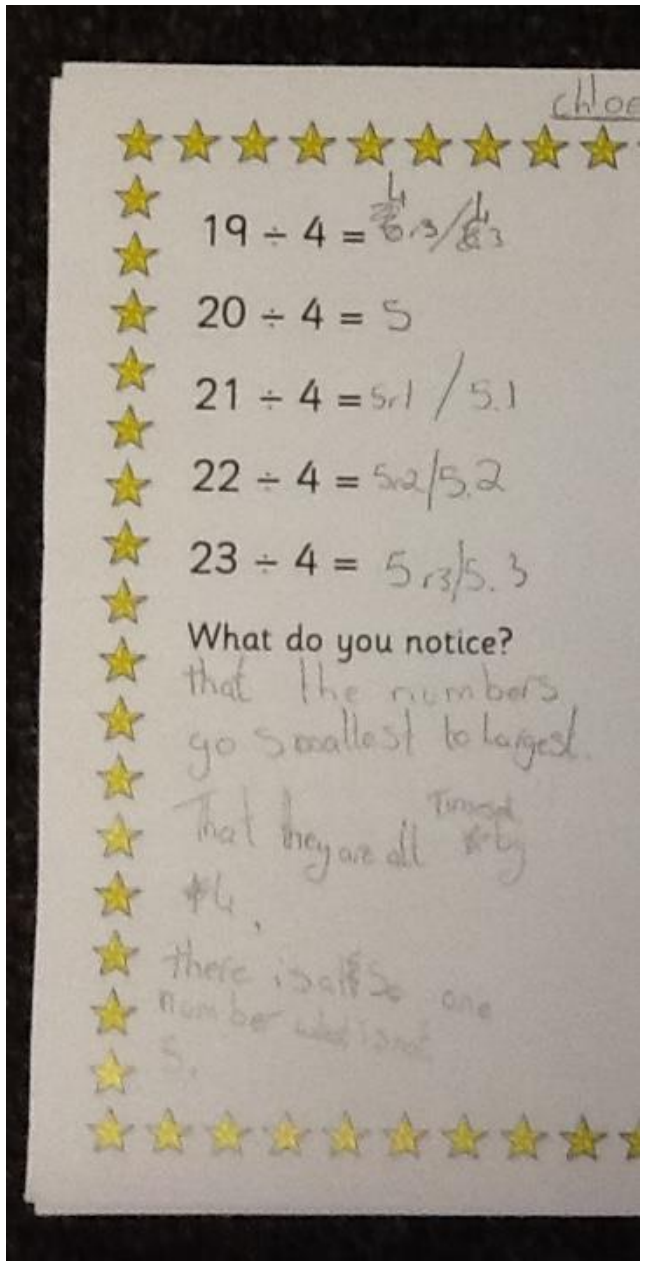
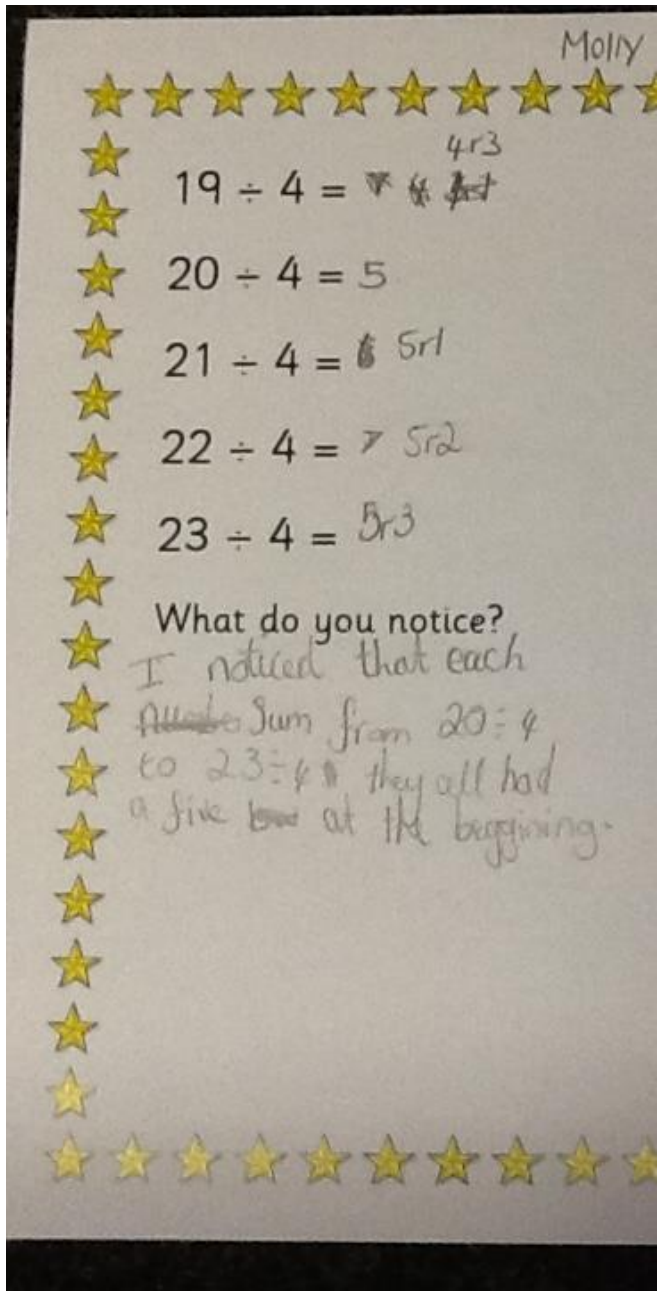
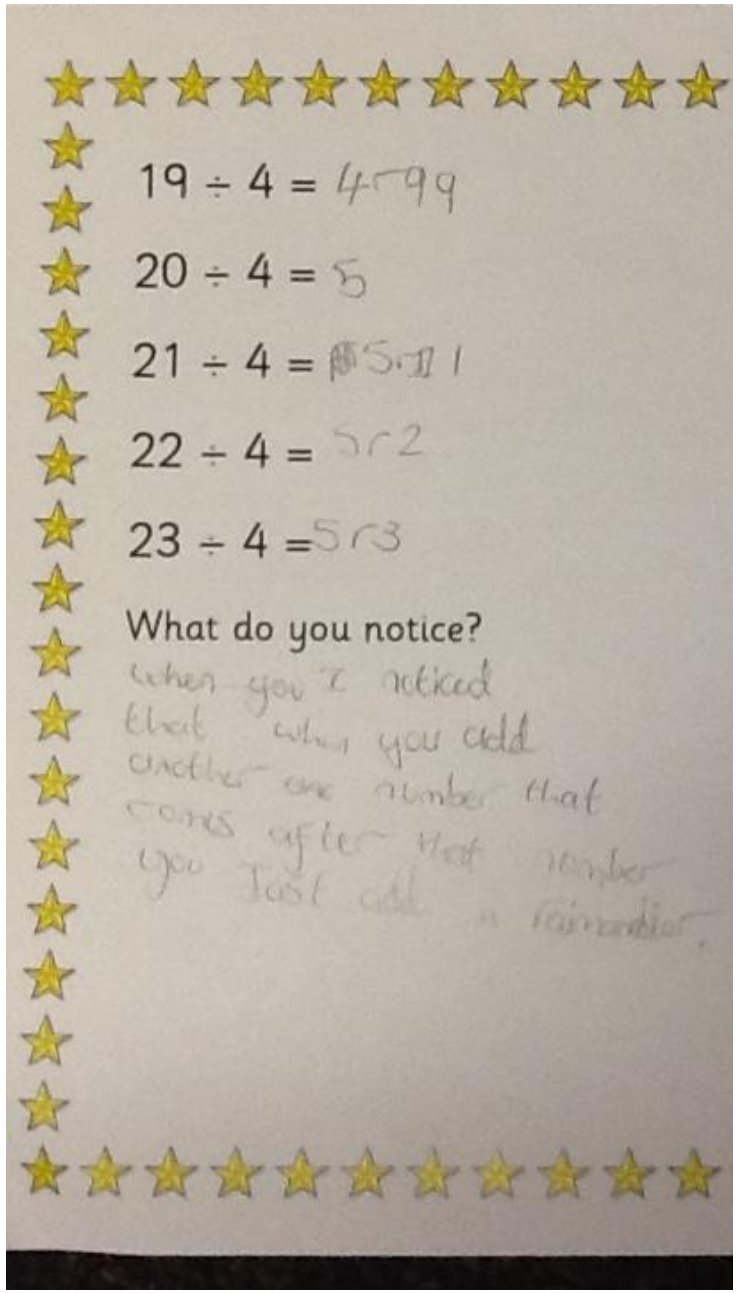


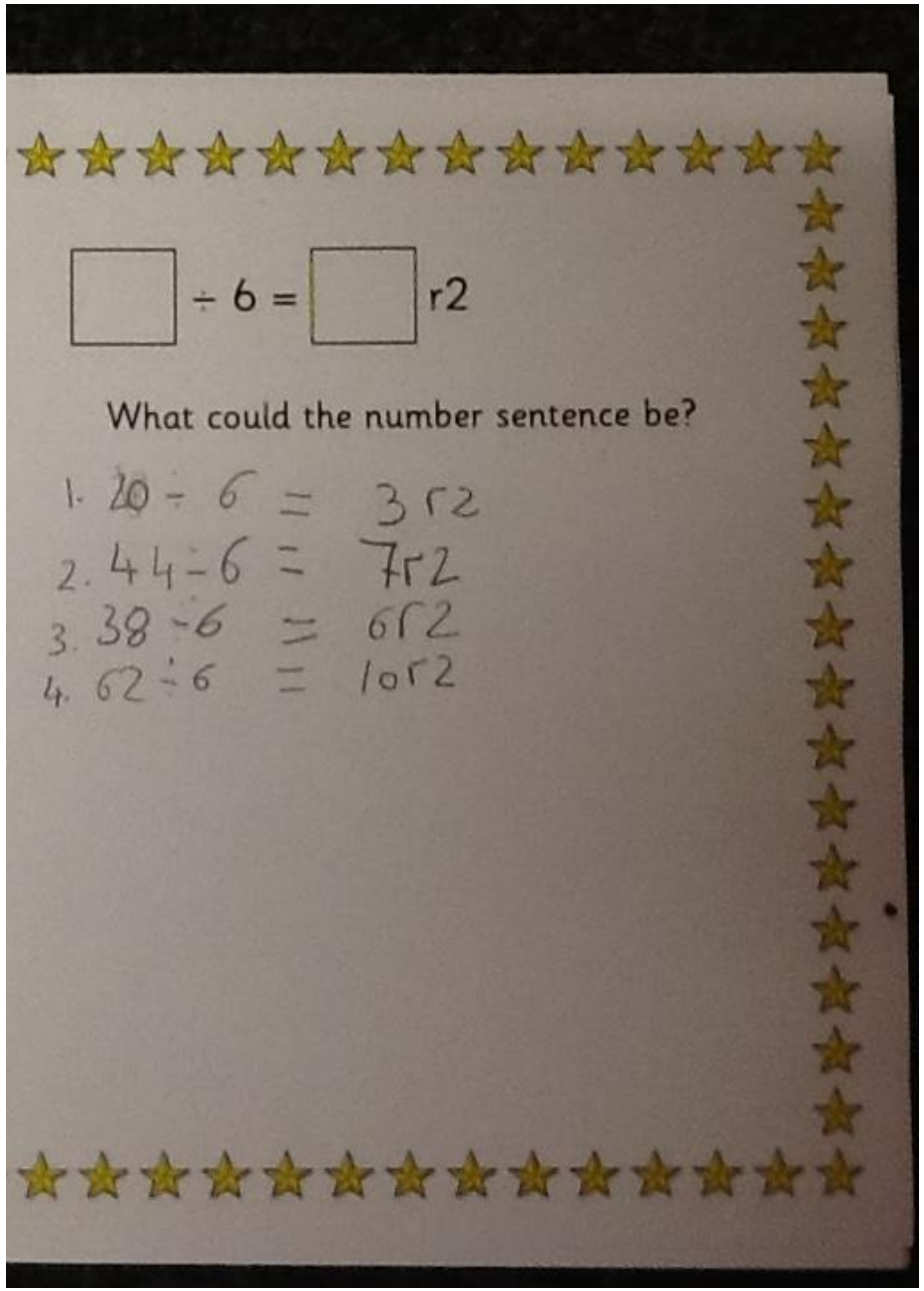


MathsHUBS Enigma





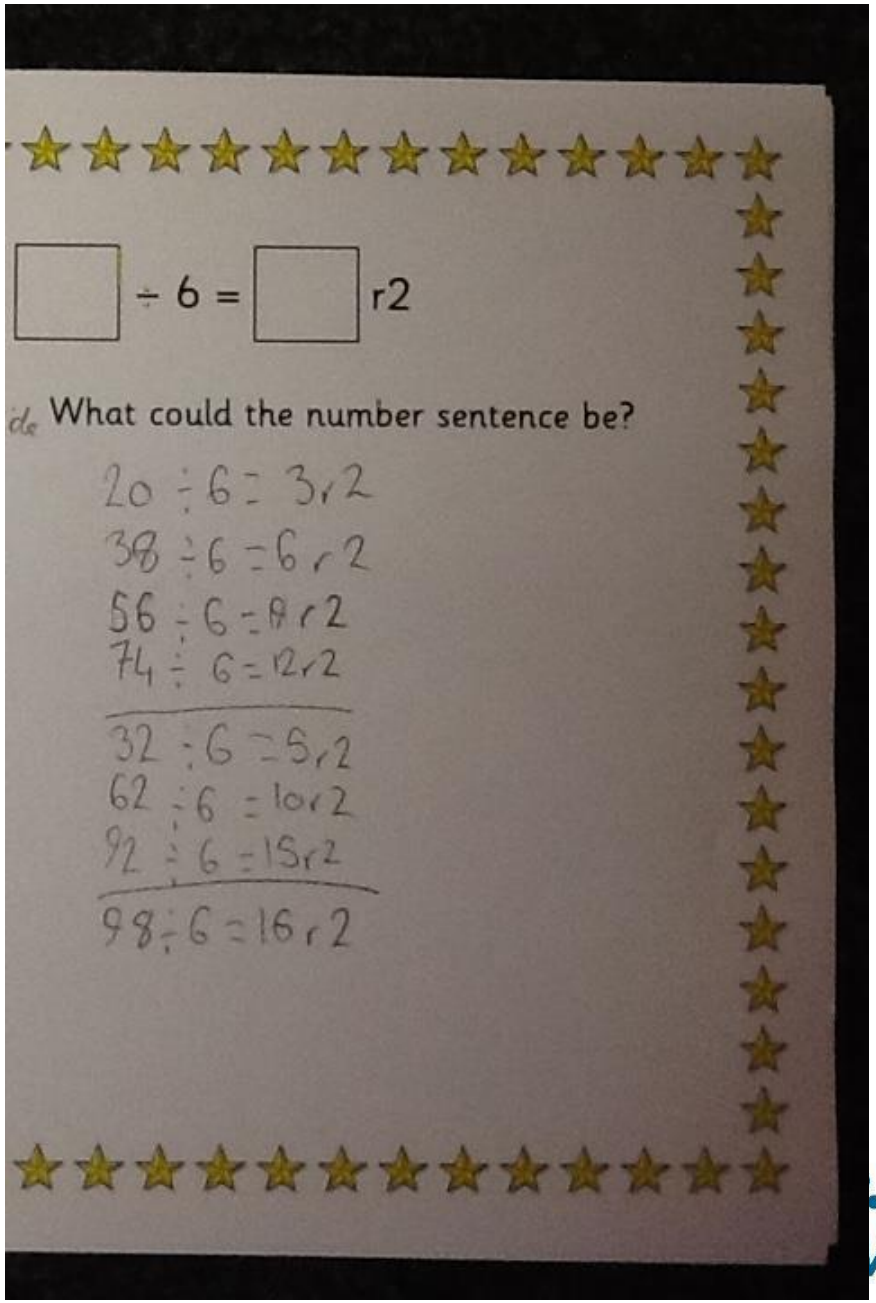
MathsHUBS Enigma



□ ÷ 6 = □ r2

What could the number sentence be?

1. 20 ÷ 6 = 3 r2
2. 44 ÷ 6 = 7 r2
3. 38 ÷ 6 = 6 r2
4. 62 ÷ 6 = 10 r2



□ ÷ 6 = □ r2

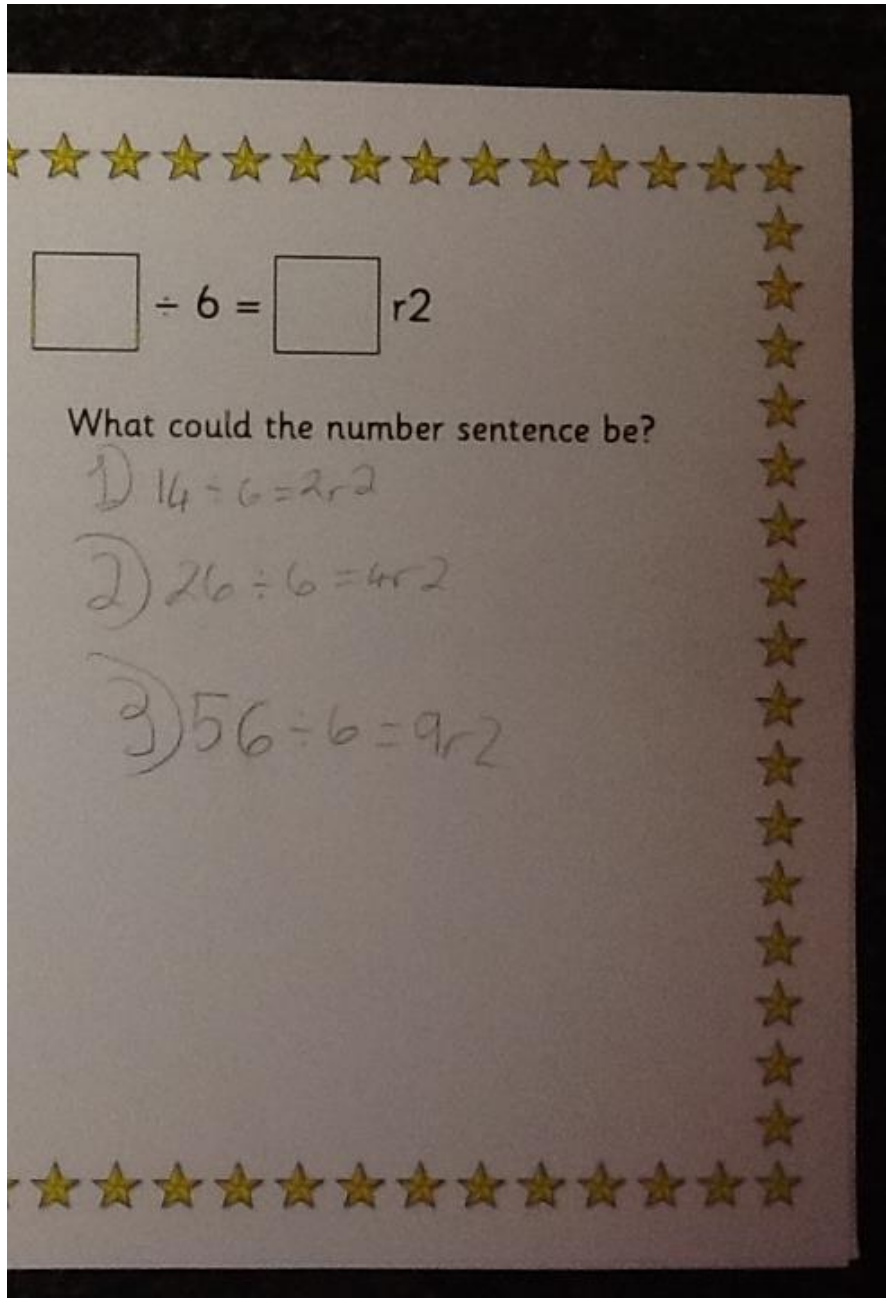
What could the number sentence be?

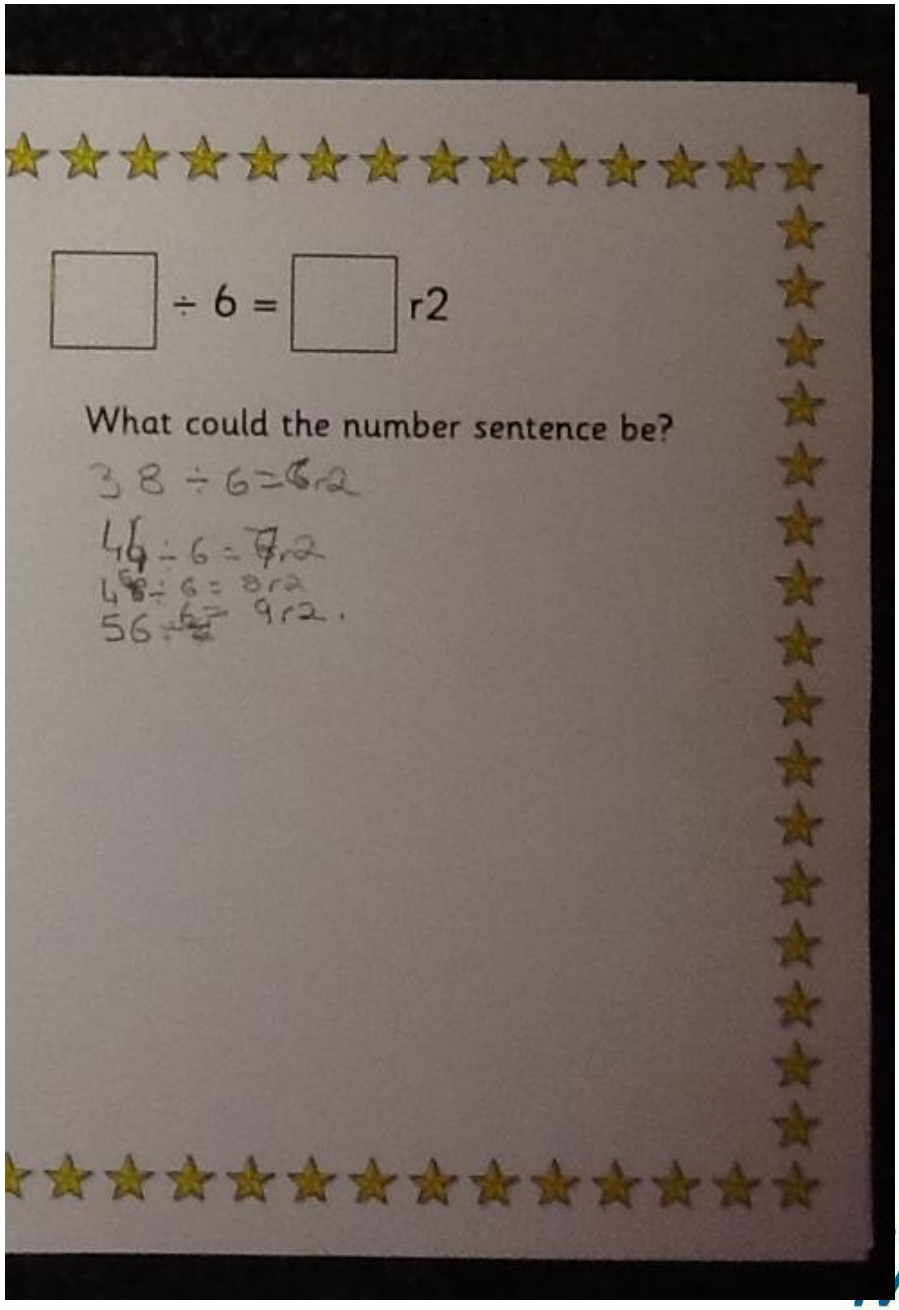
20 ÷ 6 = 3 r 2
38 ÷ 6 = 6 r 2
56 ÷ 6 = 9 r 2
74 ÷ 6 = 12 r 2

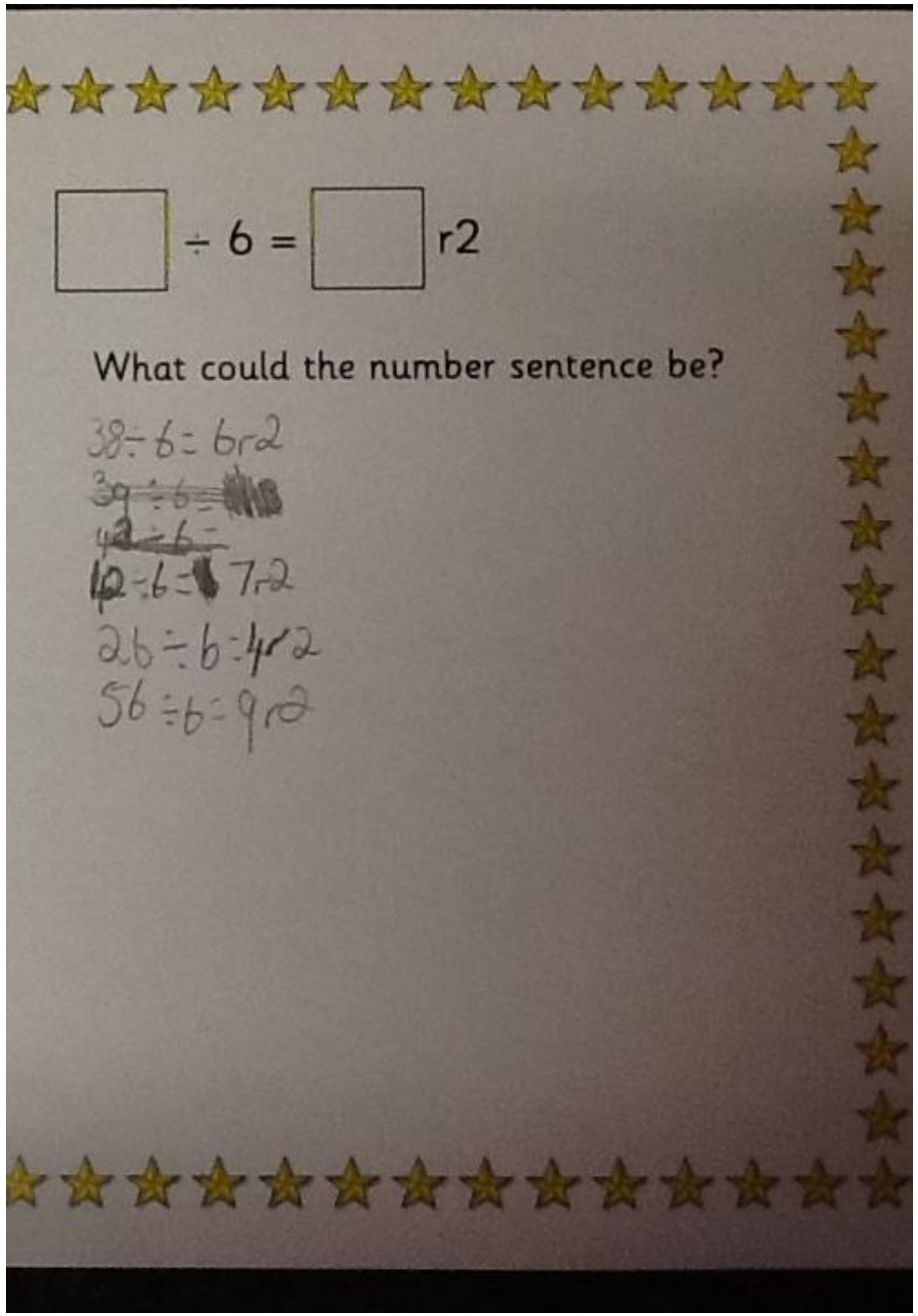
32 ÷ 6 = 5 r 2
62 ÷ 6 = 10 r 2
92 ÷ 6 = 15 r 2

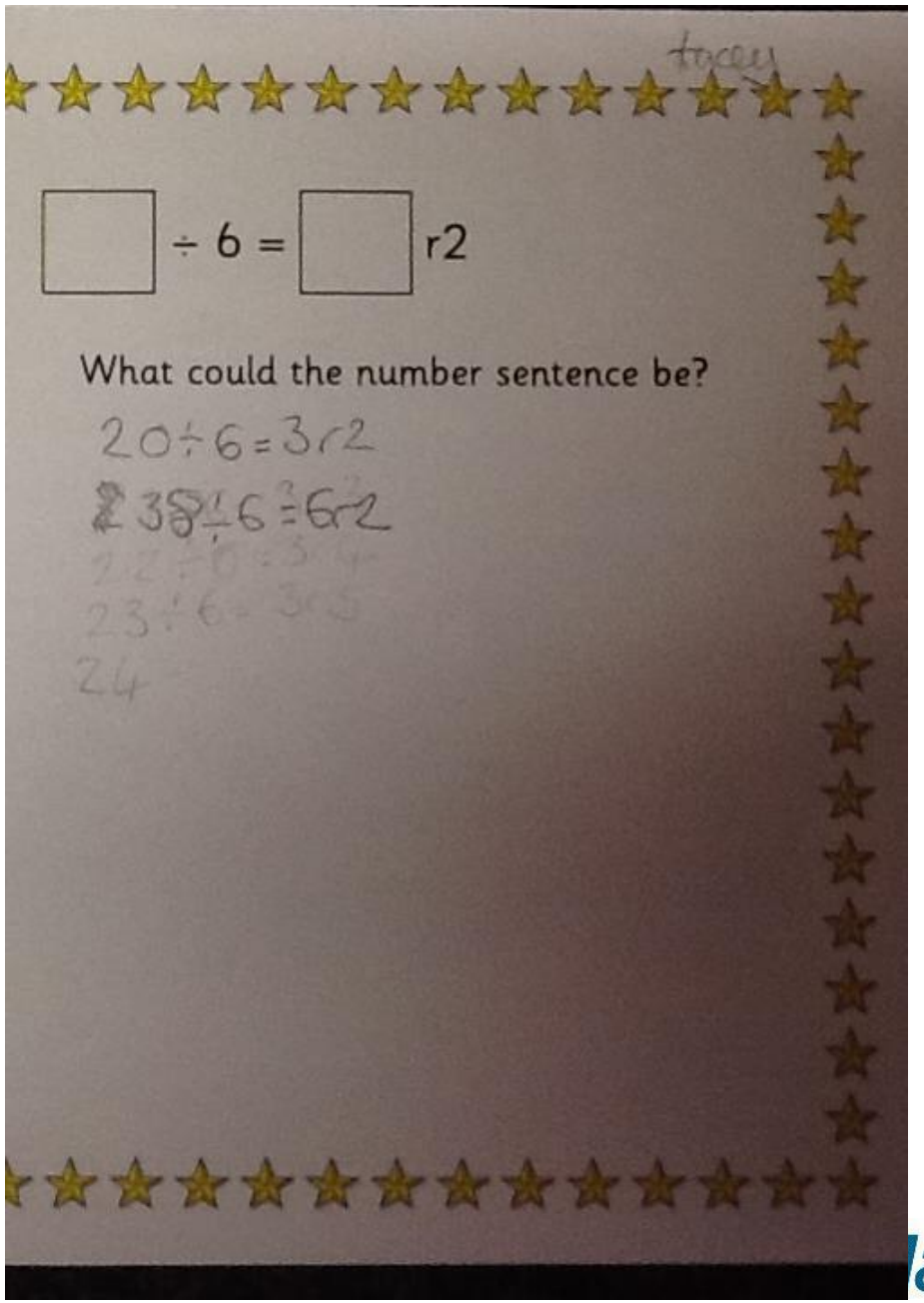
98 ÷ 6 = 16 r 2

MathsHUBS
Enigma









Variation examples
Fluency project
Enigma Maths Hub
Spring Lane School
Laura Butler
Emilie Harbottle
Year 5

LO: To multiply by multiples of 10

1)If 5 x 3 = 15 ***then*** 50 x 3 =……. ***and*** 500 x 3 =……..

2)If 5 x 4 = 20 ***then*** 50 x 4 =……. ***and*** 500 x 4 =……..

3)If 5 x 5 = 25 ***then*** 50 x 5 =……. ***and*** 500 x 5 =……..

4)If 5 x 6 = 30 ***then*** 50 x 6 =……. ***and*** 50 x 60 =……..

5)If 8 x 3 = 24 ***then*** 3 x 80 =……. ***and*** 800 x 3 =……..

MathsHUBS Enigma

(Be careful with the next one!)

1)If 9 x 3 = 27 ***then*** 90 x 30 =……. ***and*** 900 x 30 =……..

2)If 4 x 9 = 36 ***then*** 40 x 9 =……. ***and*** 400 x 9 =……..

3)If 8 x 8 = 64 ***then*** 80 x 8 =……. ***and*** 800 x 8 =……..

4)If 9 x 8 = 72 ***then*** 90 x 8 =……. ***and*** 900 x 8 =……..

5)If 6 x 9 = 54 ***then*** 60 x 9 =……. ***and*** 600 x 9 =……..

MathsHUBS Enigma

Variation examples
Fluency project
Enigma Maths Hub
Loughton School
Cathy Woodward
Year 6

We are learning to investigate dividing by 4

19 ÷ 4 =

20 ÷ 4 =

21 ÷ 4 =

22 ÷ 4 =

23 ÷ 4 =

24 ÷ 4 =

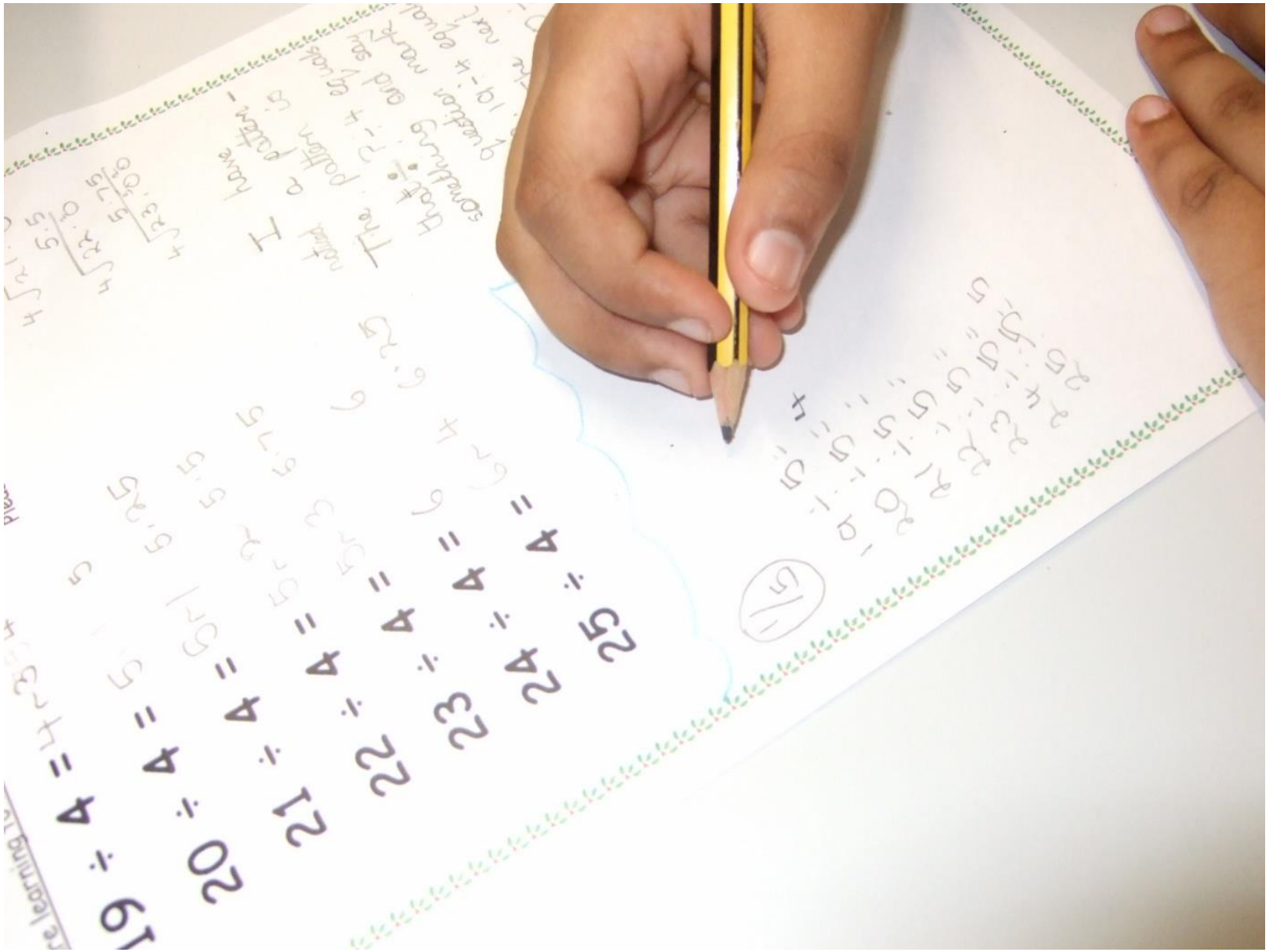
25 ÷ 4 =

Do you notice a pattern?

Please explain.

Would the answer increase by 1/5 each time, if you divide by 5?

MathsHUBS Enigma



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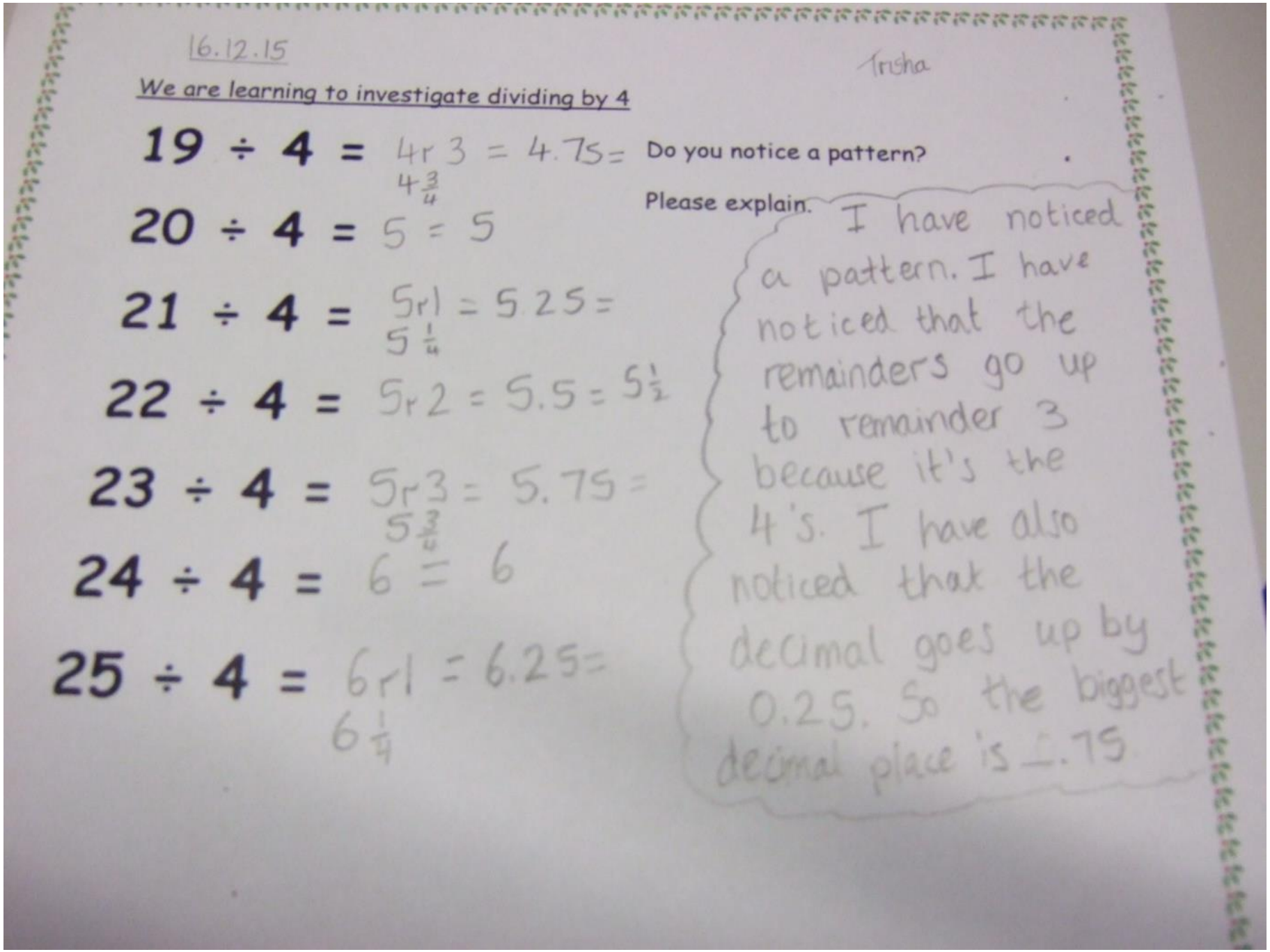

16.12.15

Trisha

We are learning to investigate dividing by 4

19 ÷ 4 = 4r 3 = 4.75 = $4\frac{3}{4}$

20 ÷ 4 = 5 = 5

21 ÷ 4 = 5r1 = 5.25 = $5\frac{1}{4}$

22 ÷ 4 = 5r2 = 5.5 = $5\frac{1}{2}$

23 ÷ 4 = 5r3 = 5.75 = $5\frac{3}{4}$

24 ÷ 4 = 6 = 6

25 ÷ 4 = 6r1 = 6.25 = $6\frac{1}{4}$

Do you notice a pattern?

Please explain.

I have noticed a pattern. I have noticed that the remainders go up to remainder 3 because it's the 4's. I have also noticed that the decimal goes up by 0.25. So the biggest decimal place is .75

$621 \div 27 =$

$6210 \div 270 =$

$27 \times \square = 162$

$27 \times \square = 162 \times \square$

$27 \times \square = 243$

$28 \times \square = 252$

MathsHUBS
Enigma

We hope that these were useful

MathsHUBS
Enigma