Sense of Number
Visual Calculation Policy

Basic Edition for
Ashfield Valley Primary School
February 2015

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Compiled by the Sense of Number Maths Team

'A picture is worth 1000 words!'

www.senseofnumber.co.uk

Guide to using a Visual Calculation Policy

The Sense of Number Visual Calculation Policy provides a visual representation of a school's written and mental calculation policy.

Typical uses:

Classoom: The slides are printed out (e.g. A4) and the appropriate slides are displayed within each classroom for continual reference or on a working wall.

Teacher Reference: The slides are printed out (e.g. 9 slides per A4 page) and inserted in the teacher's planning folder.

Parents: The slides are used to communicate to parents the methods being taught and used within school.

Website: Slides from the VCP are inserted on a schools' maths webpages.

(Please note: the VCP should not be made available for download)

KC1: Key Concepts!

Addition

+

8 + 2 = 10

"What is 8 add 2?"
Answer: 10

Subtraction

−

8 - 2 = 6

"What is 8 subtract 2?"
Answer: 6

"The difference between 8 and 2 is 6"

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KC2: Key Concepts!

Multiplication

×

8 x 2 = 16

"8 multiplied by 2" means
"8, 2 times" or
"2 groups of 8"

Division

÷

8 ÷ 2 = 4

"8 divided by 2" means "How many groups of 2 are there in 8?" Answer: 4

("8 shared into 2 sets is 4")

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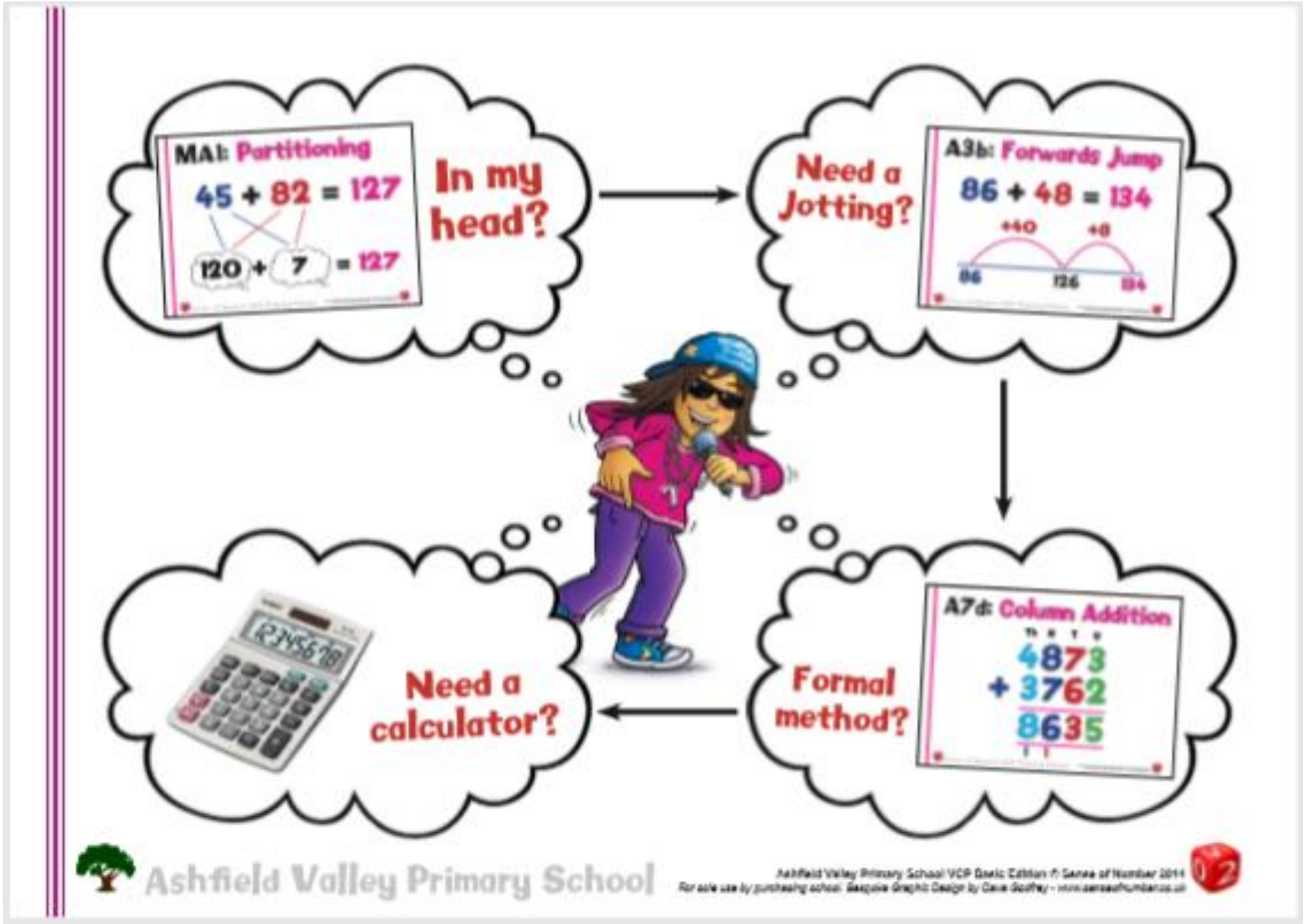
?


MA1: Partitioning
45 + 82 = 127
120 + 7 = 127
In my head?
Need a Jotting?
A3b: Forwards Jump
86 + 48 = 134
+40
+8
86
126
134
A7d: Column Addition
4873
+ 3762
8635
Formal method?
Need a calculator?
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1

Can I do this in my head?

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2

Do I need to use a drawing or a jotting?

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3

Do I need an expanded or a standard method?

?

4

Do I need a calculator?

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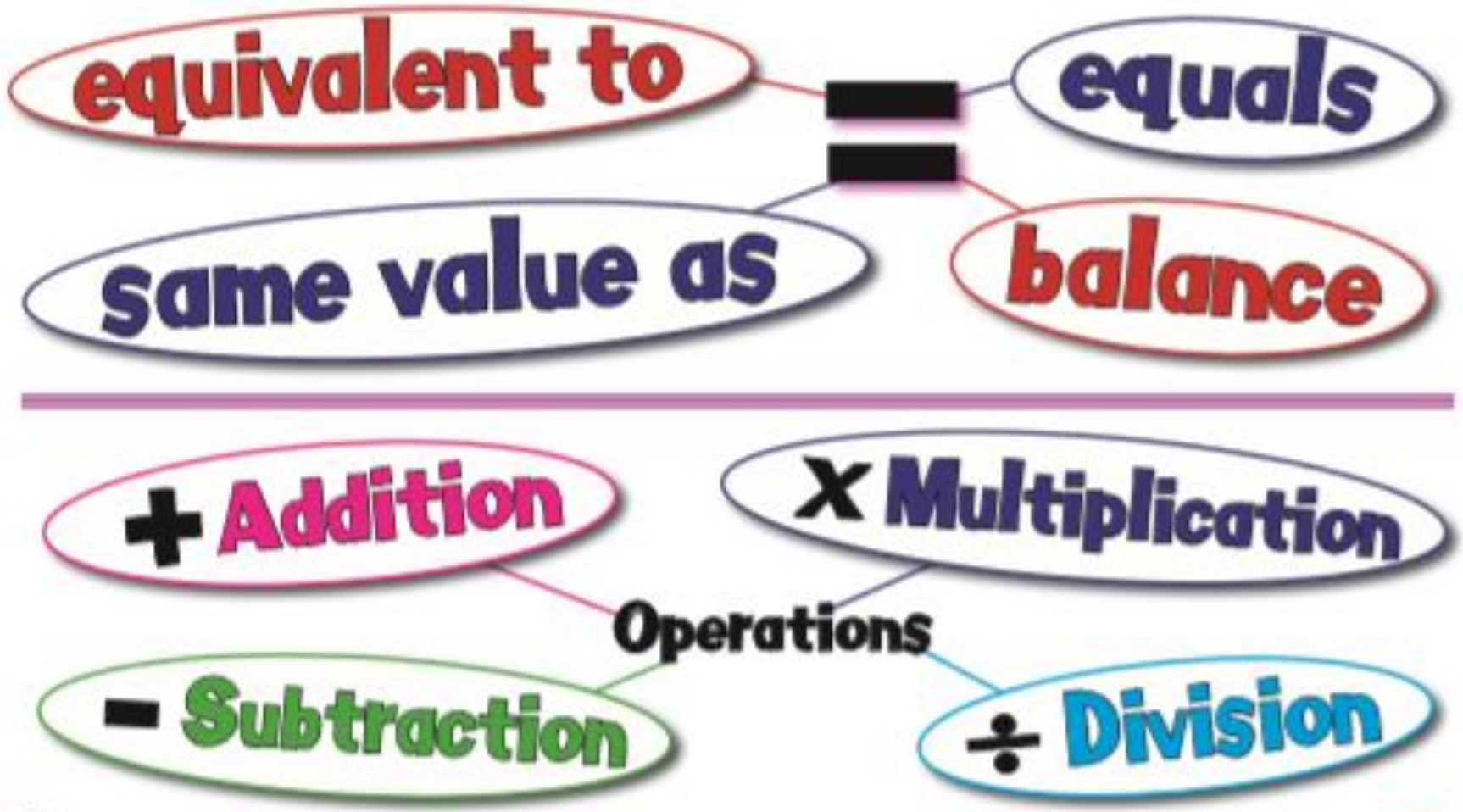
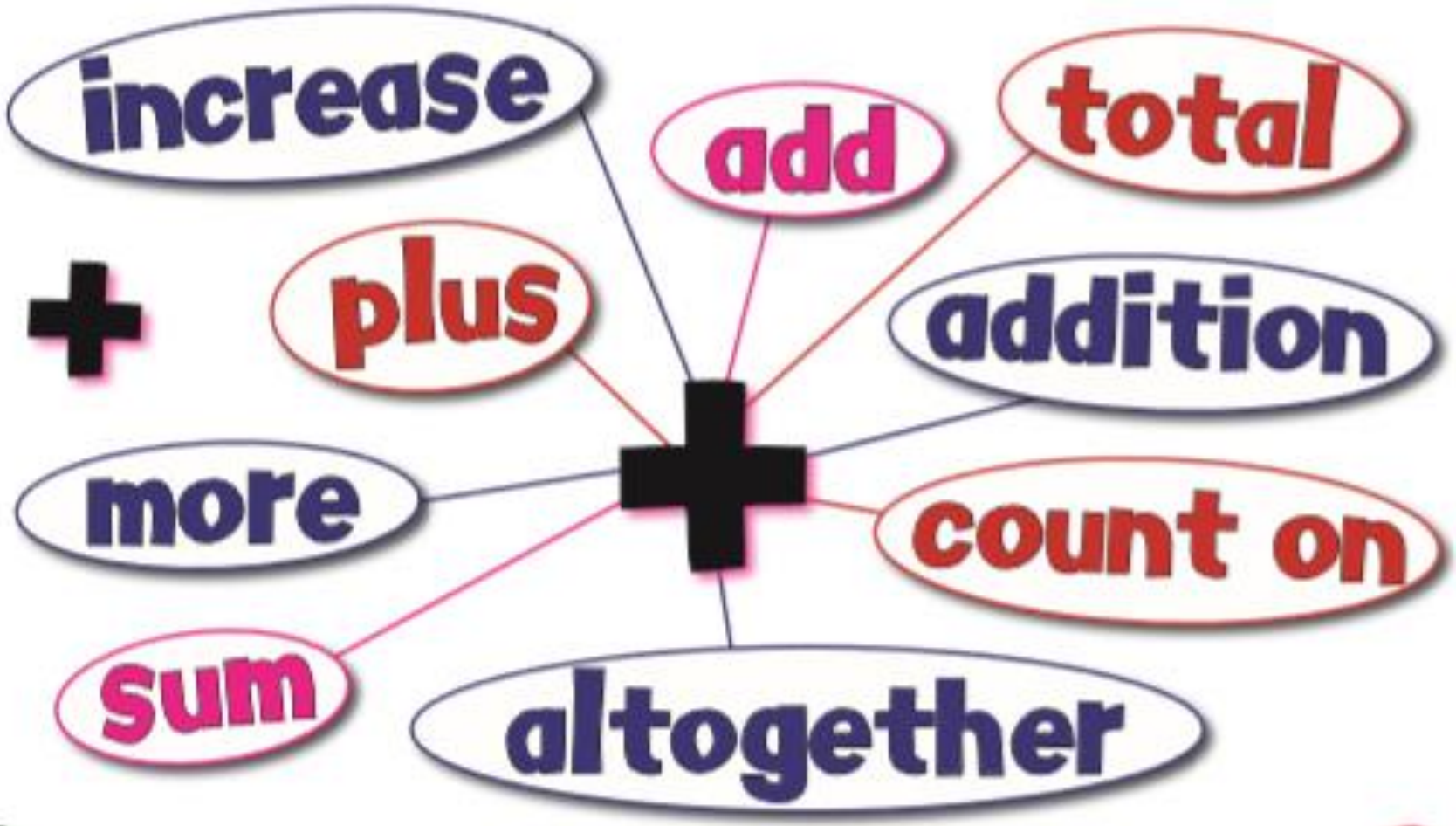
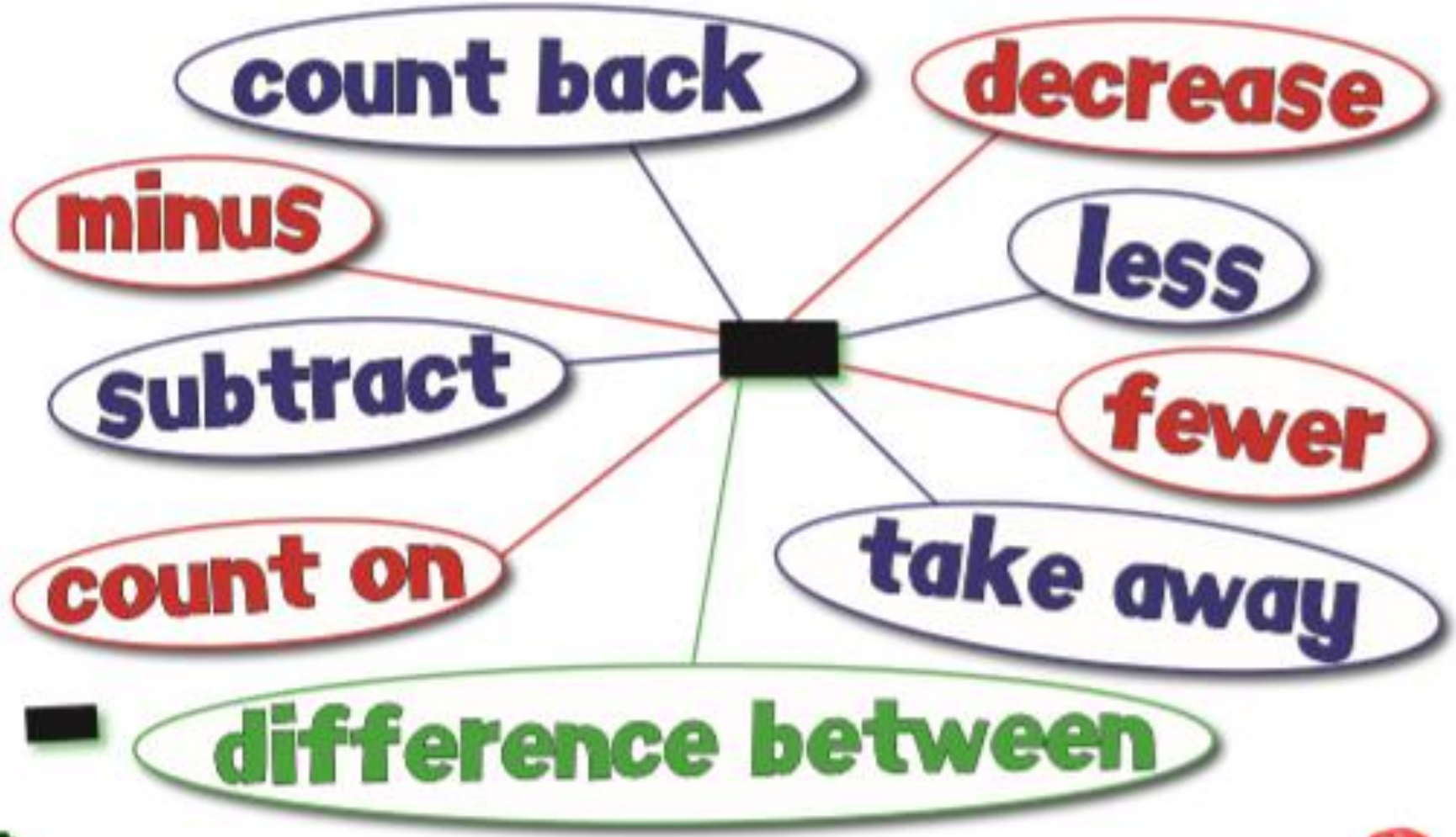
Calculation Vocabulary



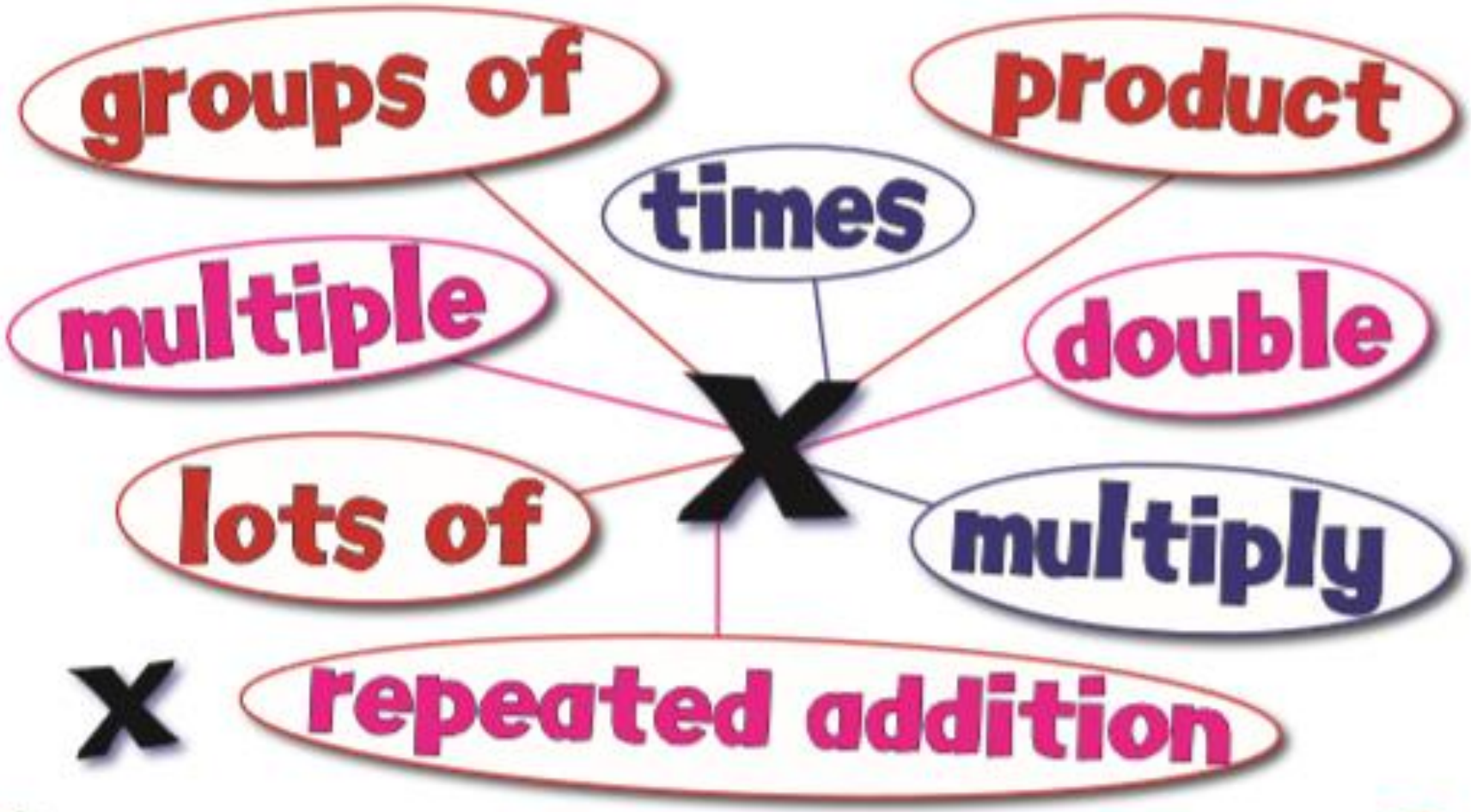
Addition Vocabulary



Subtraction Vocabulary



Multiplication Vocabulary



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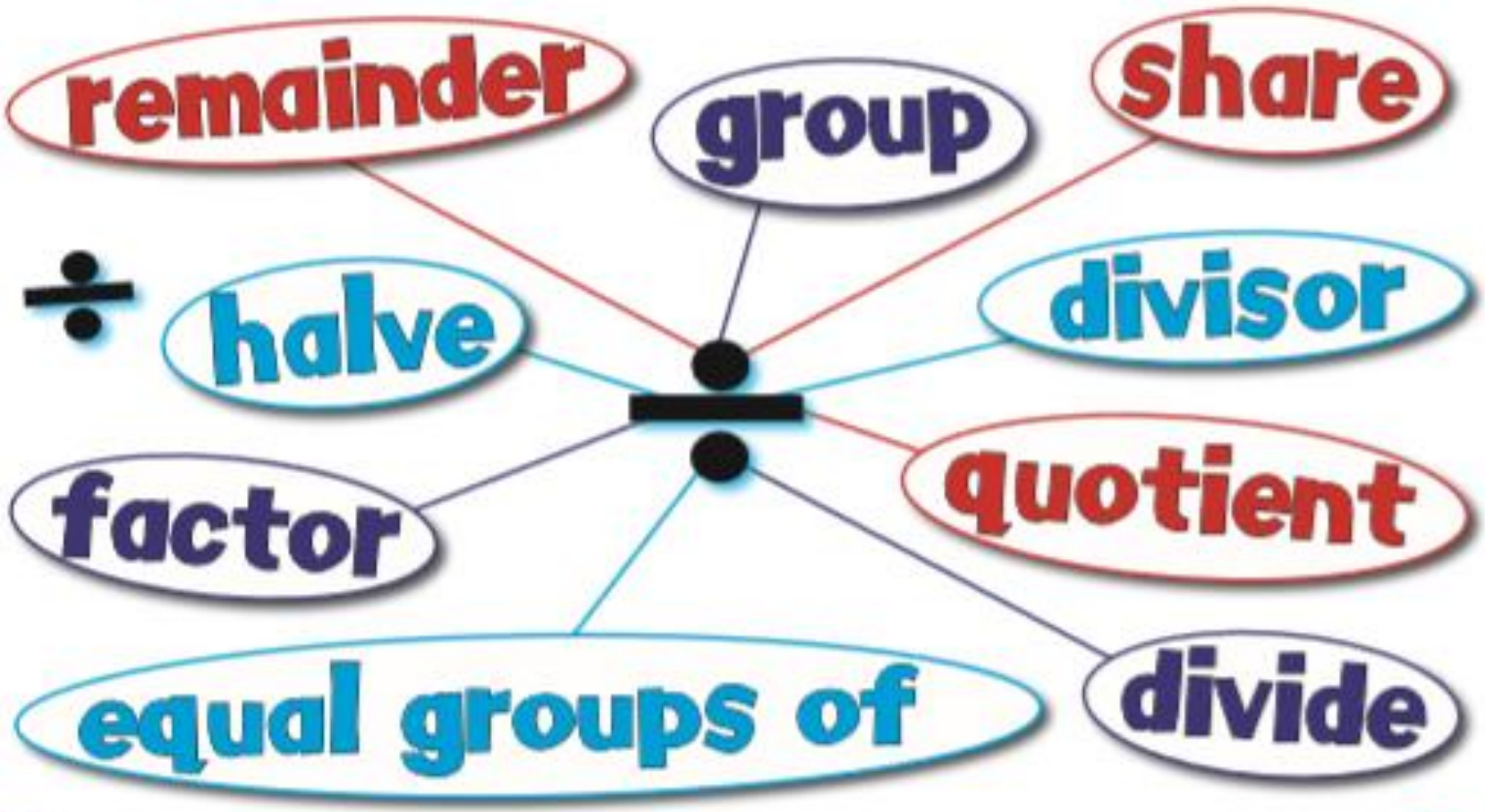
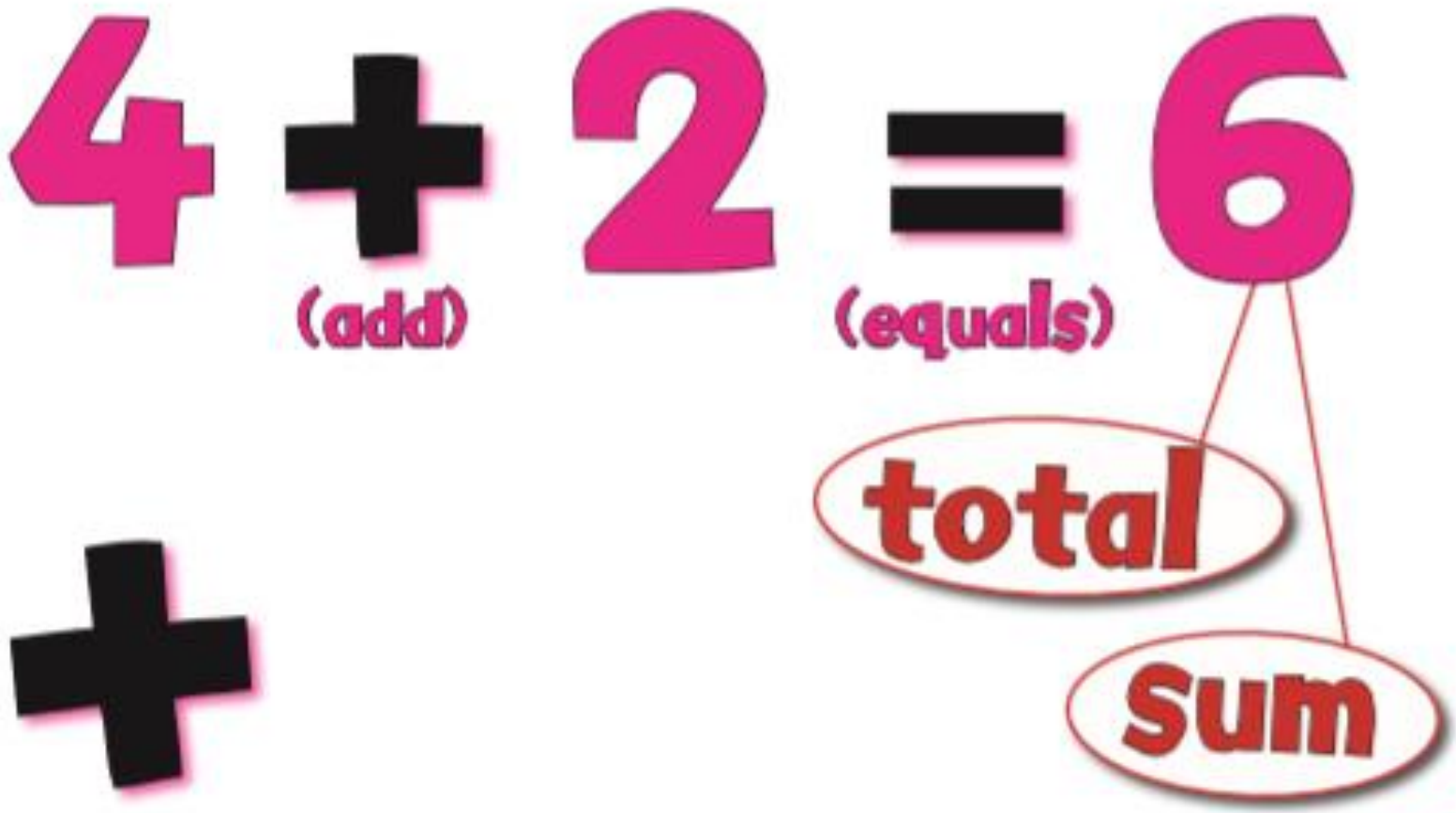
Division Vocabulary



Addition Calculation



Subtraction Calculation

6 − 2 = 4

(subtract) (equals)

difference

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Multiplication Calculation

$4 \times 2 = 8$

(multiplied by) (equals)

product

$\times$

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Division Calculation

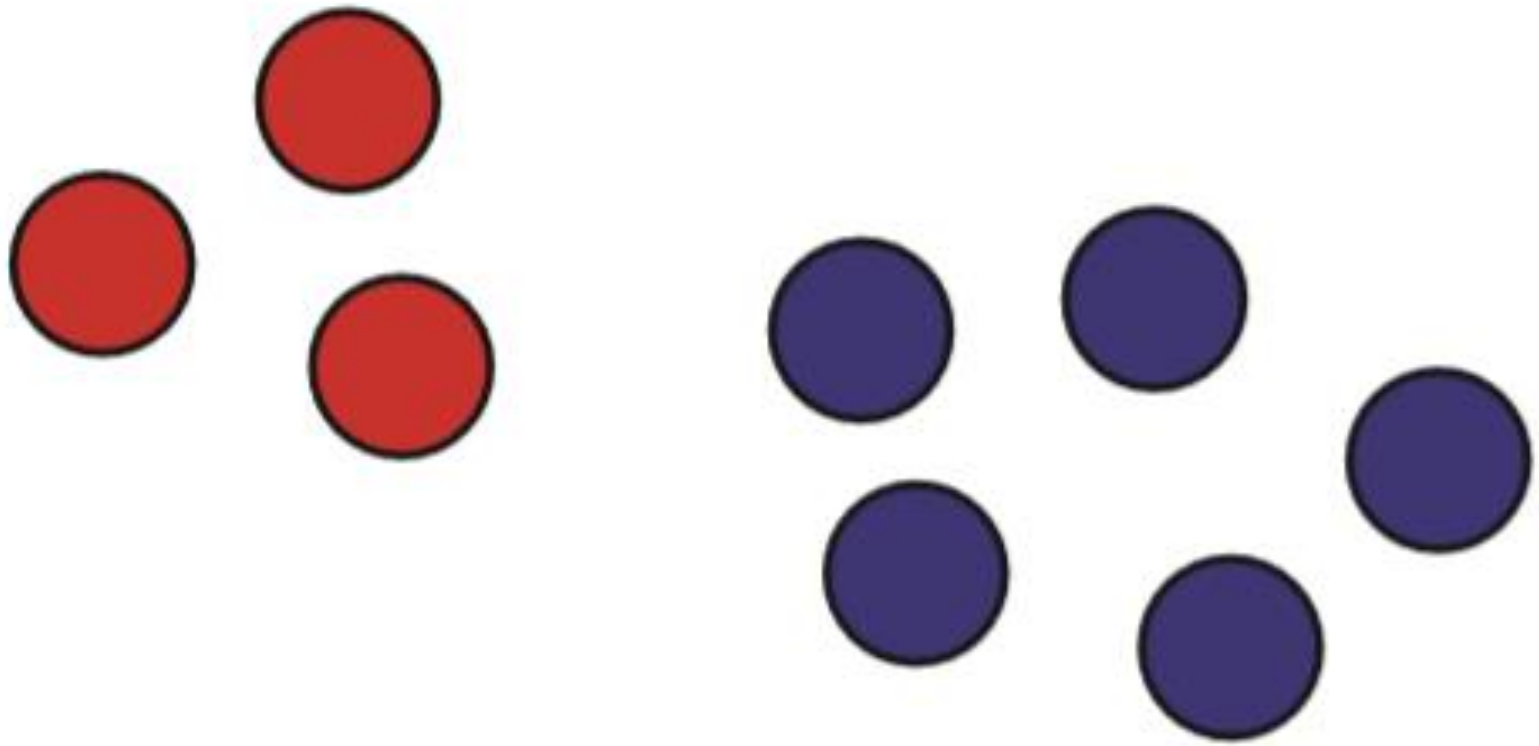
$8 \div 2 = 4$

(divided by) (equals)

quotient

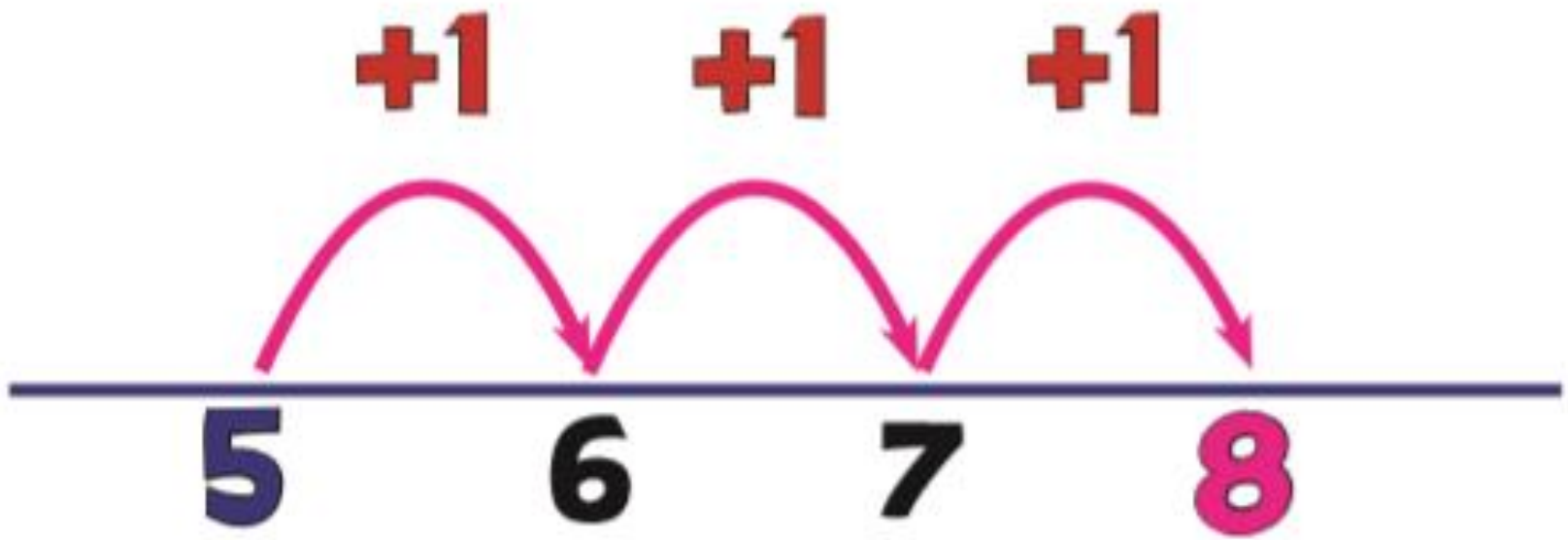
÷

A1: Objects & Pictures



"If I have 3 and then 5 more, how many altogether? Answer: 8"

A2: Counting On



$$5 + 3 = 8$$

A4: Partitioning

$$43 + 24 = 67$$

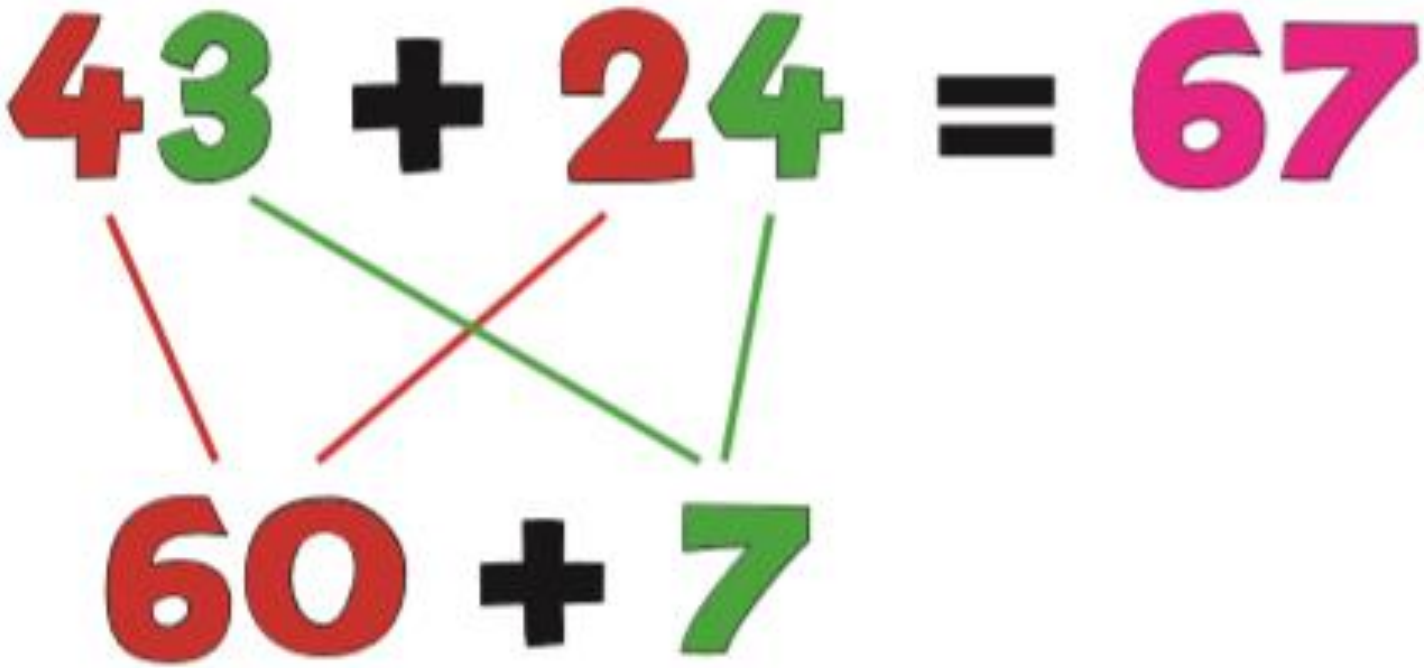
$$40 + 20 = 60$$

$$3 + 4 = 7$$

$$67$$

?

A5: Partition Jot



A5a: Partitioning

Columns

43 + 24

	40	3
+	20	4
	60	7 = 67

A5a: Partitioning columns

47 + 29

	40	7
+	20	9
	60	16 = 76

A5b: Partitioning

Columns

147 + 129

100	40	7
+ 100	20	9
200	60	16

200 + 60 + 16 = 276

A7: Column Addition

$$\begin{array}{r} 687 \\ +\ 248 \\ \hline 935 \end{array}$$

1 1

Do we want the MA1 to MA5 slides ?

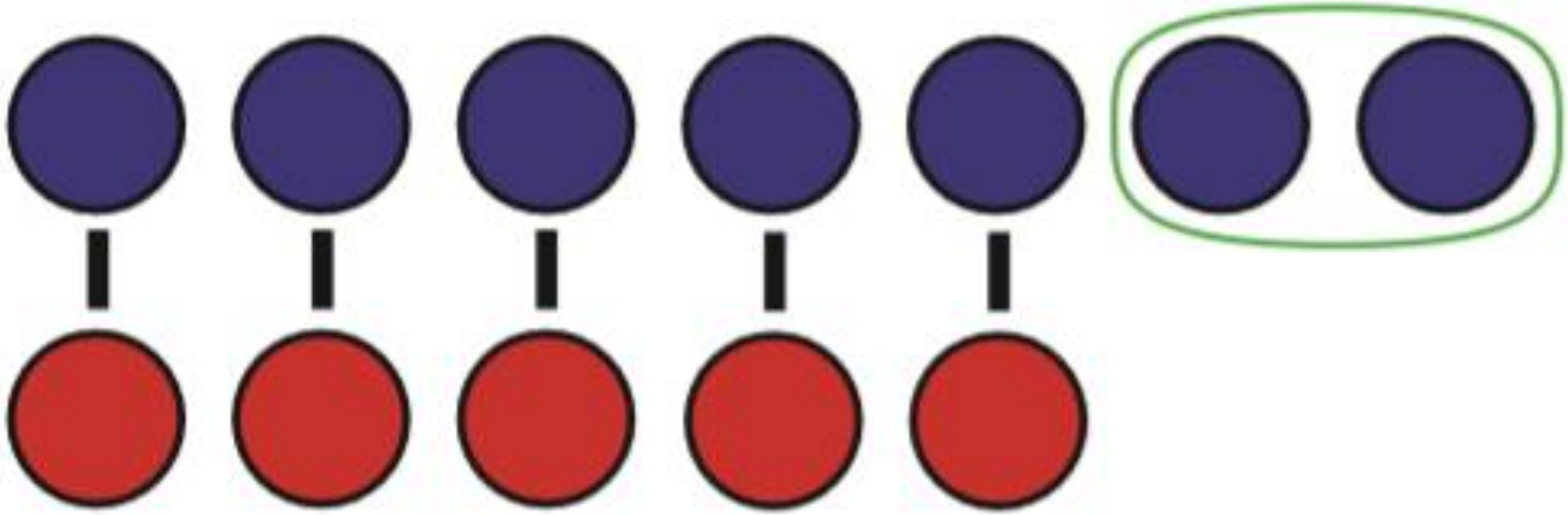
?

S1: Objects

7 - 3 = 4

"What do I get if I take 3 away from 7? Answer: 4"

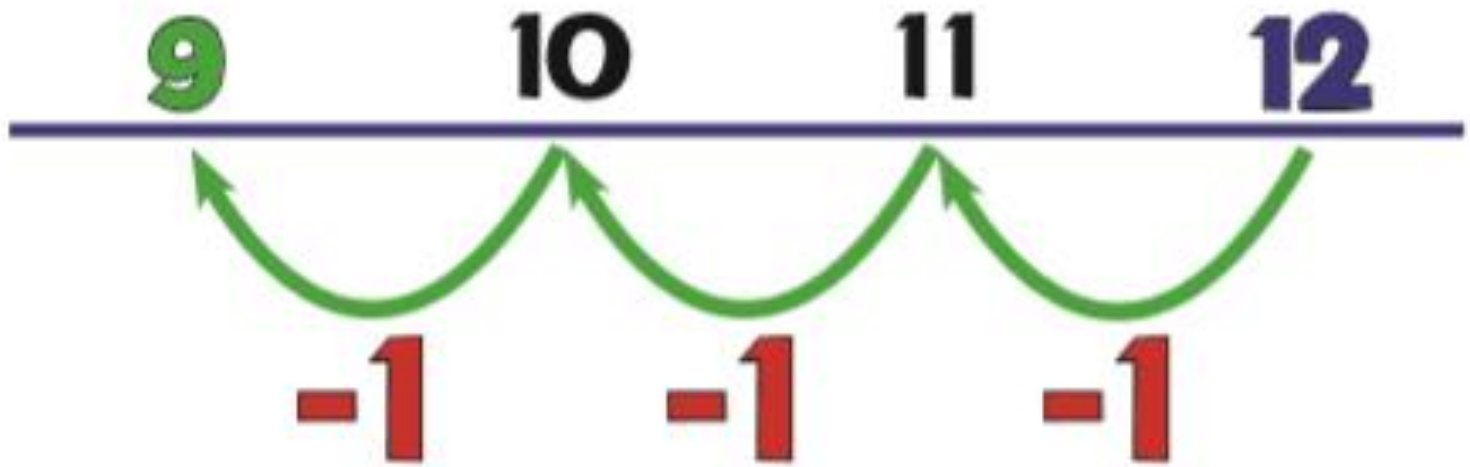
S2: What's the Difference?



7 - 5 = 2

"How many more is 7 than 5? What is the difference?"

S3: Counting Back



12 - 3 = 9

"What do I get if I take 3 away from 12? Answer: 9"

S6a: Partitioning

87 - 23

80 - 20 = 60

7 - 3 = 4

60 + 4 = 64

S6b: Working in Columns

87 - 23

* Largest number at the top
* Start with the units

	80	7
-	20	3
	60	4 = 64

?

S10: Exchanging Tens

54 - 37

	40	1
	~~50~~	4
-	30	7
	10	7 = 17

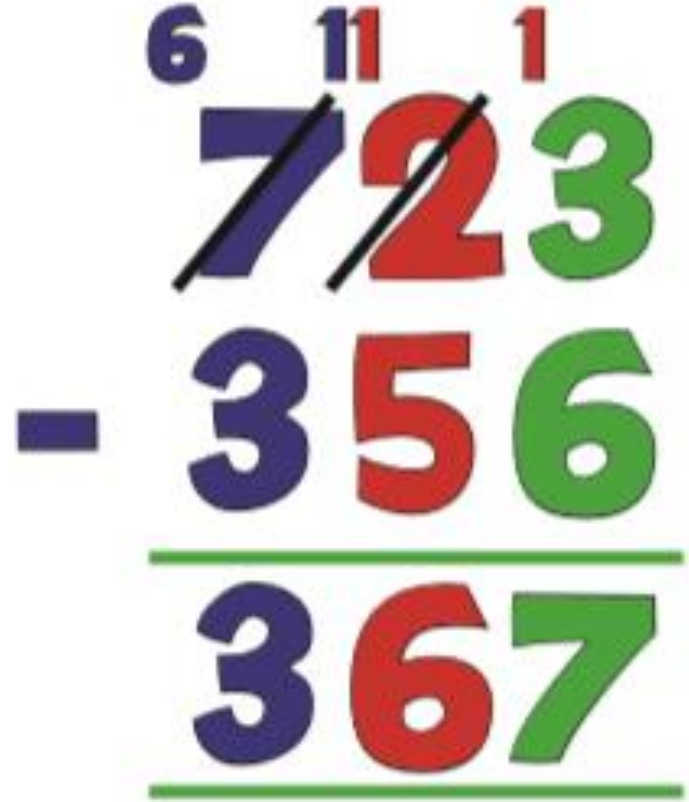
S10a: Expanded Column

Subtraction (100, 10, 1s)

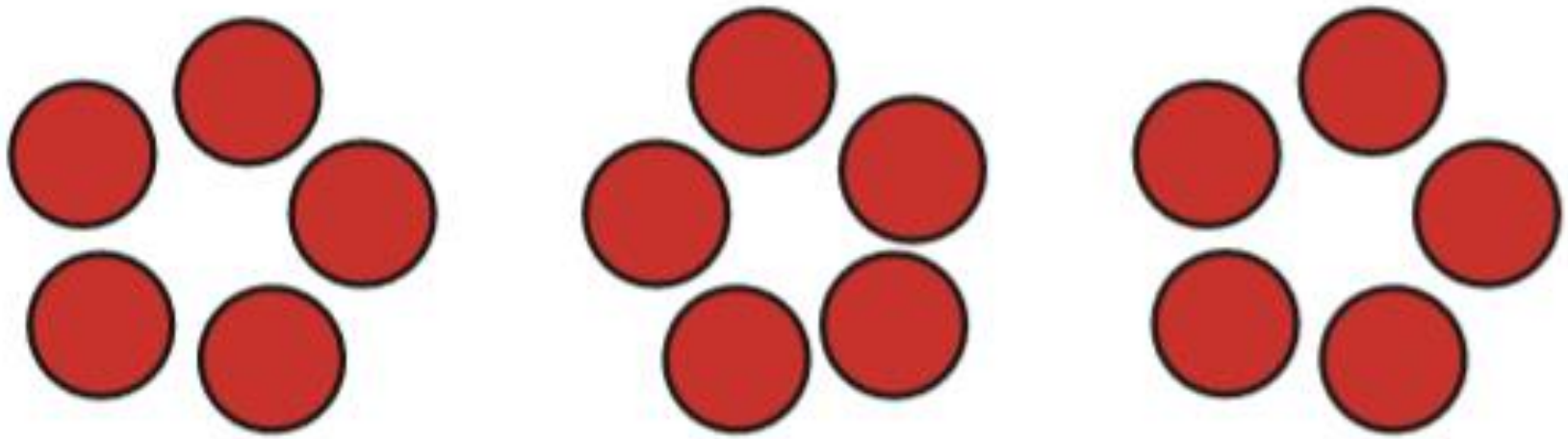
723 - 356 = 367

	600	110	1
	~~700~~	~~20~~	3
-	300	50	6
	300	60	7

S11: Column Subtraction



M1: Repeated Addition
(Groups)



5 x 3 = 5 + 5 + 5 = 15

"5 multiplied by 3" means "5, 3 times", which gives "3 lots of 5"!

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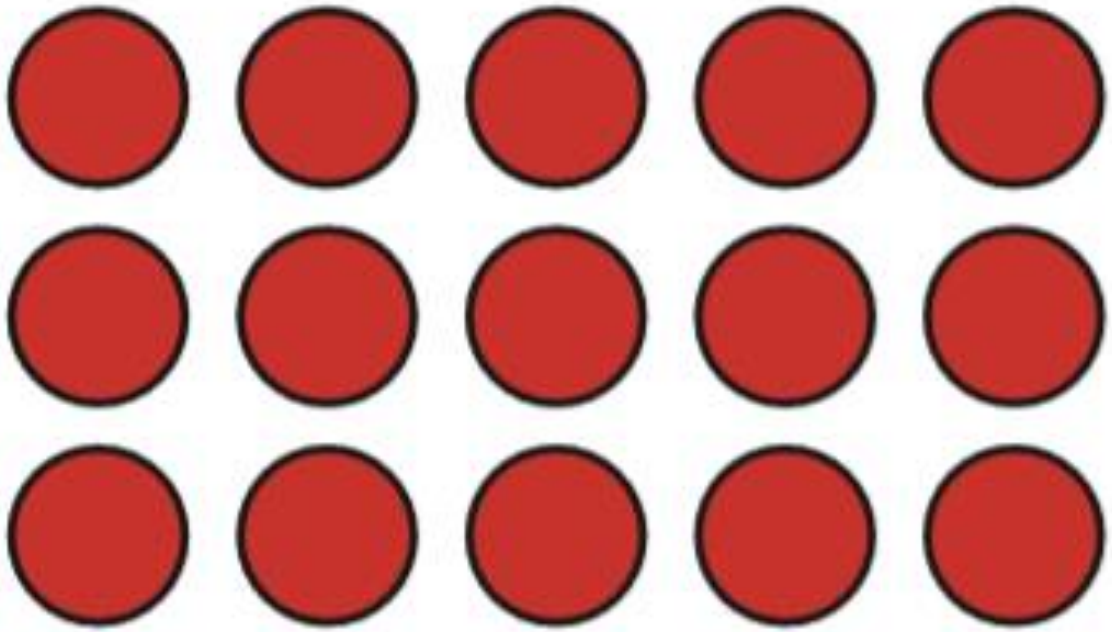
M3: Arrays



3 x 5 = 15 or 5 x 3 = 15

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M6: Column Multiplication

$$
\begin{array}{r}
147 \\
\times \quad 4 \\
\hline
588 \\
\hline
\end{array}
$$

1 2

M8: Long Multiplication

Column

$$
\begin{array}{rr}
 & 43 \\
\times & 65 \\
\hline
 & 215 \\
+ & 2580 \\
\hline
 & 2795
\end{array}
$$

(5 x 43)

(60 x 43)

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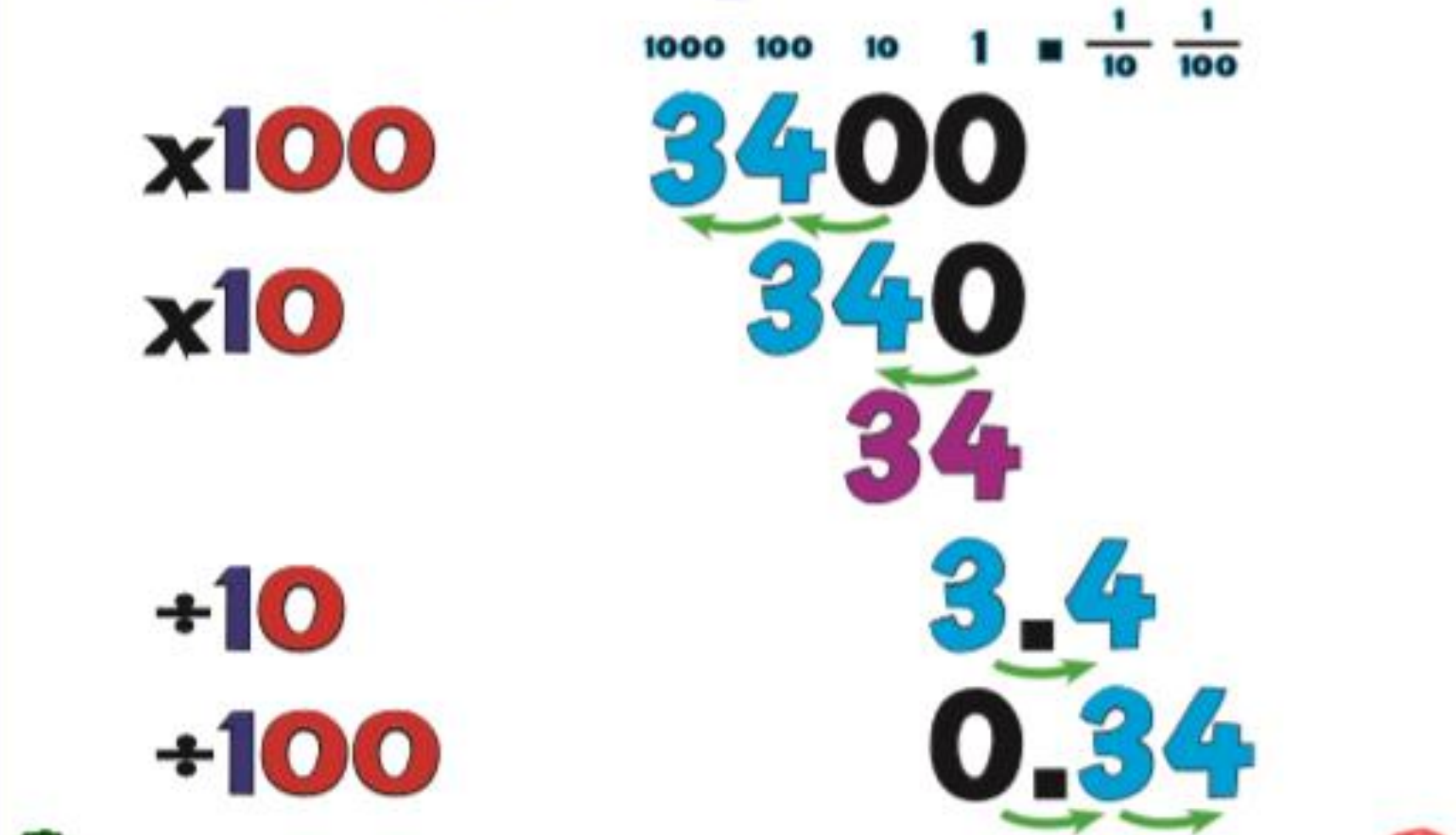
MM1: Jump!



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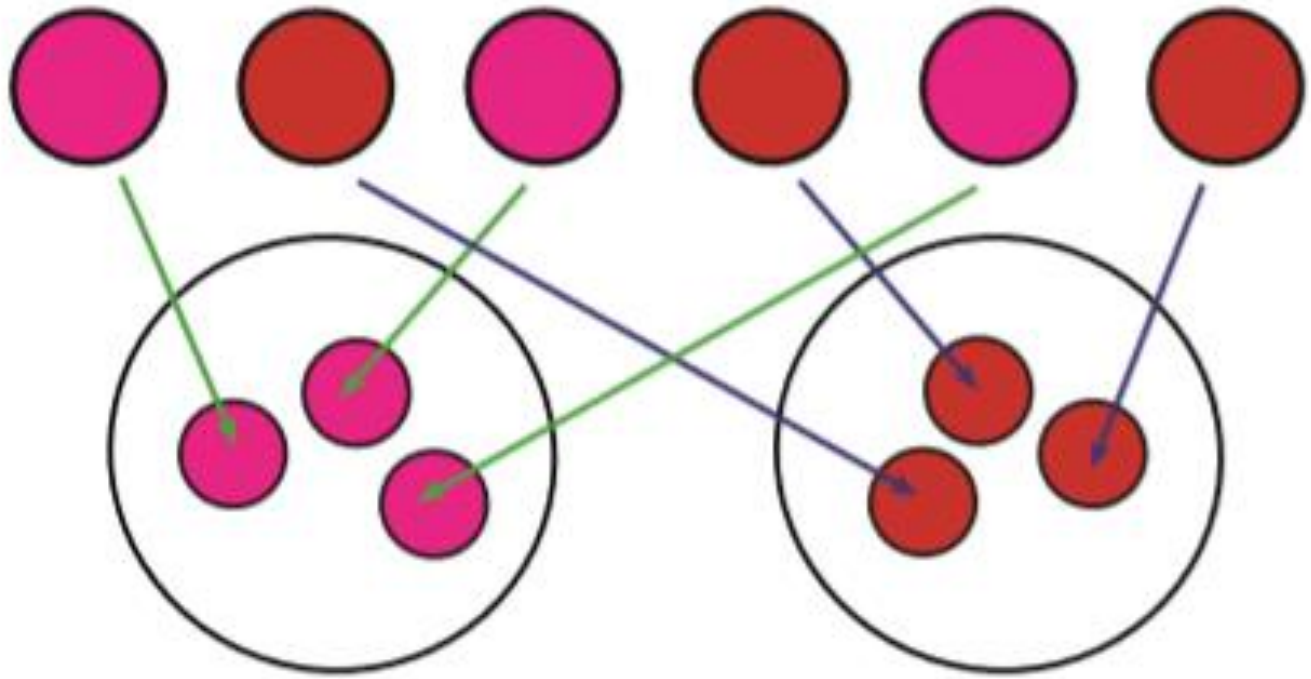
D1: Sharing (Concept)



"If I share 6 into 2 equal amounts, how many in each group?" Answer: 3

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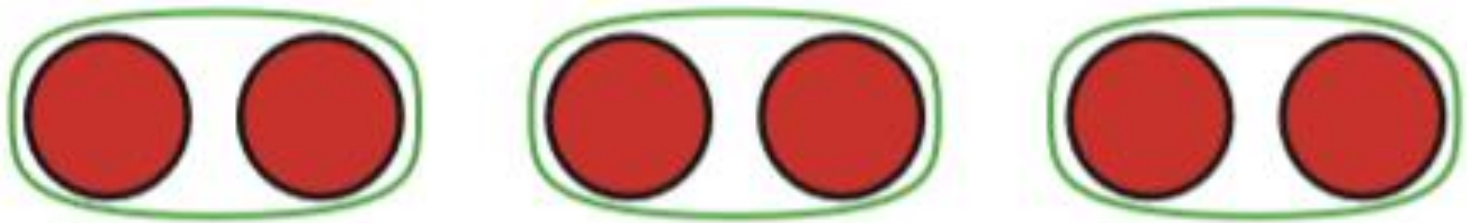
D2: Grouping (Concept)

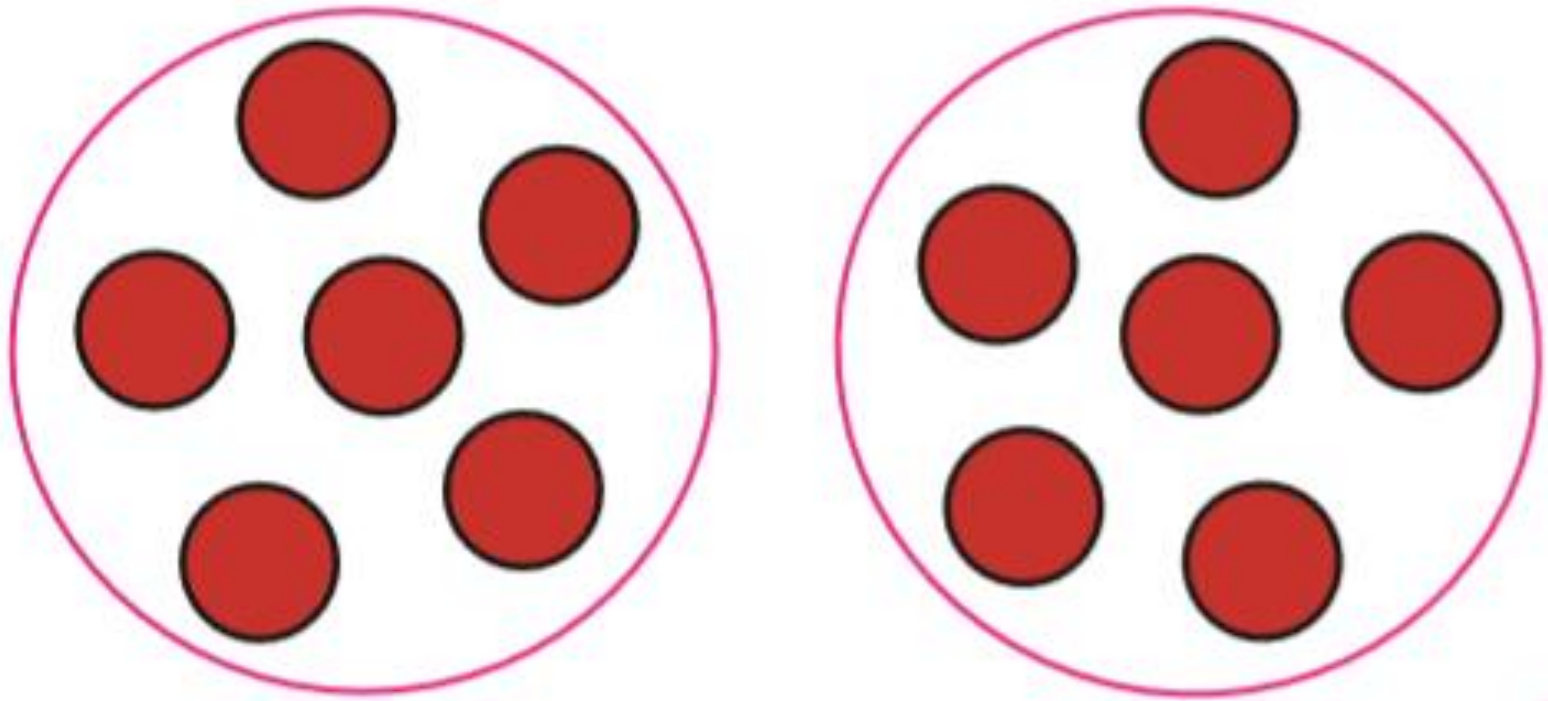


"How many groups of 2 can I make out of 6?
Answer: 3

D3: Division as Sharing

12 ÷ 2 = 6

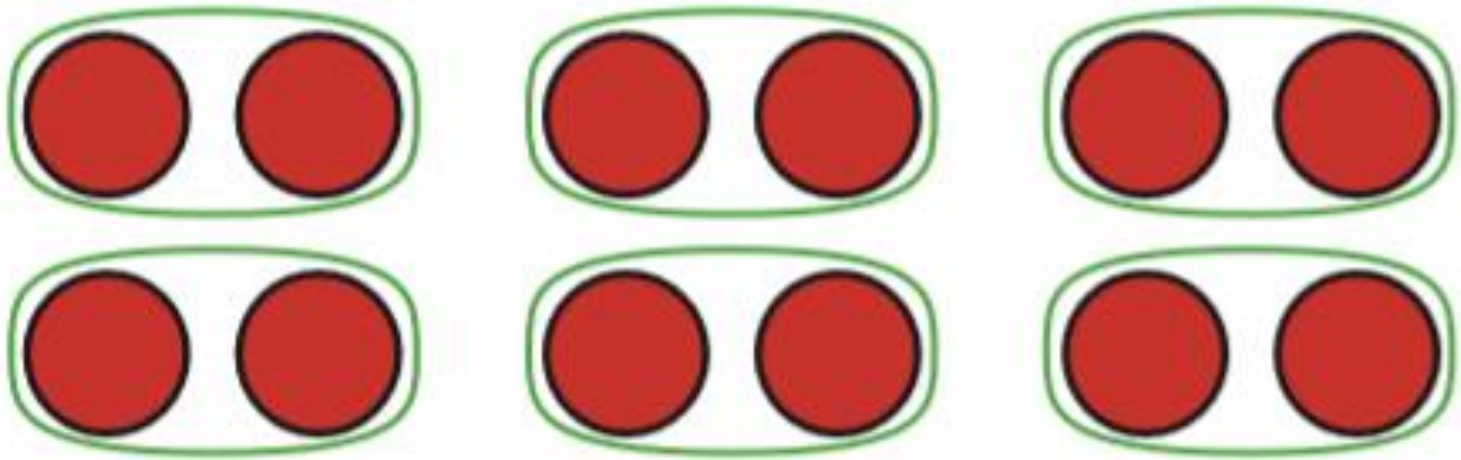
"If I share 12 into 2 equal amounts, how many in each group?" Answer: 6



D4: Division as Grouping

12 ÷ 2 = 6

"How many groups of 2 can I fit into 12?"
Answer: 6



D10: Short Division

$$136 \div 4 = 34$$

$$\begin{array}{r} 34 \\ 4\overline{)136} \end{array}$$

D11: Short division with decimals as remainders

$$
\begin{array}{r}
187.5 \\
2\overline{)\,3^{1}7^{1}5.^{1}0}
\end{array}
$$

375÷2=187.5

D13: Long division (no remainders)

```
     0325
25 | 8125
   - 75         (x3)
     ---
      62
    - 50        (x2)
      ---
      125
    - 125       (x5)
      ---
        0
```

$8125 \div 25 = 325$

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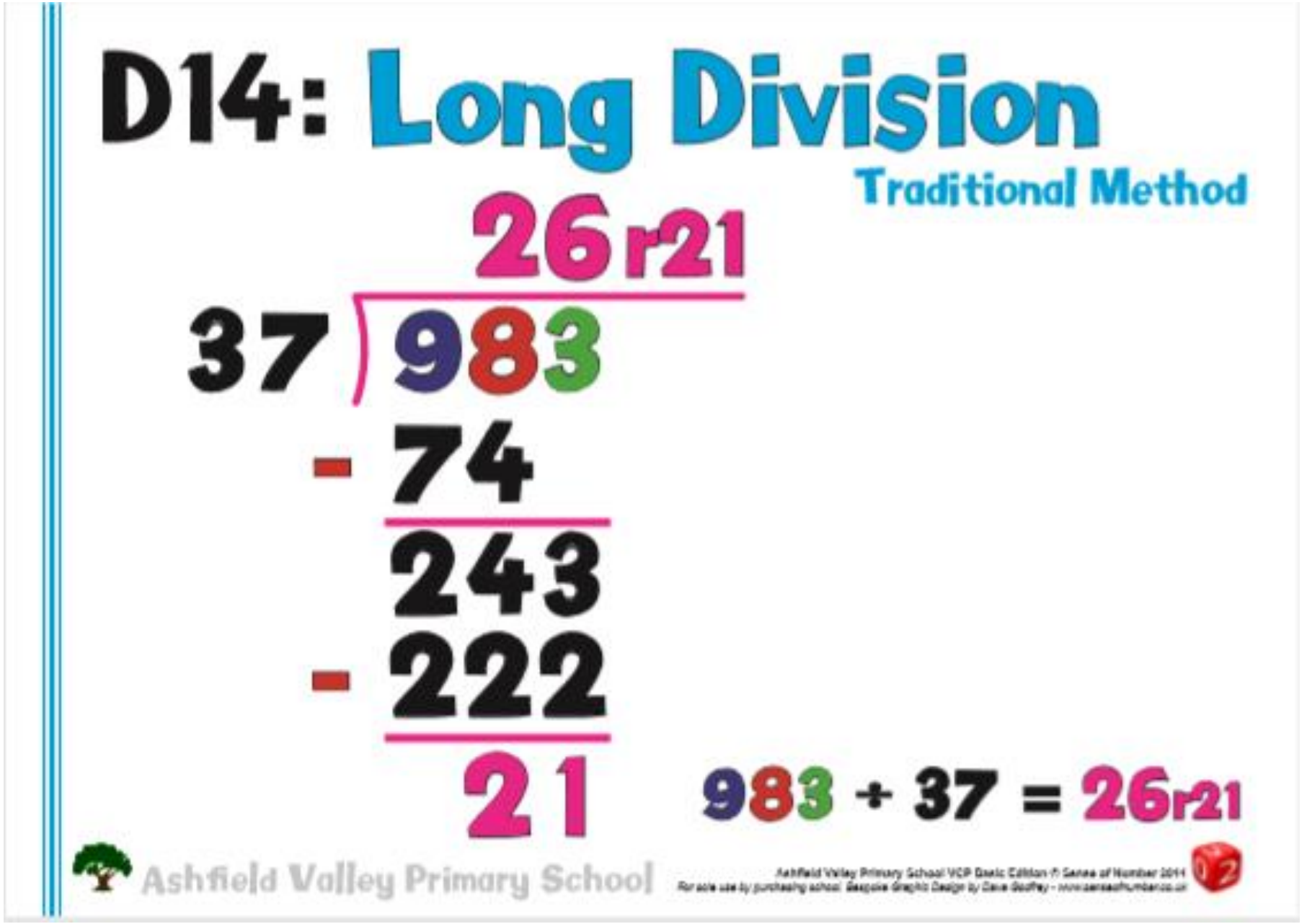
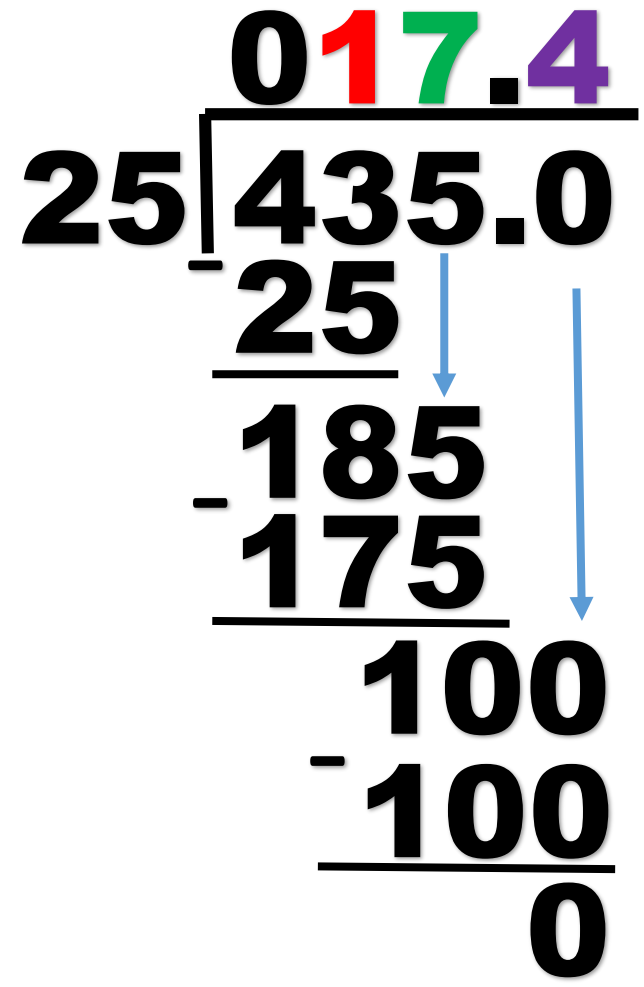
I’m not sure what we said with this one. It might be worth keeping it in because LKS2 might use it .



D15: Long division with decimals as remainders



(x1)

(x7)

(x4)

435÷25=17.4