St Maxentius C.E. Primary School

Bolton & Farnworth C of E Primary Multi Academy Trust

Calculation Policy

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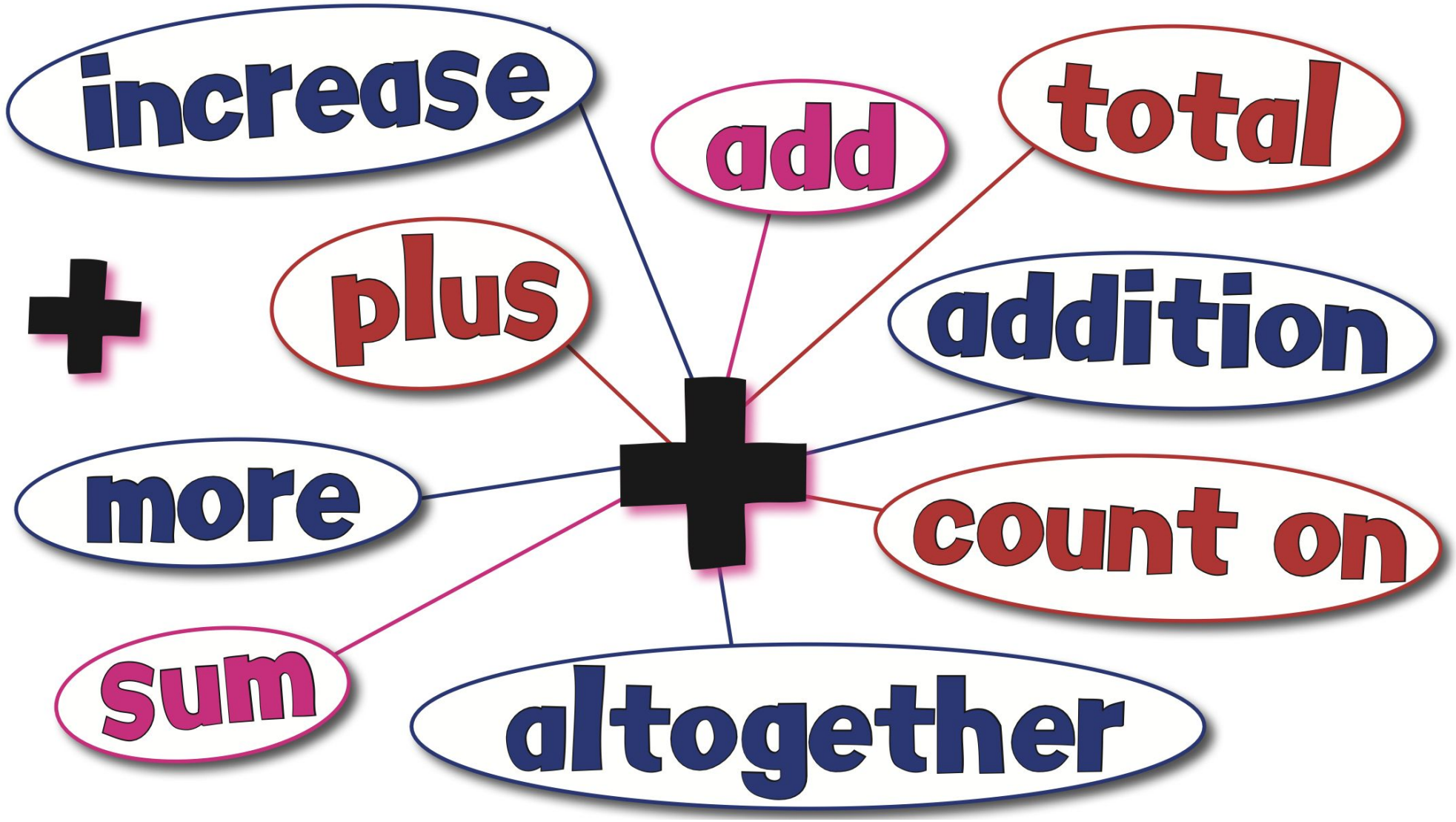
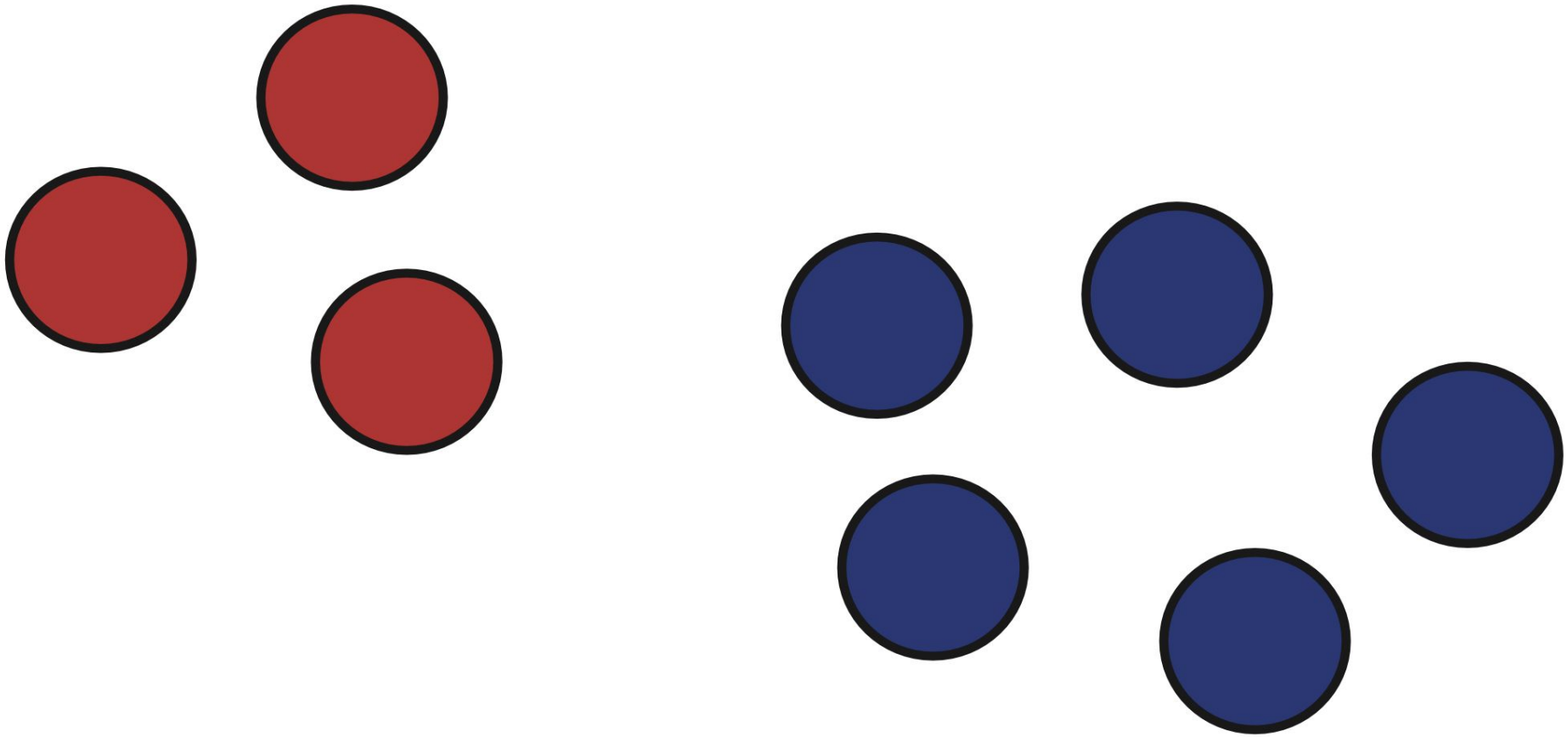
Year 1 - Addition

Addition Vocabulary



A1: Objects & Pictures

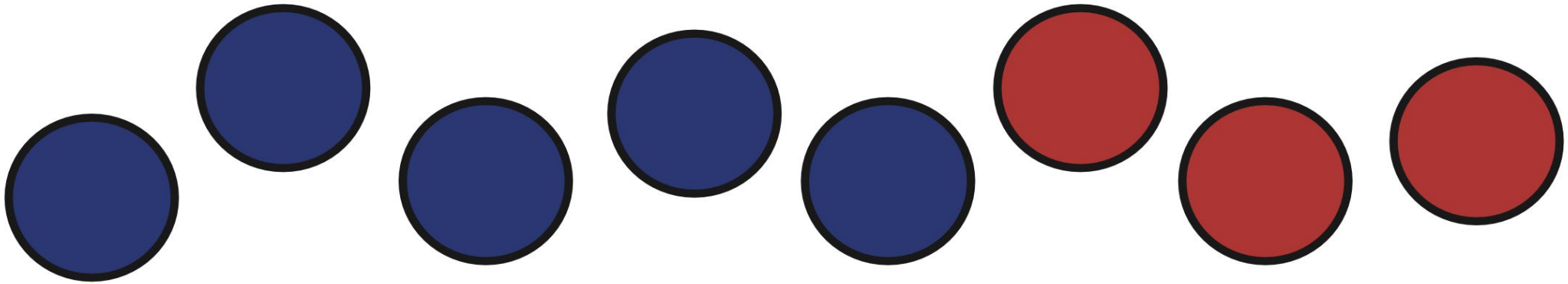
1



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

A1a: Largest Number 1st

1

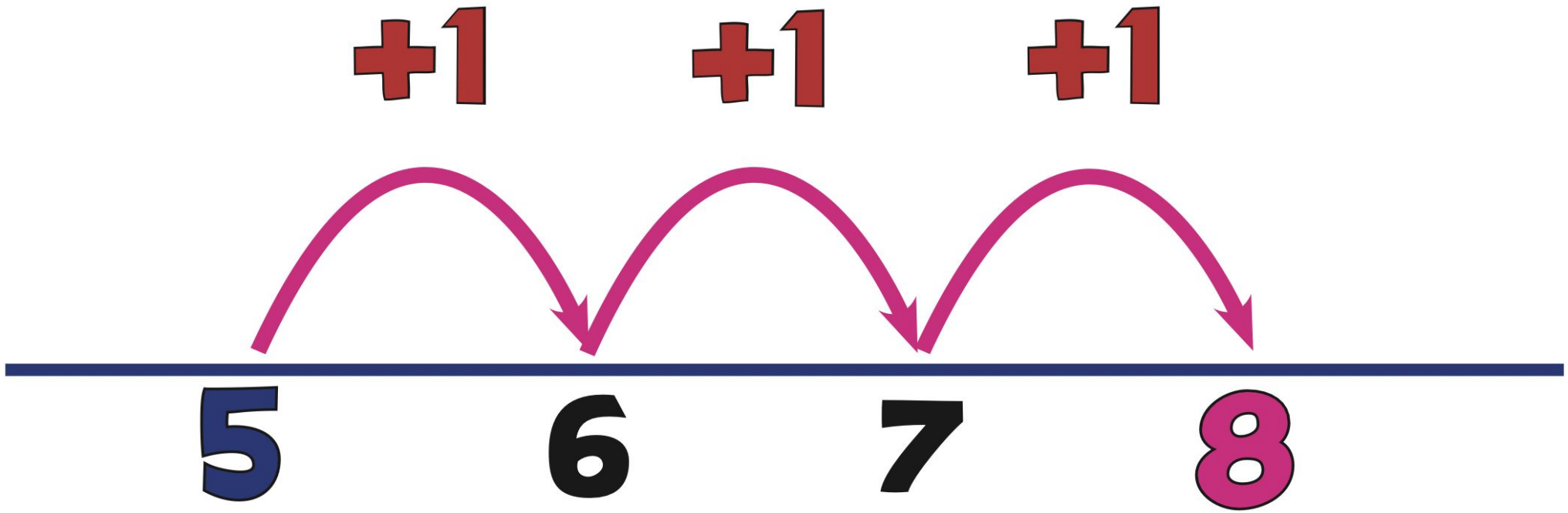


5 + 3 = 8

A2: Counting On

Modelling only

1



$$5 + 3 = 8$$

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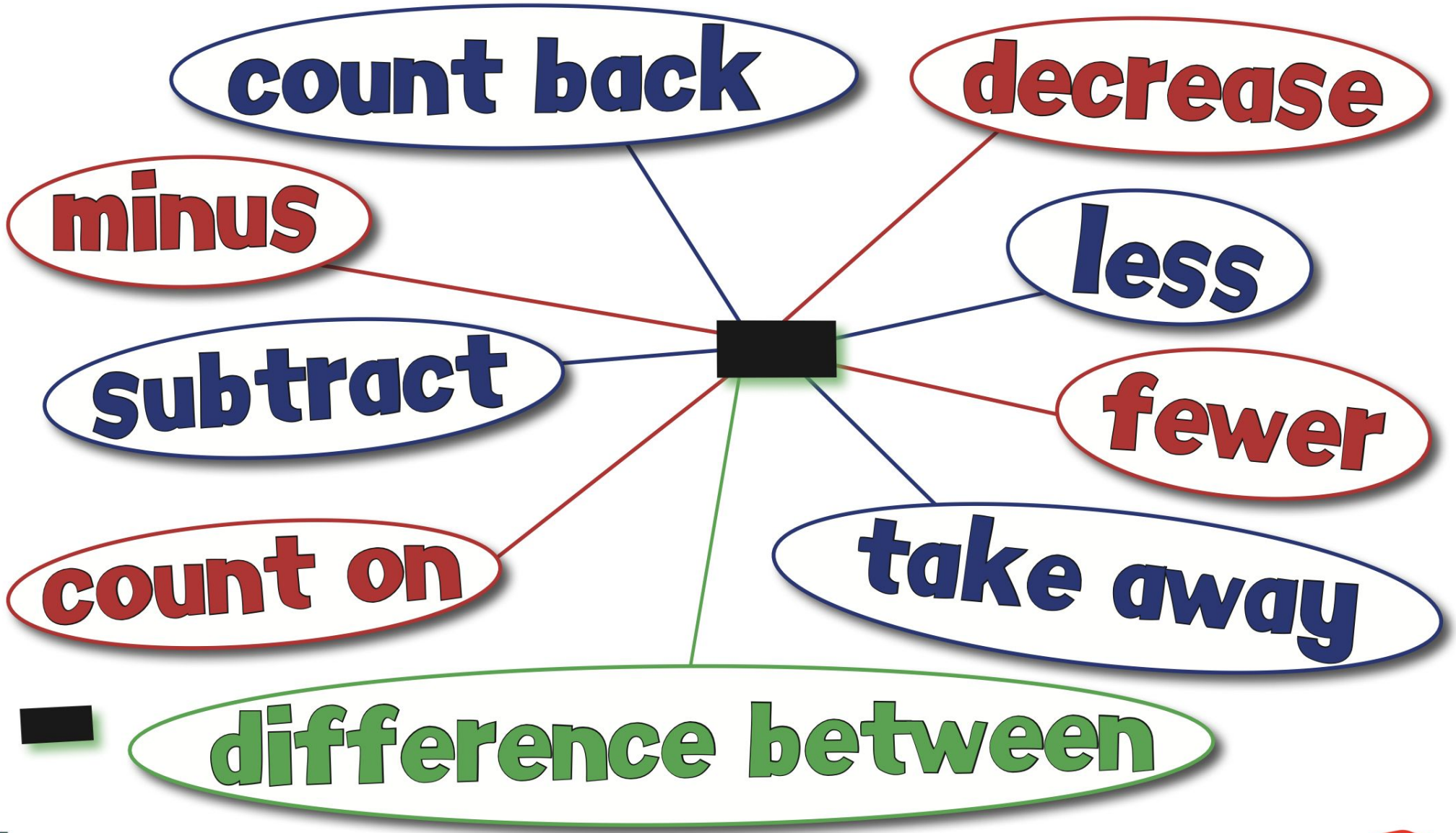
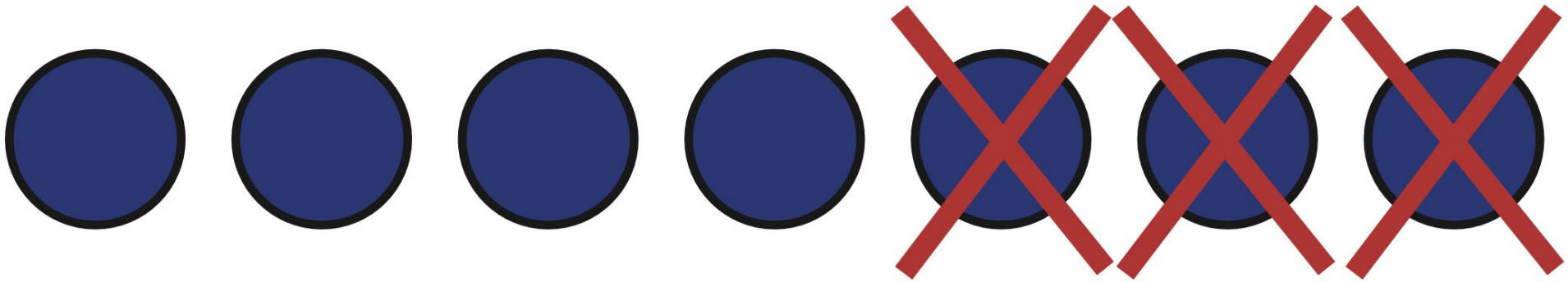
Year 1 - Subtraction

Subtraction Vocabulary



S1: Objects & Pictures

1



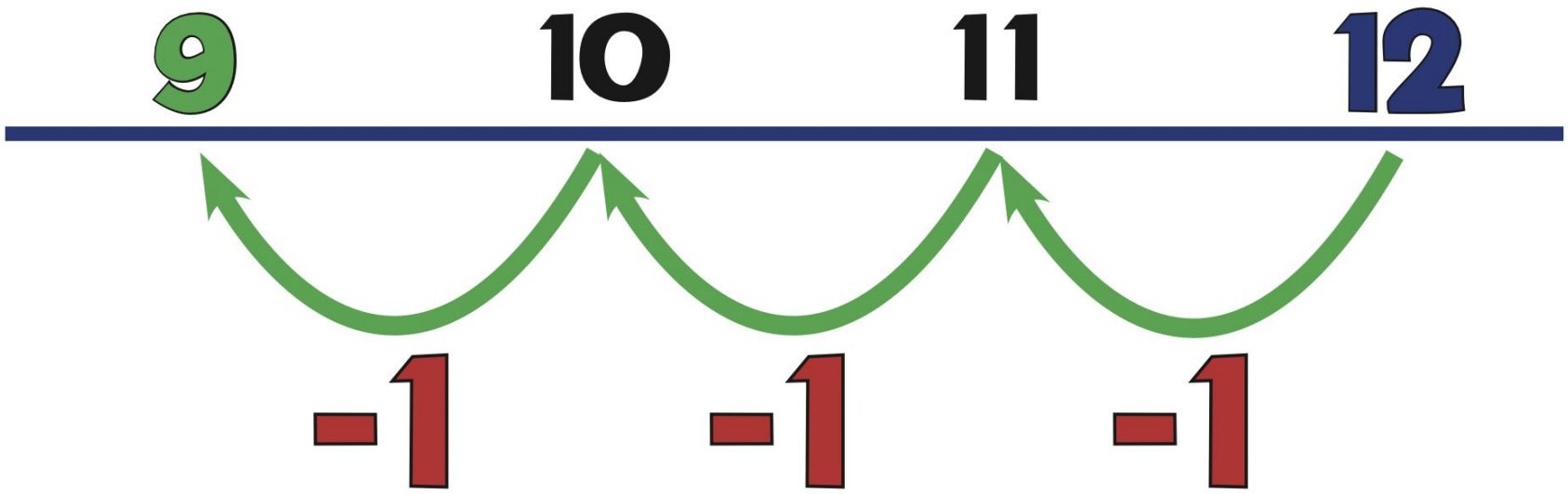
7 - 3 = 4

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

Modelling only

S3: Counting Back

1



12 - 3 = 9

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

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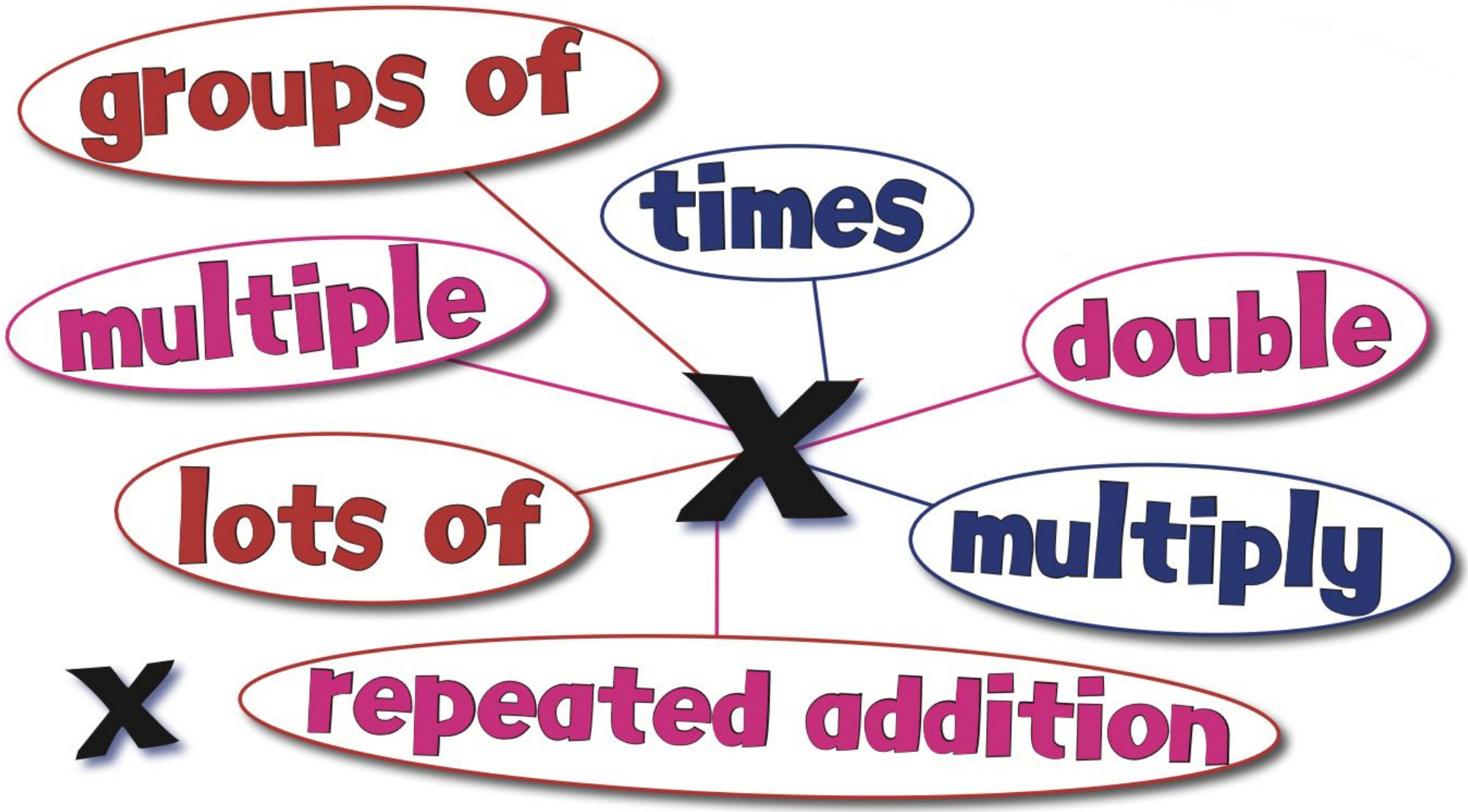
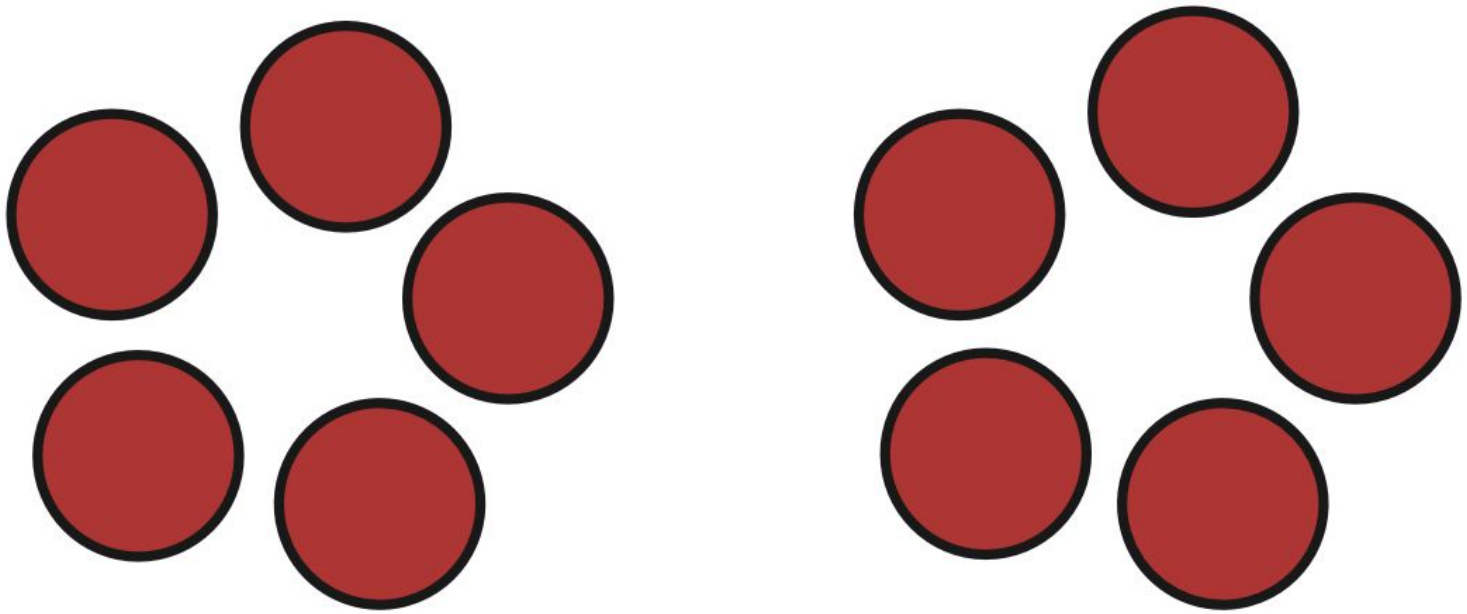
Year 1 - Multiplication

Multiplication Vocabulary



(M1: Groups)

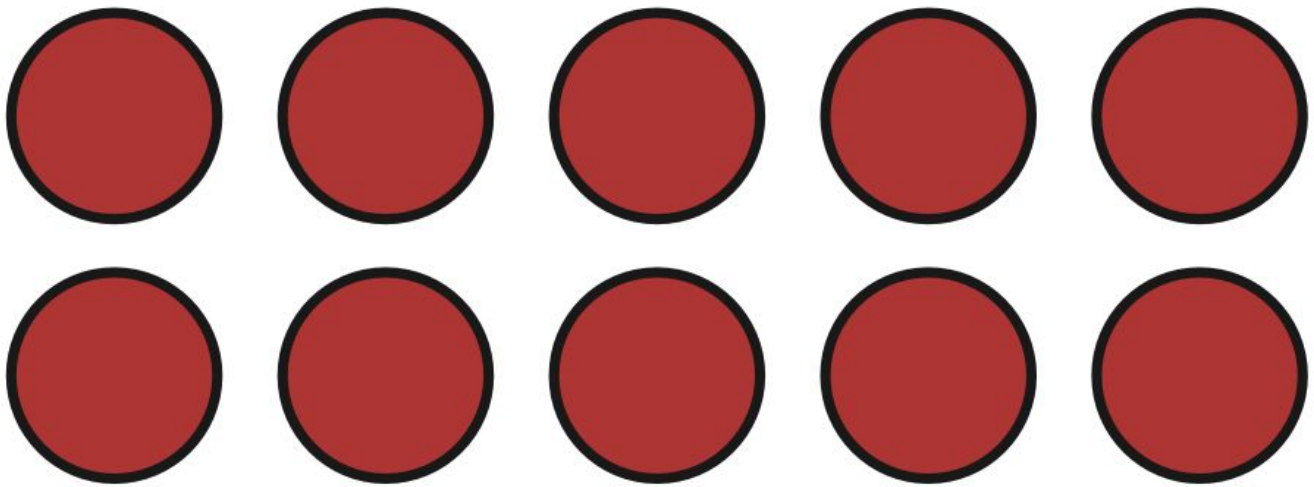
1



"2 groups of 5 counters makes 10 counters altogether"

(M3: Arrays)

1



"2 groups of 5 counters" or "5 groups of 2 counters" - "10 counters altogether"

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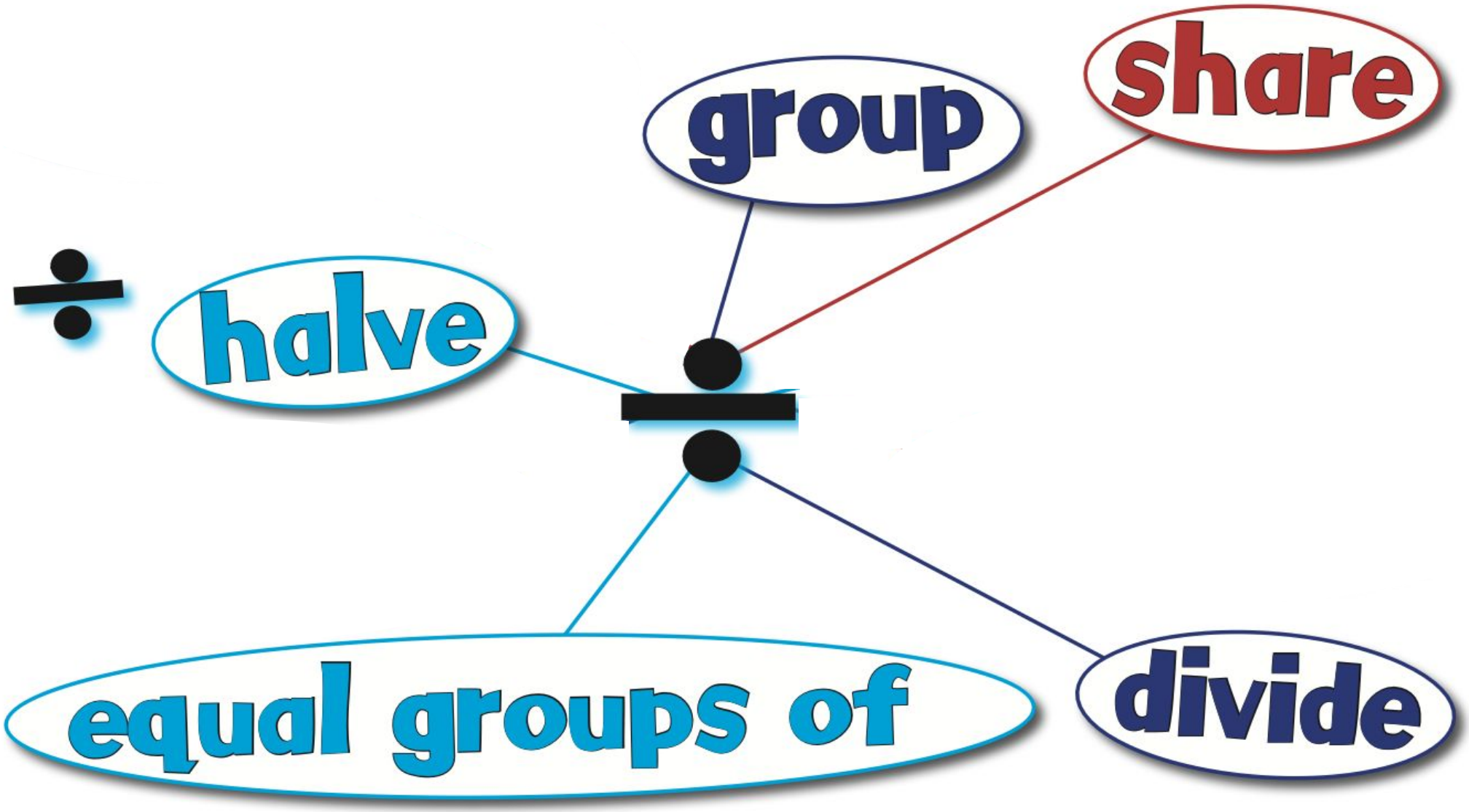
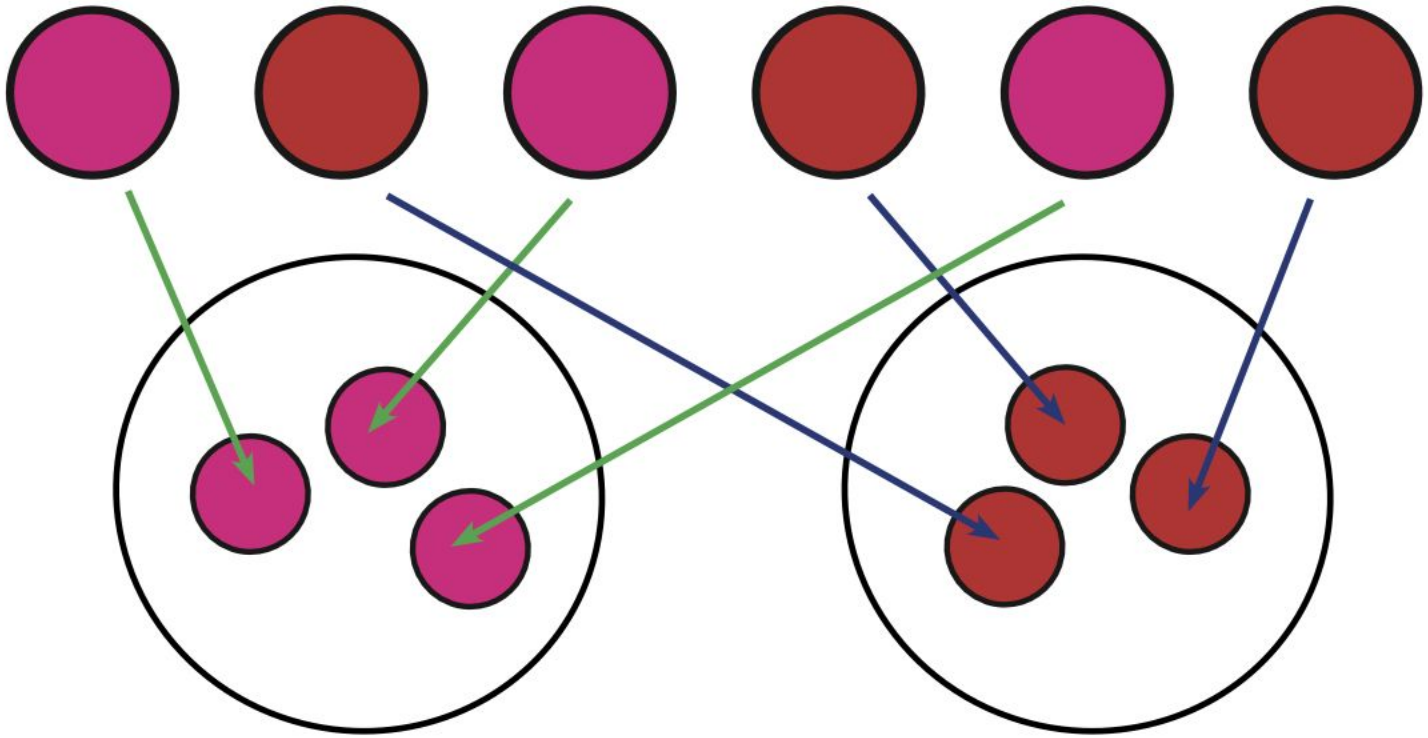
Year 1 - Division

Division Vocabulary



D1: Sharing (Concept)

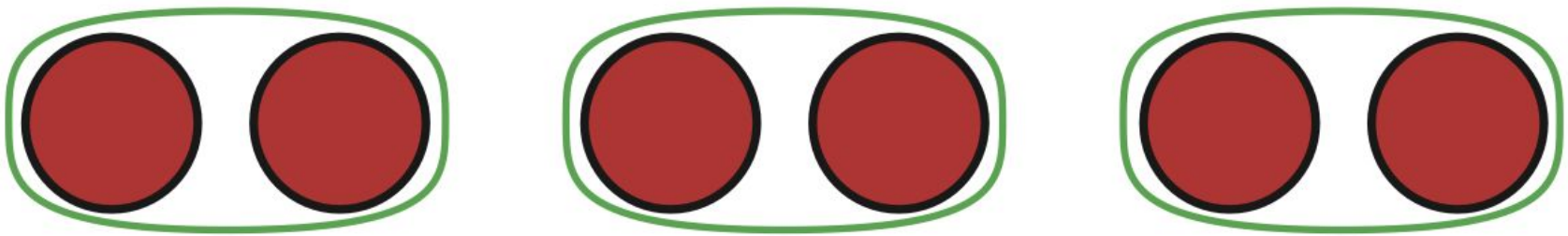
1



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

D2: Grouping (Concept)

1



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

Answer: 3

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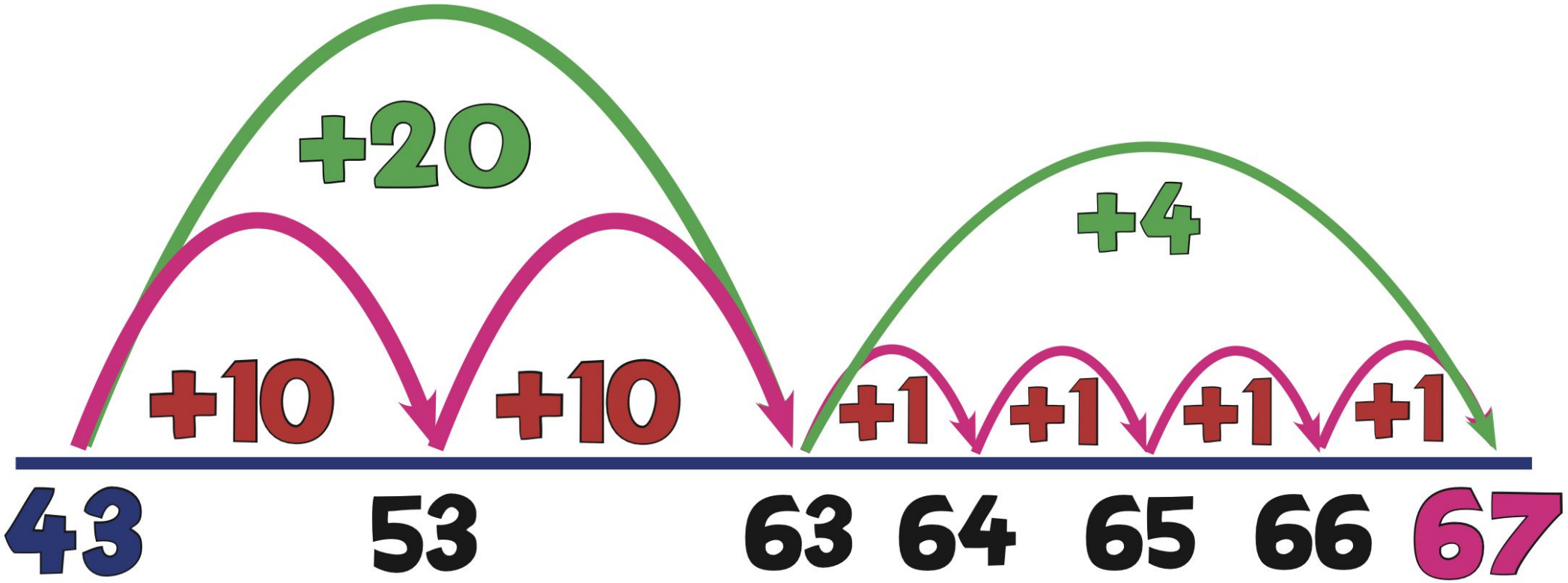
Year 2 - Addition

A3: Forwards Jump

MODELLING ONLY

2

43 + 24 = 67

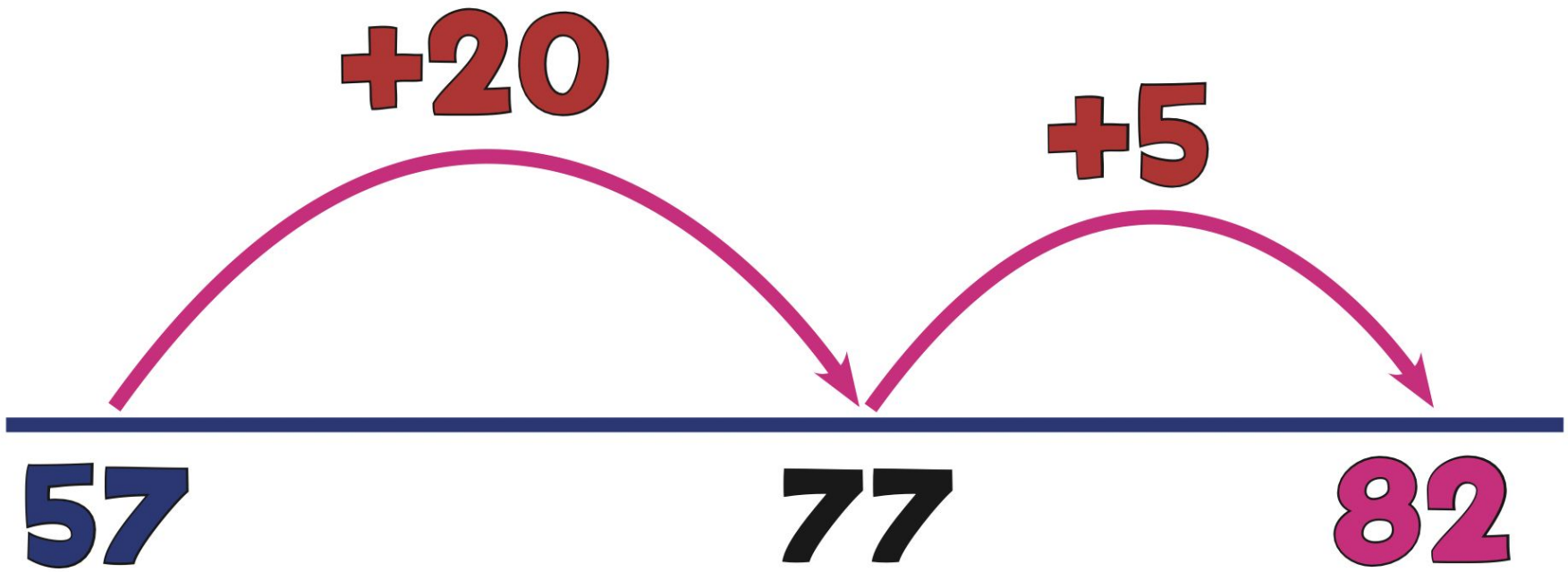


A3a: Forwards Jump

MODELLING ONLY

2

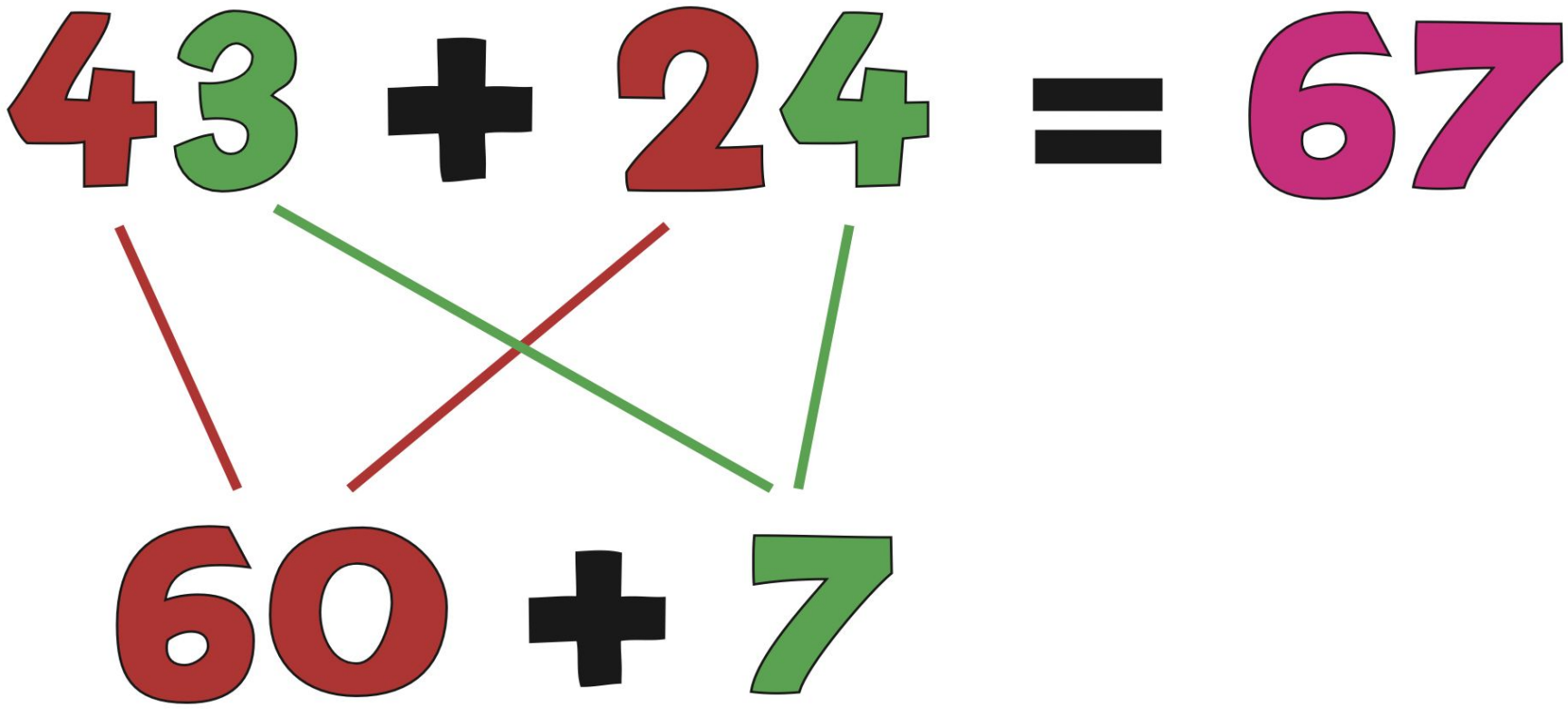
$$57 + 25 = 82$$



A5: Partition Jot

2

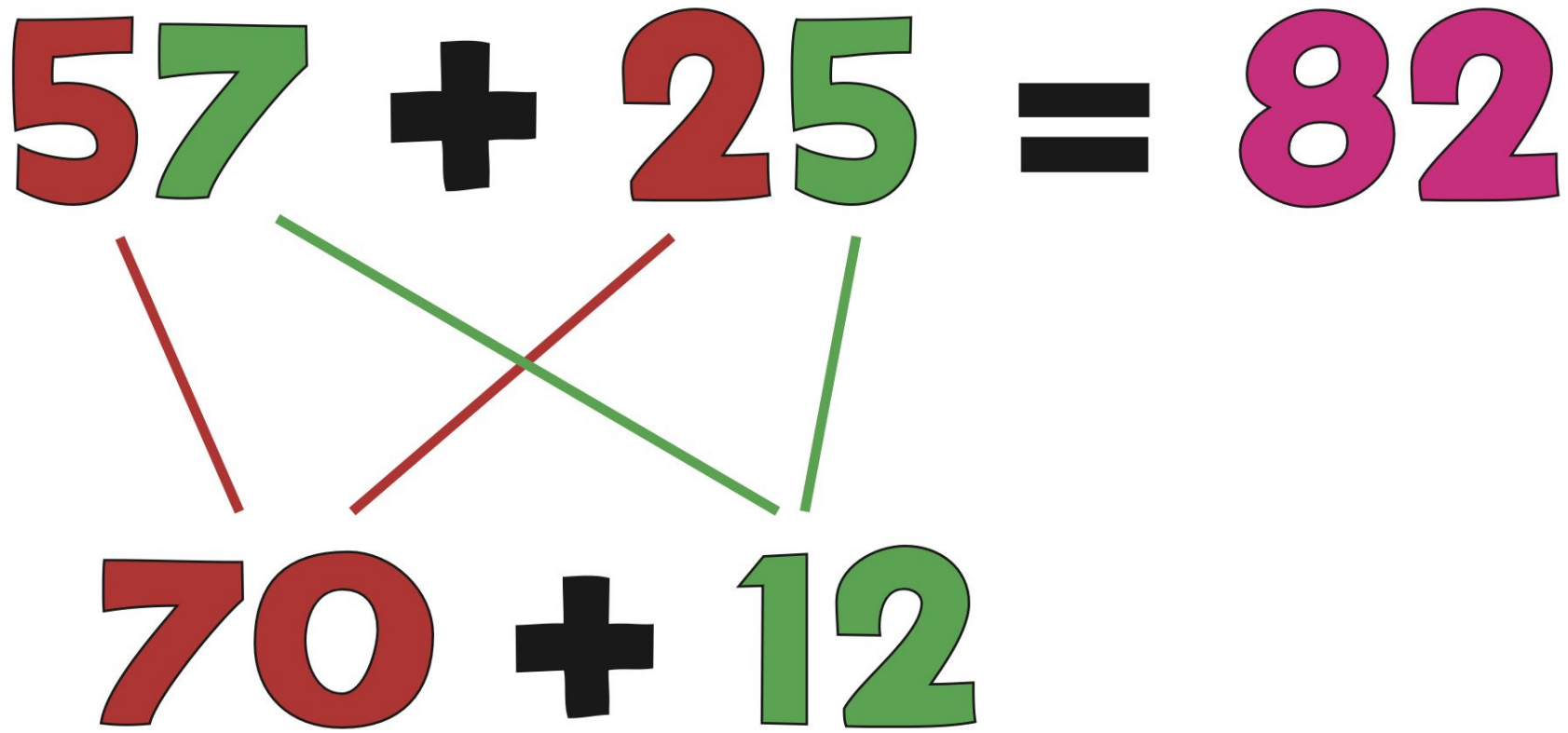
Modelling only



A5a: Partition Jot

MODELLING ONLY

2



A4: Partitioning 2

$$43 + 24 = 67$$

$$40 + 20 = 60$$

$$3 + 4 = 7$$

$$67$$

A4a: Partitioning 2

$$57 + 25 = 82$$

$$50 + 20 = 70$$

$$7 + 5 = 12$$

$$82$$

(A7: Column Addition)

2 Additional

	10	1
	4	3
+	2	4
	6	7

(A7a: Column Addition)

2 Additional:a

	10	1
	5	7
+	2	5
	8	2
	1	

A7b: Column Addition

2/3

100	10	1
	7	5
+	5	2
1	2	7
1		

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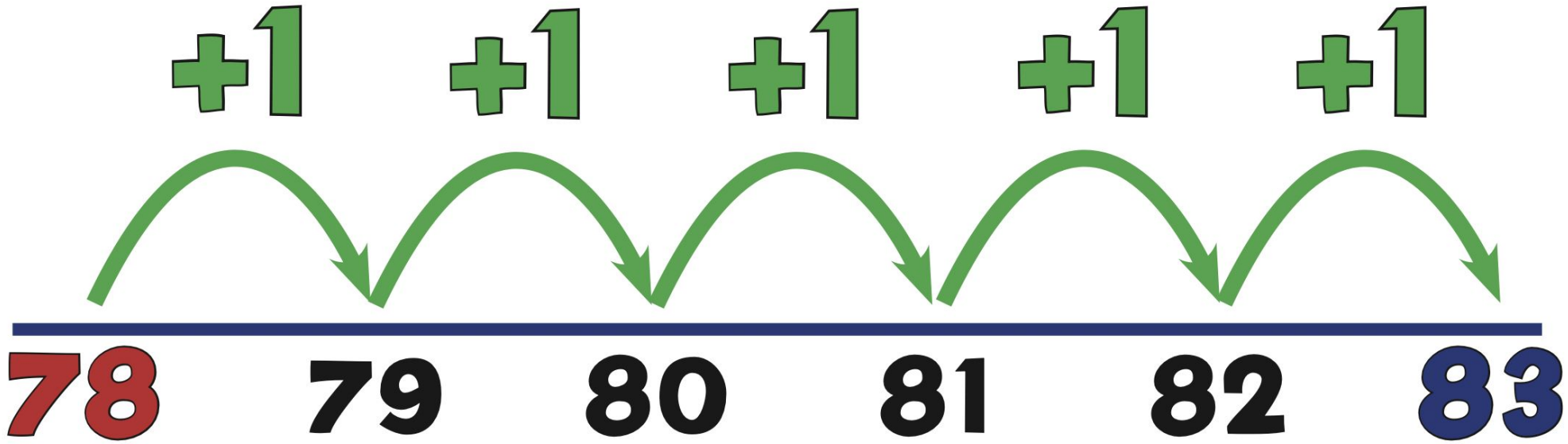
Year 2 - Subtraction

S4a: Counting On

MODELLING ONLY

2



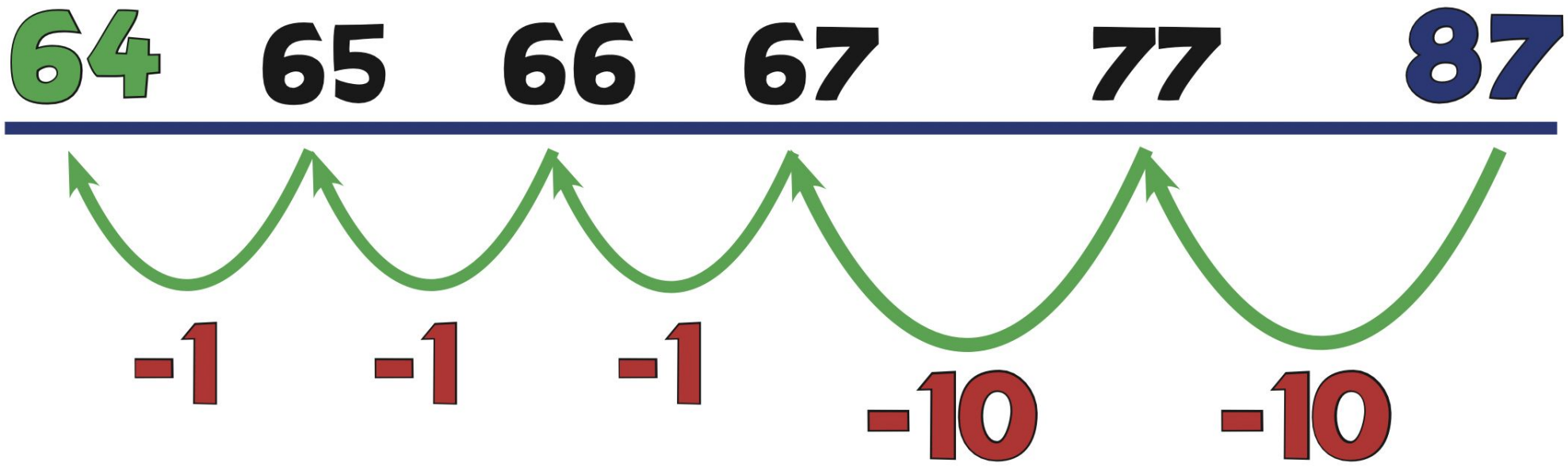
83 - 78 = 5

"How many more is 83 than 78? What is the difference?"

S6: Backwards Bounce

MODELLING ONLY

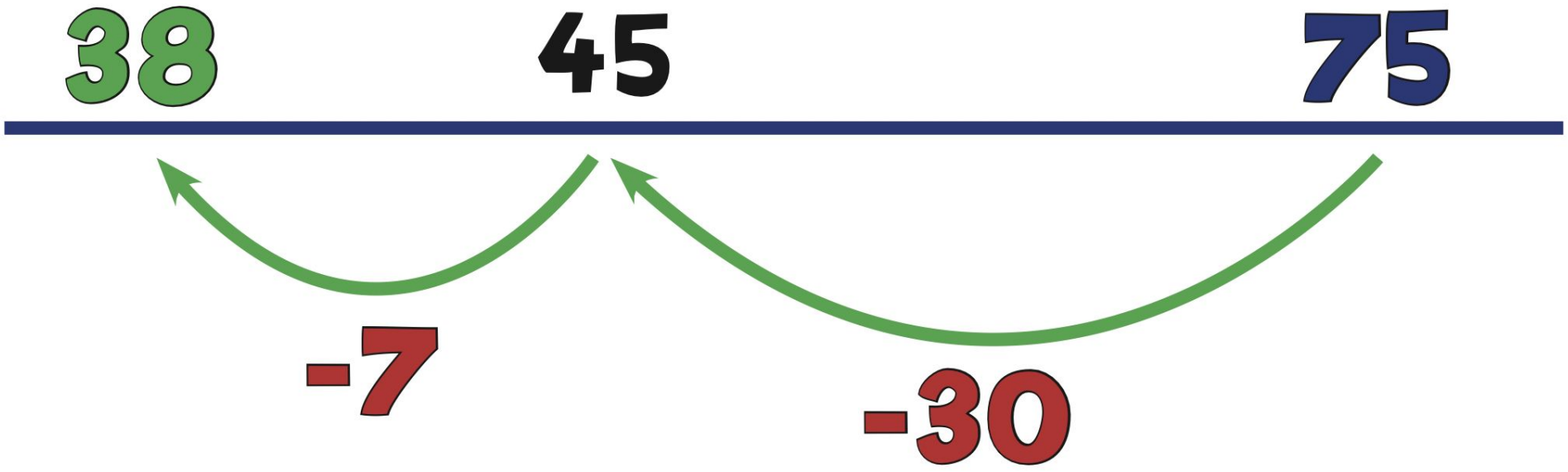
2



87 - 23 = 64

S7: Backwards Jump 2

MODELLING ONLY



75 - 37 = 38

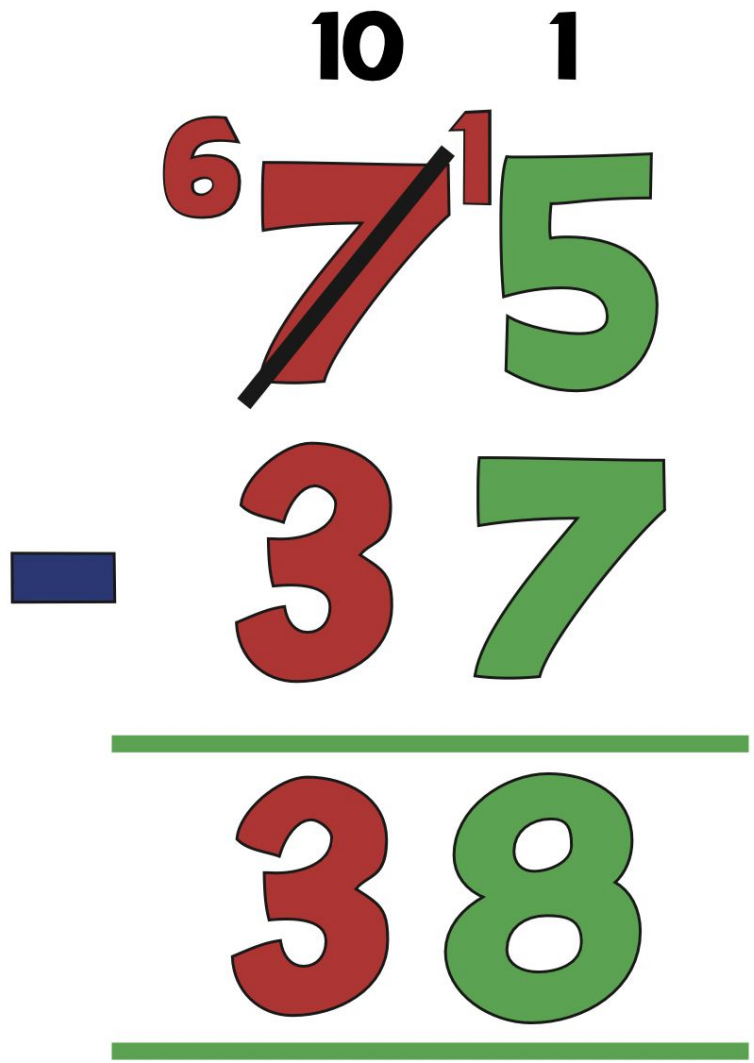
(S11: Column Subtraction)

2 Additional

10	1
8	7
− 2	3
6	4

(S11: Column Subtraction)

2 Additional:a



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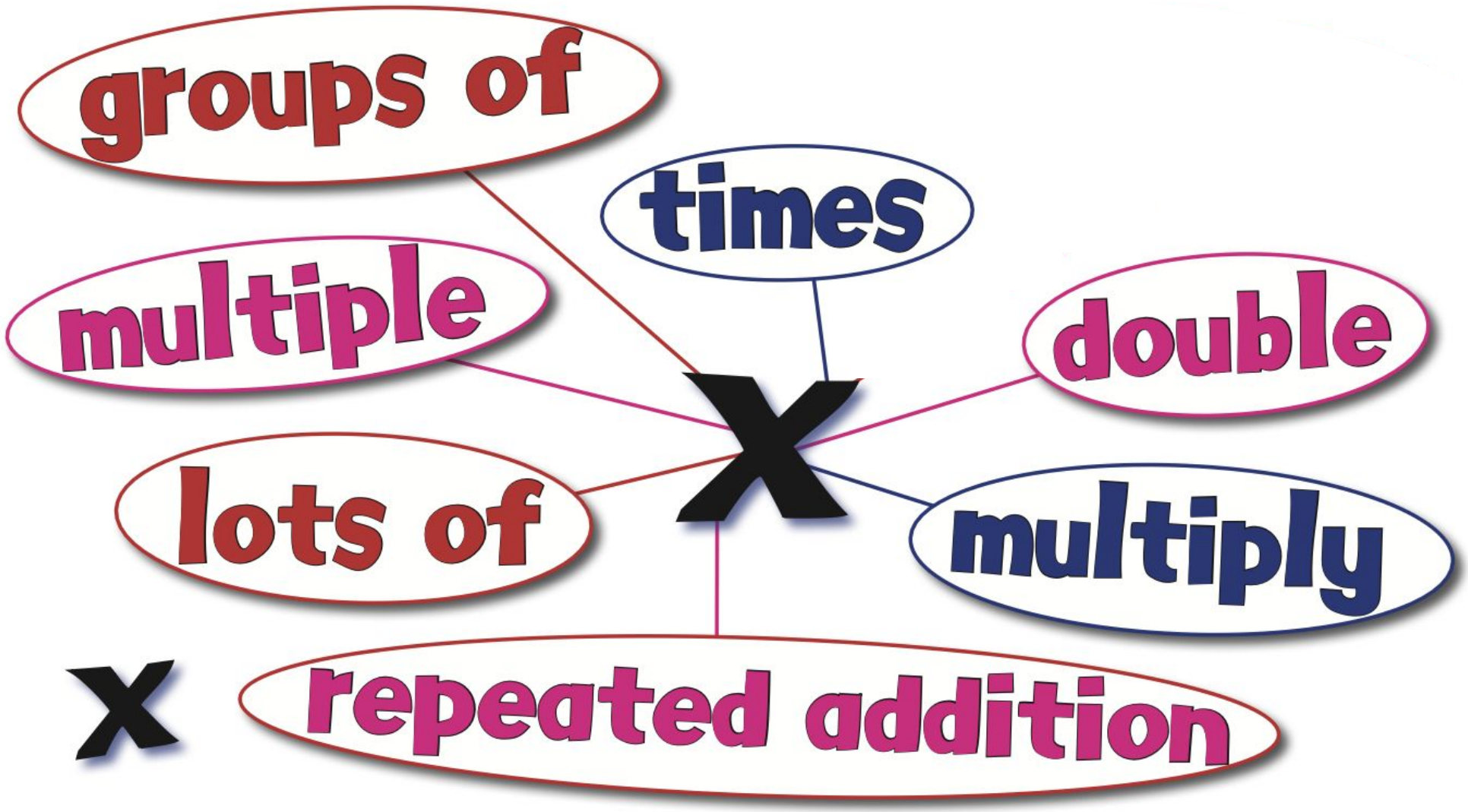
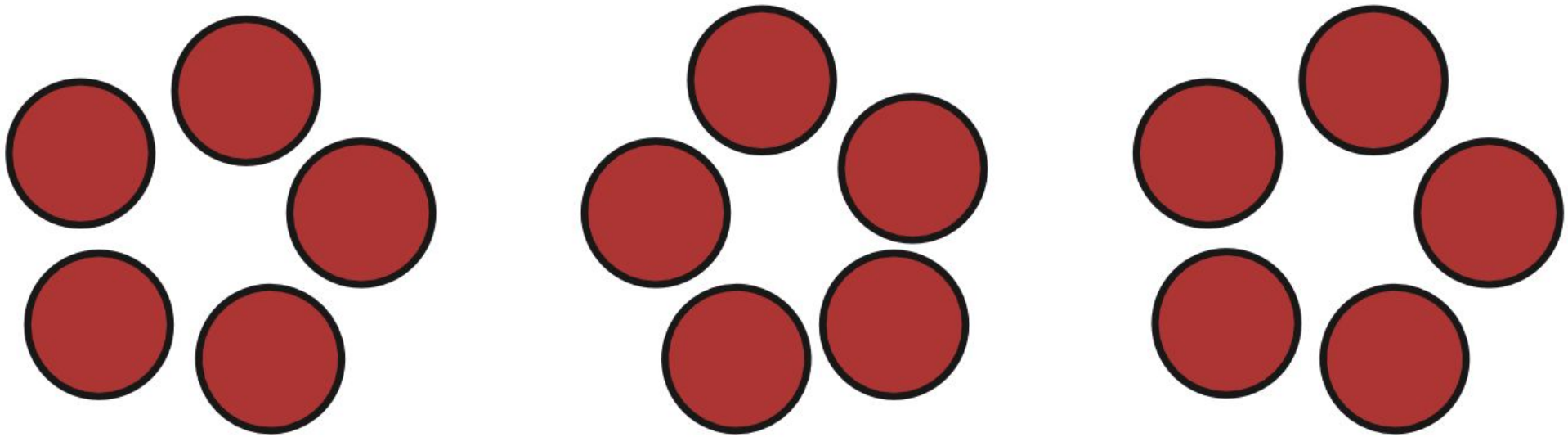
Year 2 - Multiplication

Multiplication Vocabulary



M1: Repeated Addition

2 (Groups)



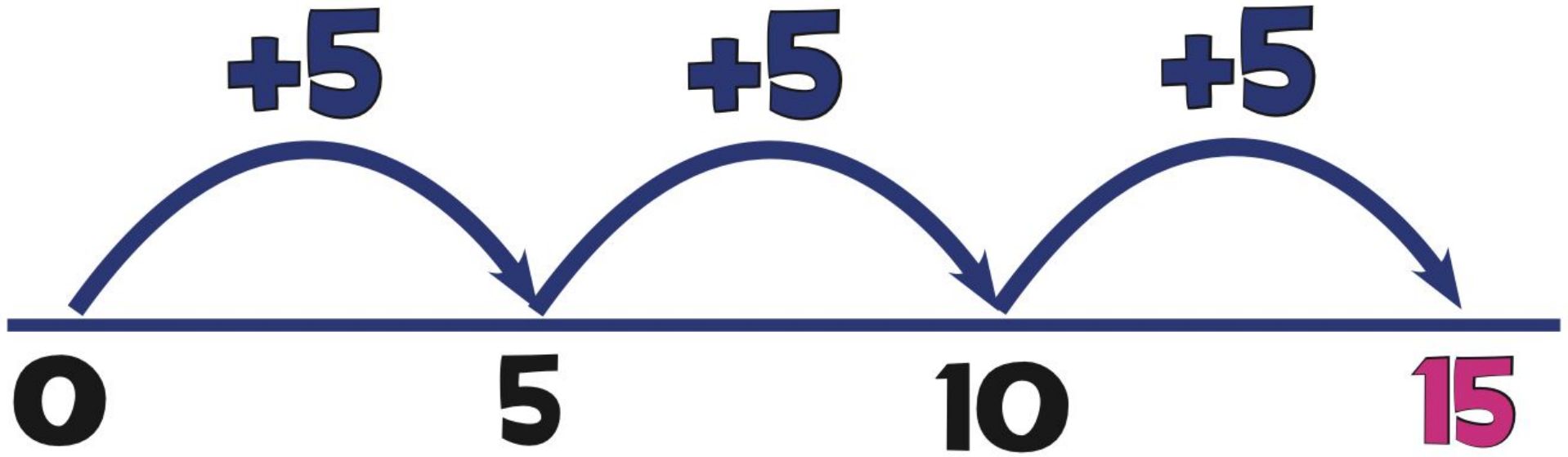
$$5 \times 3 = 5 + 5 + 5 = 15$$

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

MODELLING ONLY

M2: Repeated Addition

2 (Number Line)

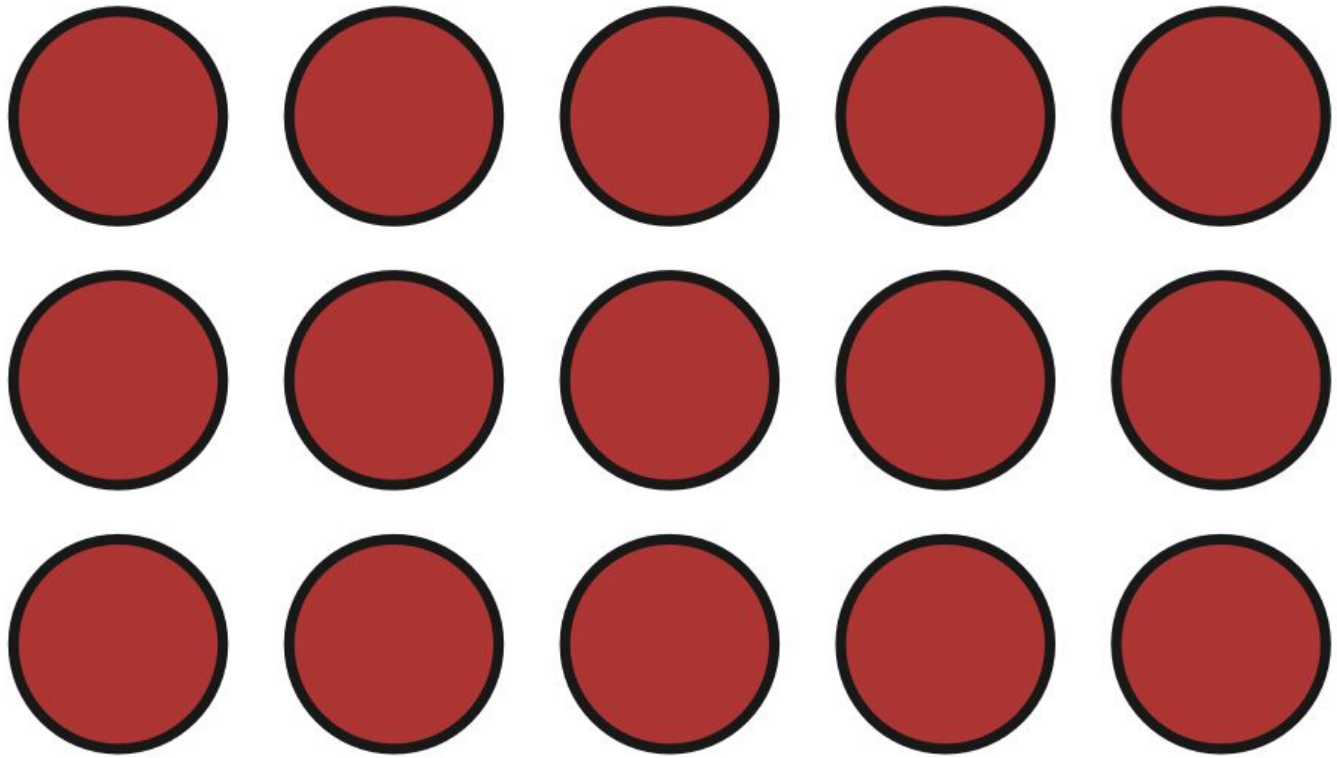


$$5 \times 3 = 5 + 5 + 5 = 15$$

"5 times 3" means "5, 3 times!"

M3: Arrays

2



3 x 5 = 15 or 5 x 3 = 15

M5: Partitioning

3

$$15 \times 5 = 75$$

$$10 \times 5 = 50$$

$$5 \times 5 = 25$$

$$50 + 25 = 75$$

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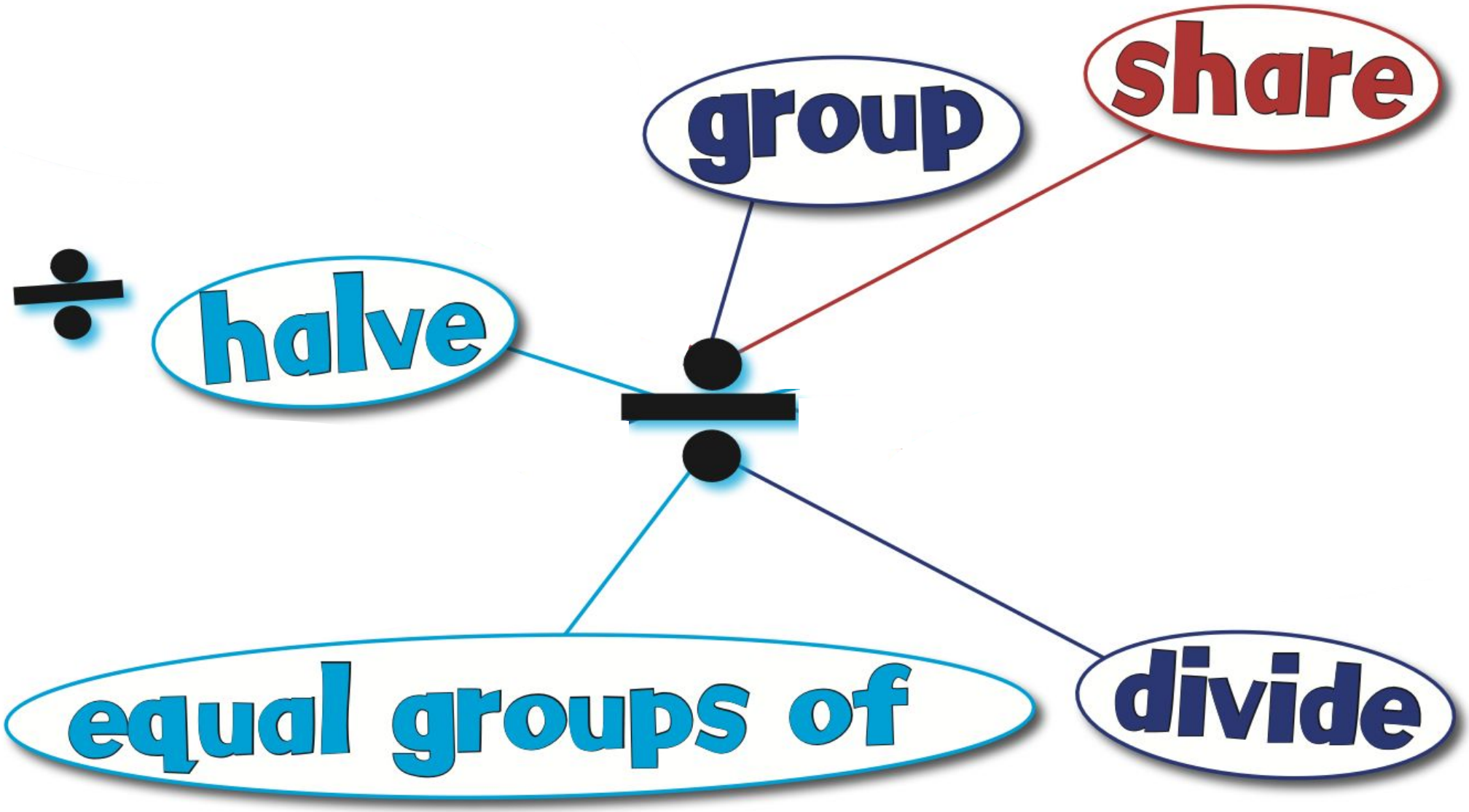
Year 2 - Division

Division Vocabulary

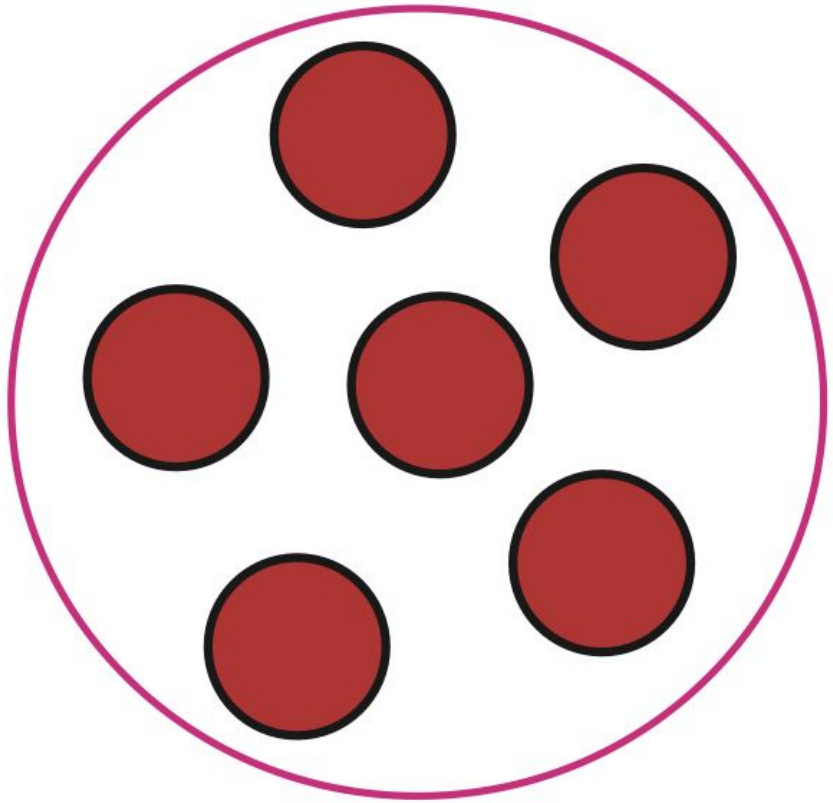


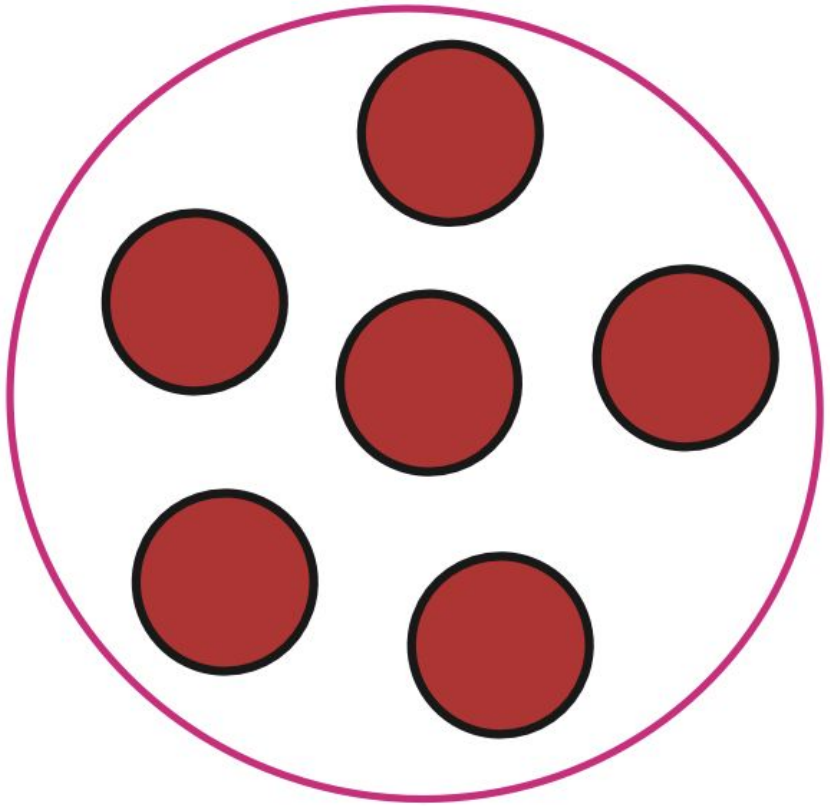
D3: Division as Sharing

2

$$12 \div 2 = 6$$

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



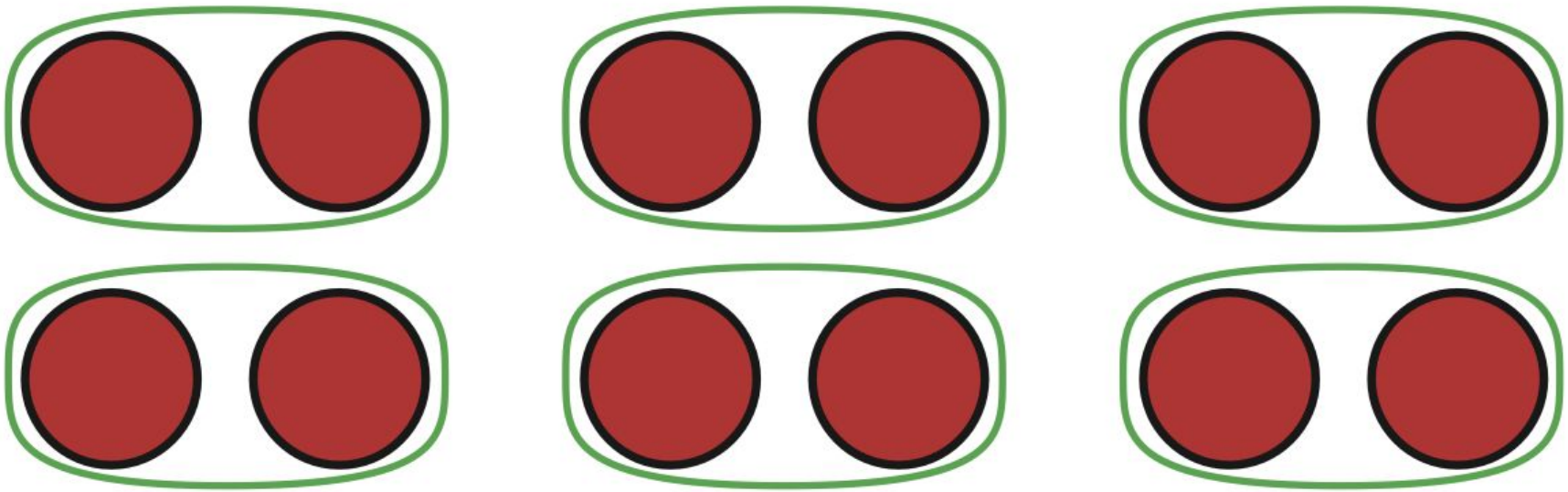


D4: Division as Grouping

2

12 ÷ 2 = 6

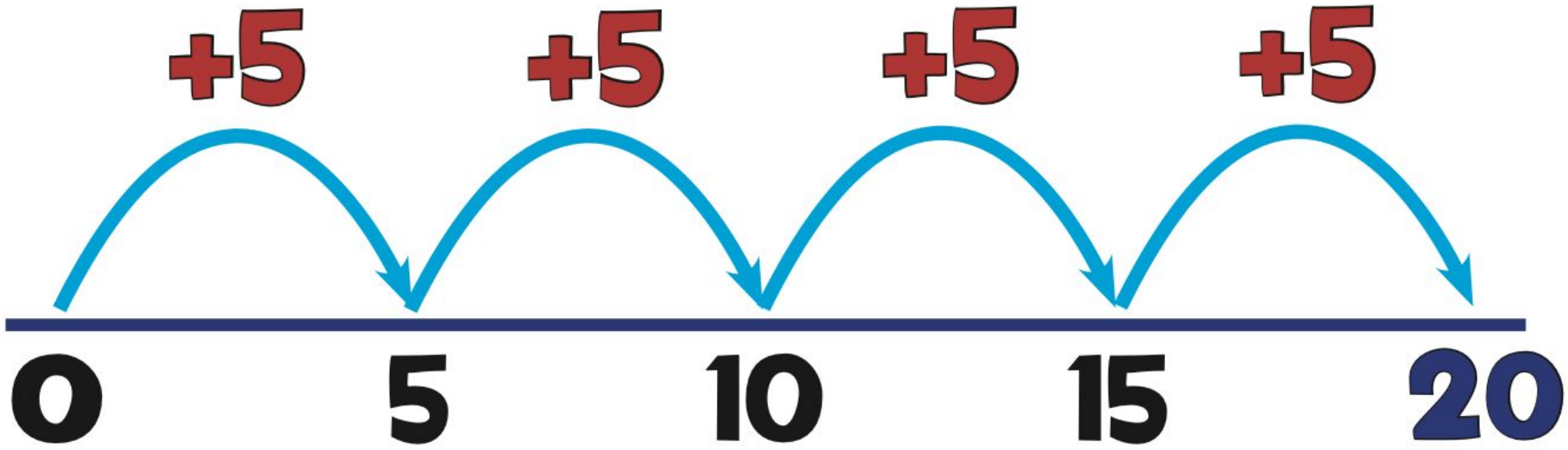
"How many groups of 2 can I fit into 12?"
Answer: 6



MODELLING ONLY

D5: Grouping on a Number Line

2



"How many 5s in 20?"
Answer: 4

$$20 \div 5 = 4$$

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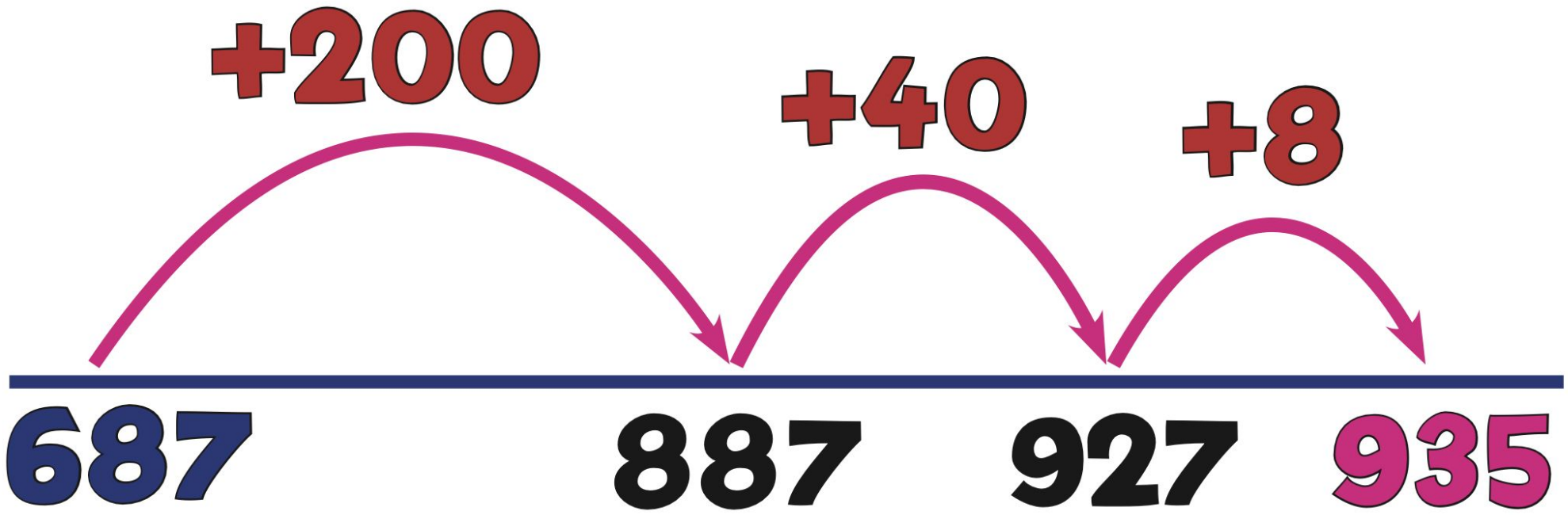
Year 3 - Addition

A3d: Forwards Jump

3

MODELLING ONLY

$$687 + 248 = 935$$



A7d: Column Addition

3

100	10	1
6	8	7
+ 2	4	8
9	3	5
1	1	

A7e: Column Addition

3

100	10	1
7	3	8
+ 5	2	4
1	2	6	2
1		1	

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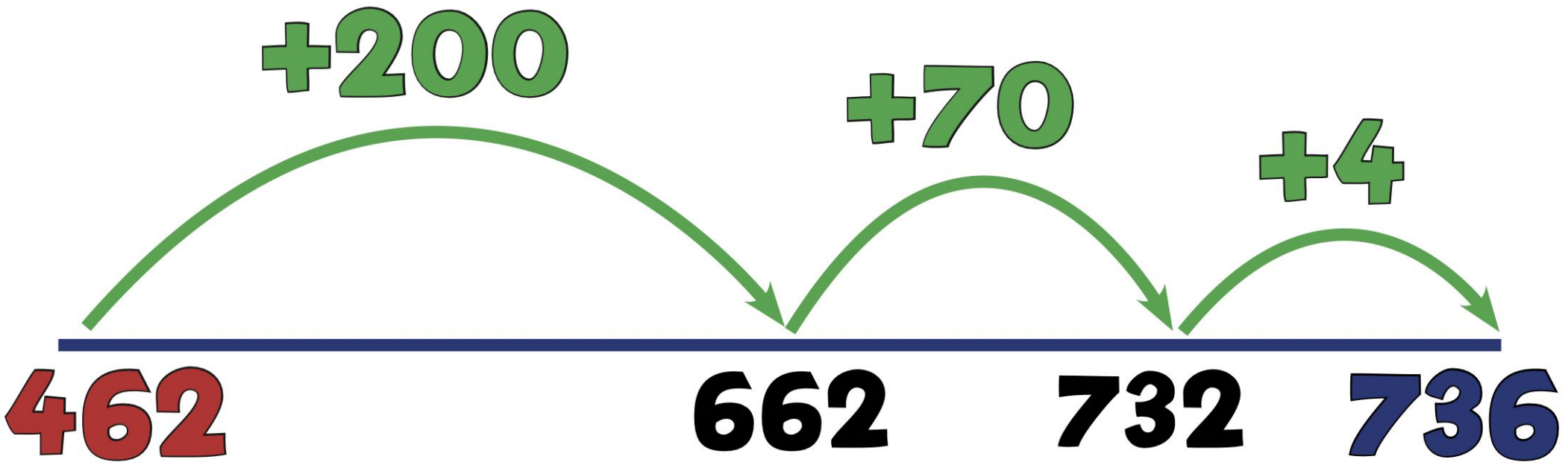
Year 3 - Subtraction

S9d: 100s, 10s, 1s Jump 3

Modelling only

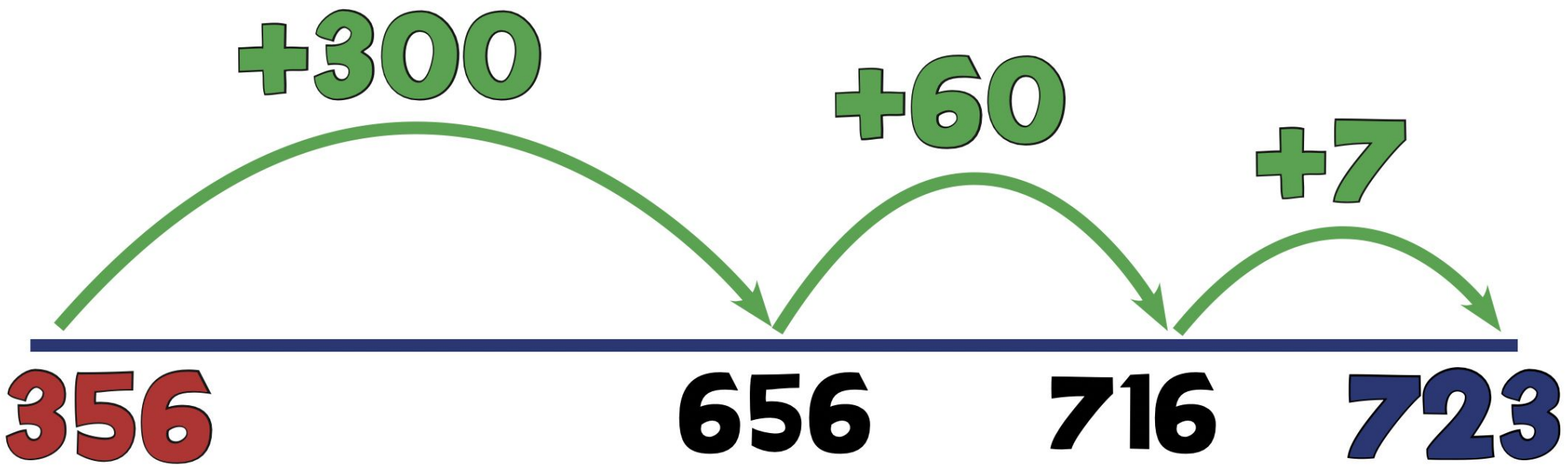


736 - 462 = 274

S9e: 100s, 10s, 1s Jump

3

Modelling only



723 - 356 = 367

S11c: Column Subtraction

3

100	10	1
~~1~~ 0	~~3~~ 12	2
−	5	6
7	6	

S11e: Column Subtraction

3

100	10	1
6	11	1
7	~~2~~	3
- 3	5	6
3	6	7

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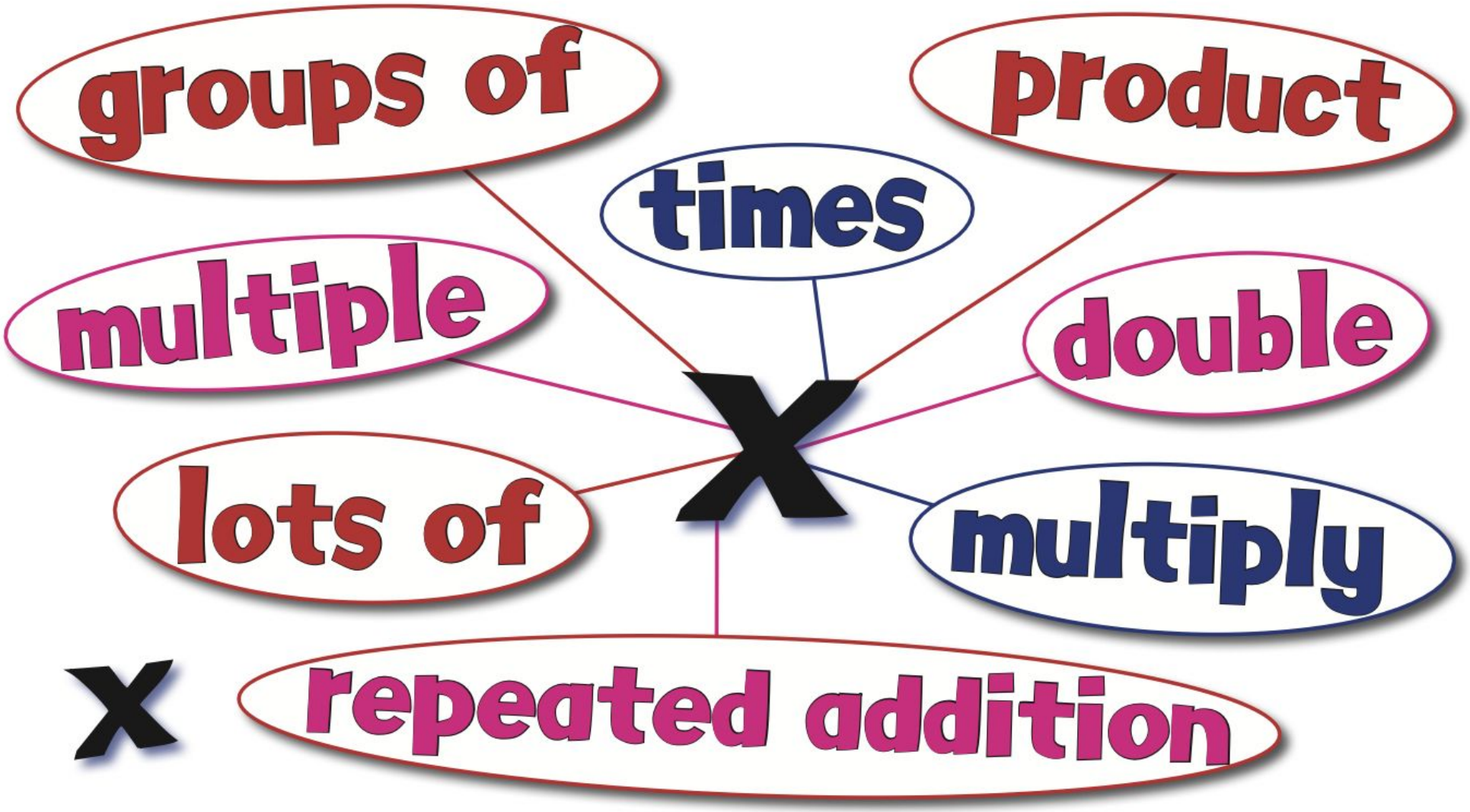
Year 3 - Multiplication

Multiplication Vocabulary



M5a: Partitioning

4

$$43 \times 6 = 258$$

$$40 \times 6 = 240$$

$$3 \times 6 = 18$$

$$240 + 18 = 258$$

(M8: Column Multiplication)

4 Additional:a

100	10	1
	4	3
x		6
2	5	8
	1	

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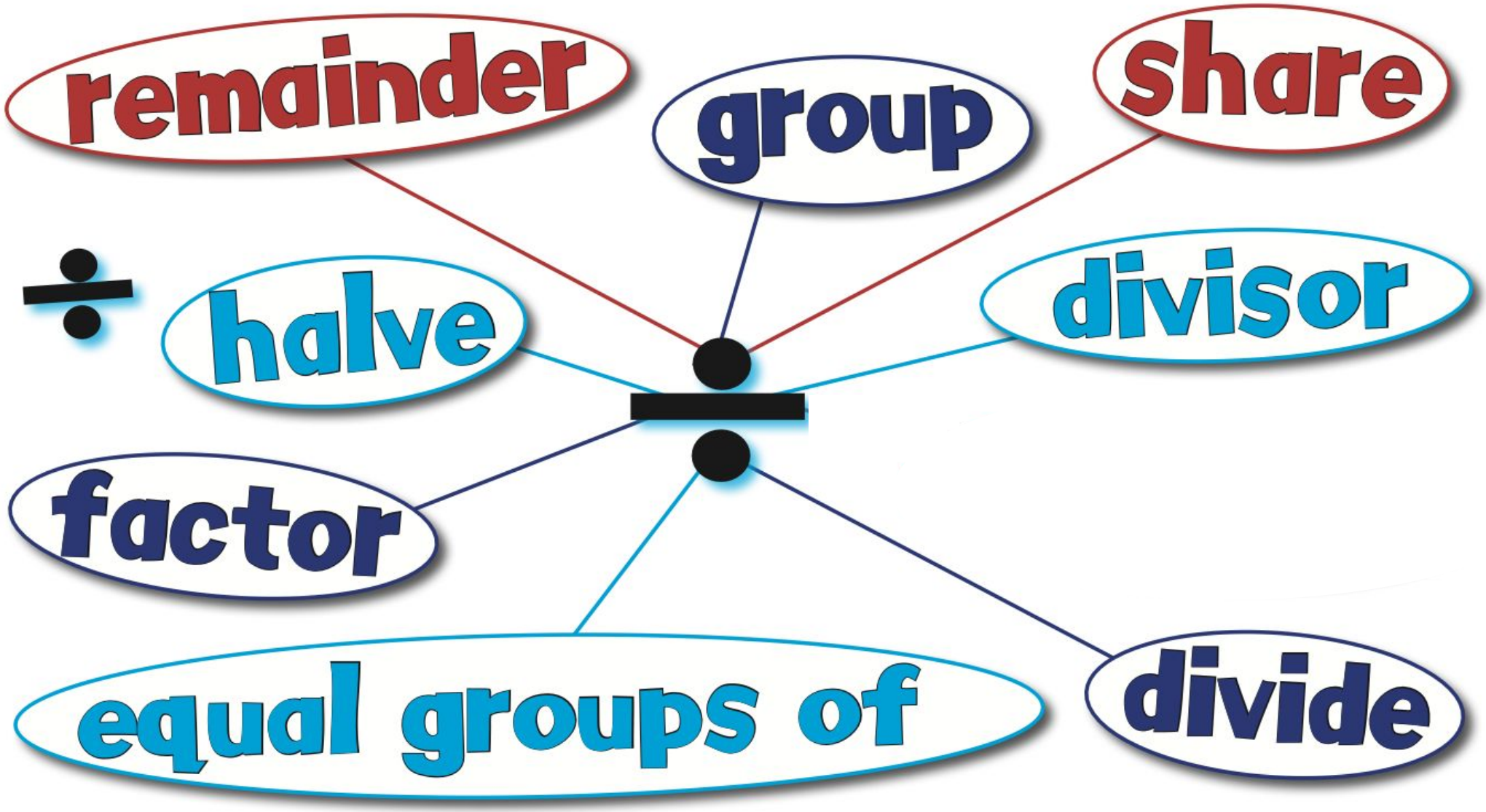
Year 3 - Division

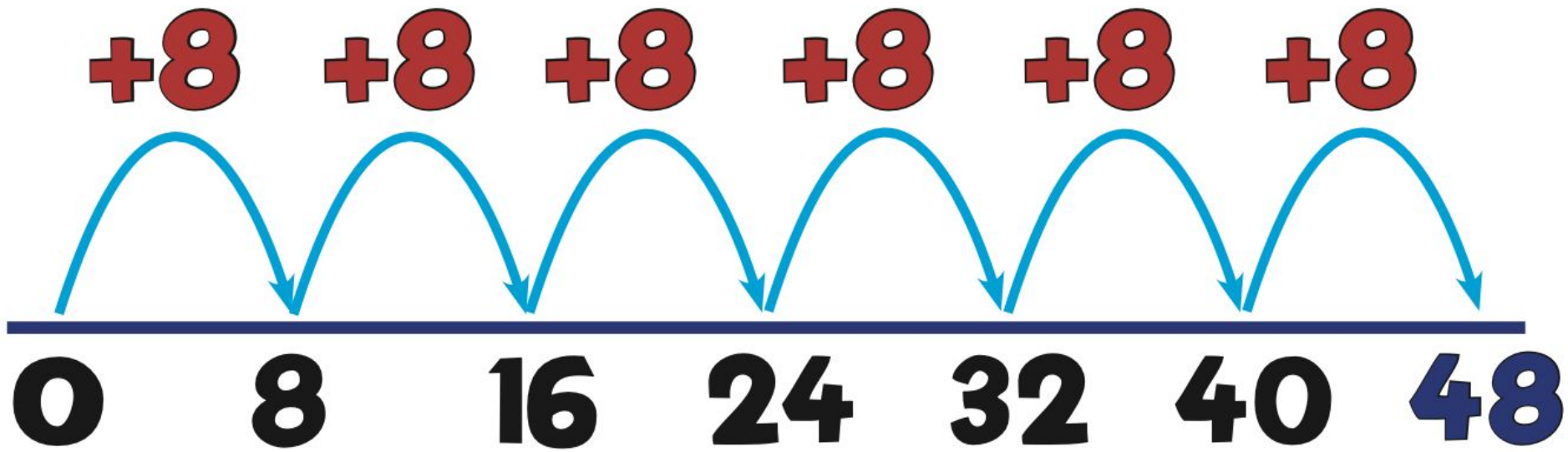
Division Vocabulary



D5b: Grouping on a Number Line

MODELLING ONLY

3



"How many 8s in 48?"
Answer: 6

$$48 \div 8 = 6$$

(D10: Short Division)

3 Additional

$$72 \div 4 = 18$$

$$4\overline{)\,7^{3}2}\quad 18$$

(D10: Short Division)

3 Additional:a

$$65 \div 4 = 16\text{r}1$$

$$4\overline{)65} = 16\text{r}1$$

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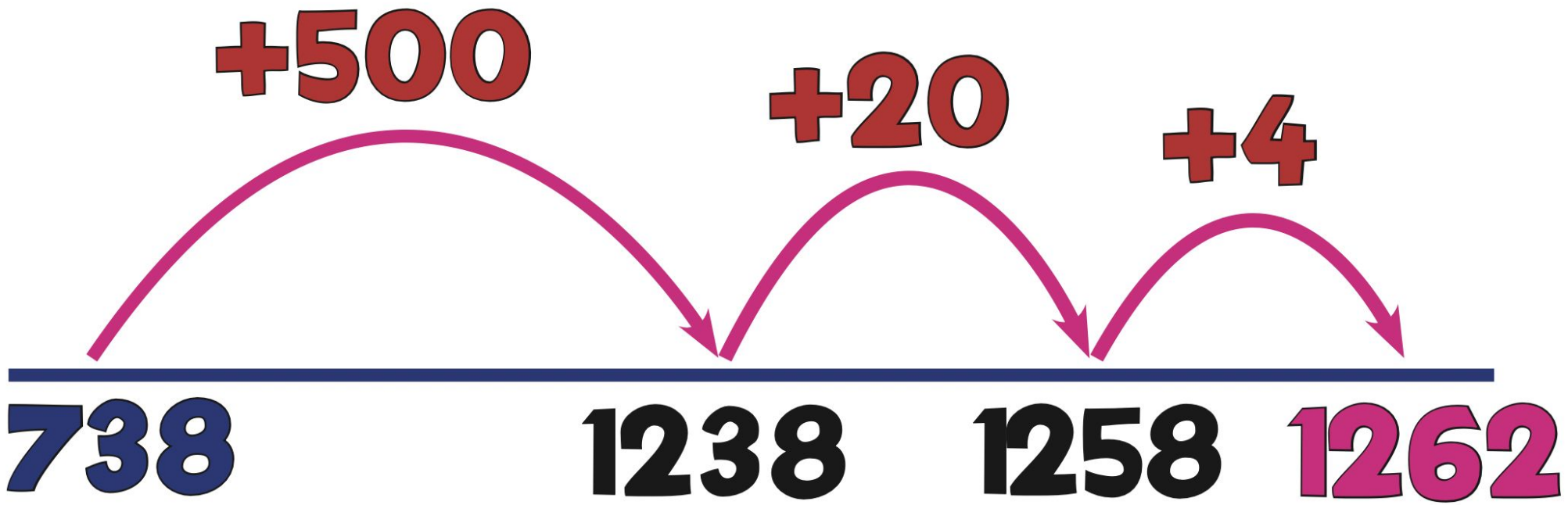
Year 4 - Addition

A3e: Forwards Jump

MODELLING ONLY

3/4

738 + 524 = 1262



A7f: Column Addition

4

$$
\begin{array}{r}
4873 \\
+\ 3762 \\
\hline
8635 \\
\hline
1\ \ 1
\end{array}
$$

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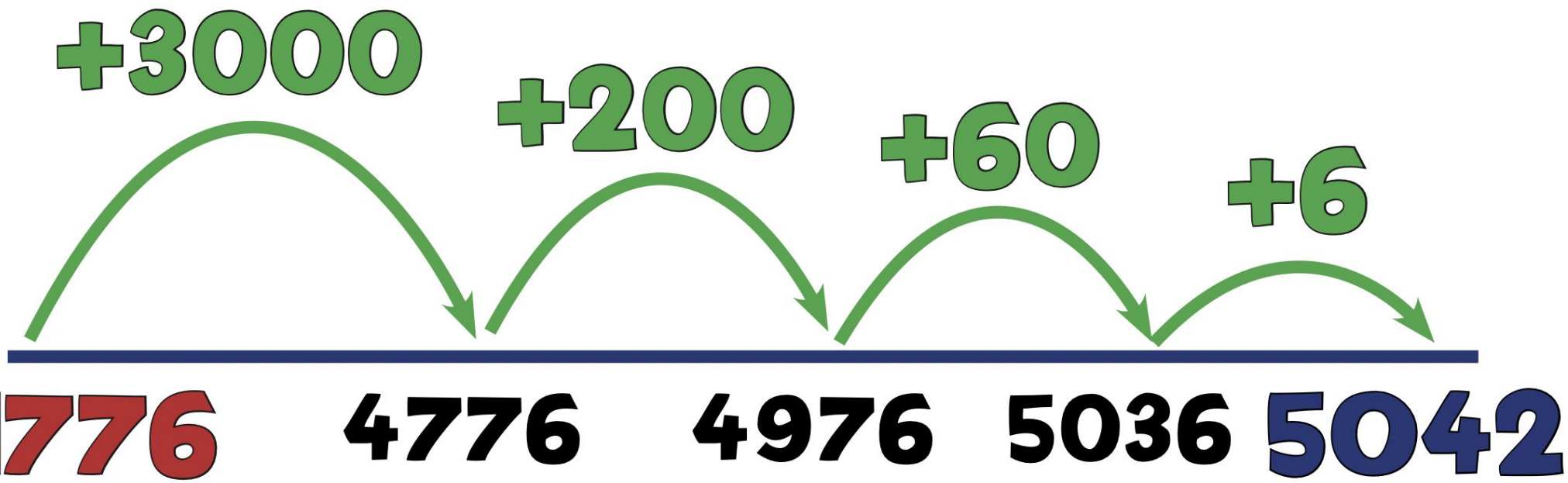
Year 4 - Subtraction

Modelling only

S9g: 1000s, 100s, 10s, 1s Jump

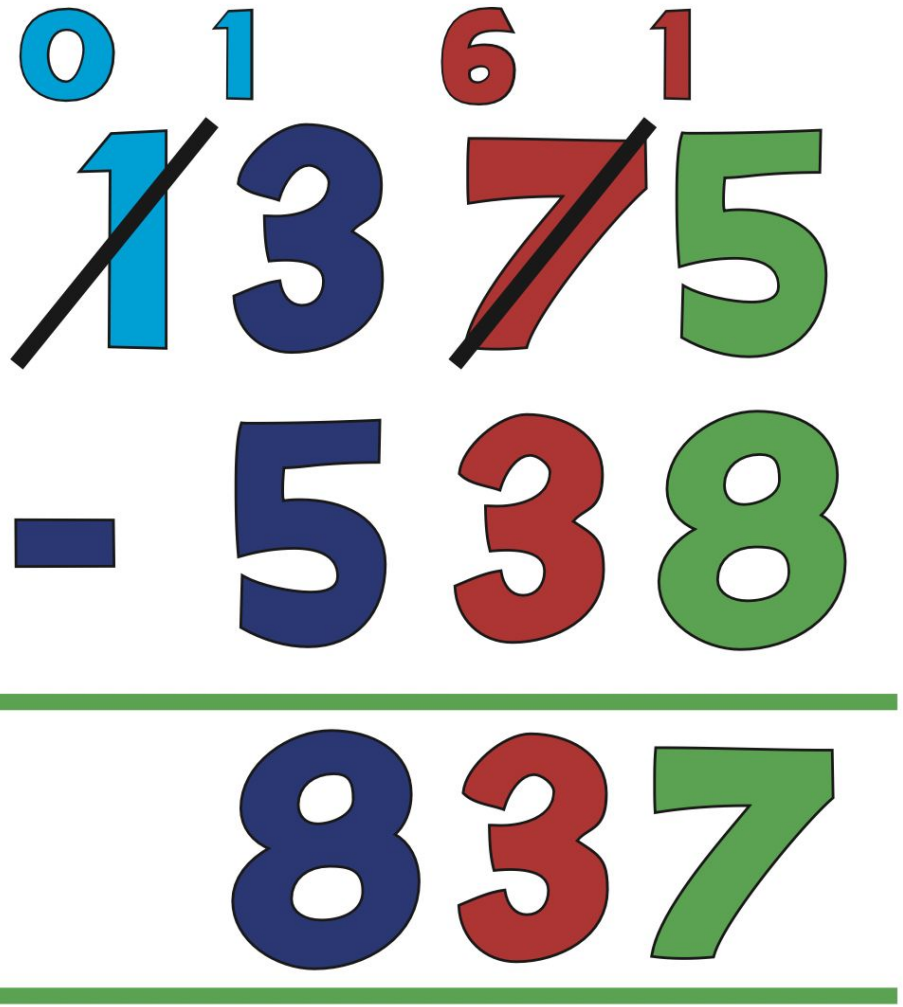
4



5042 - 1776 = 3266

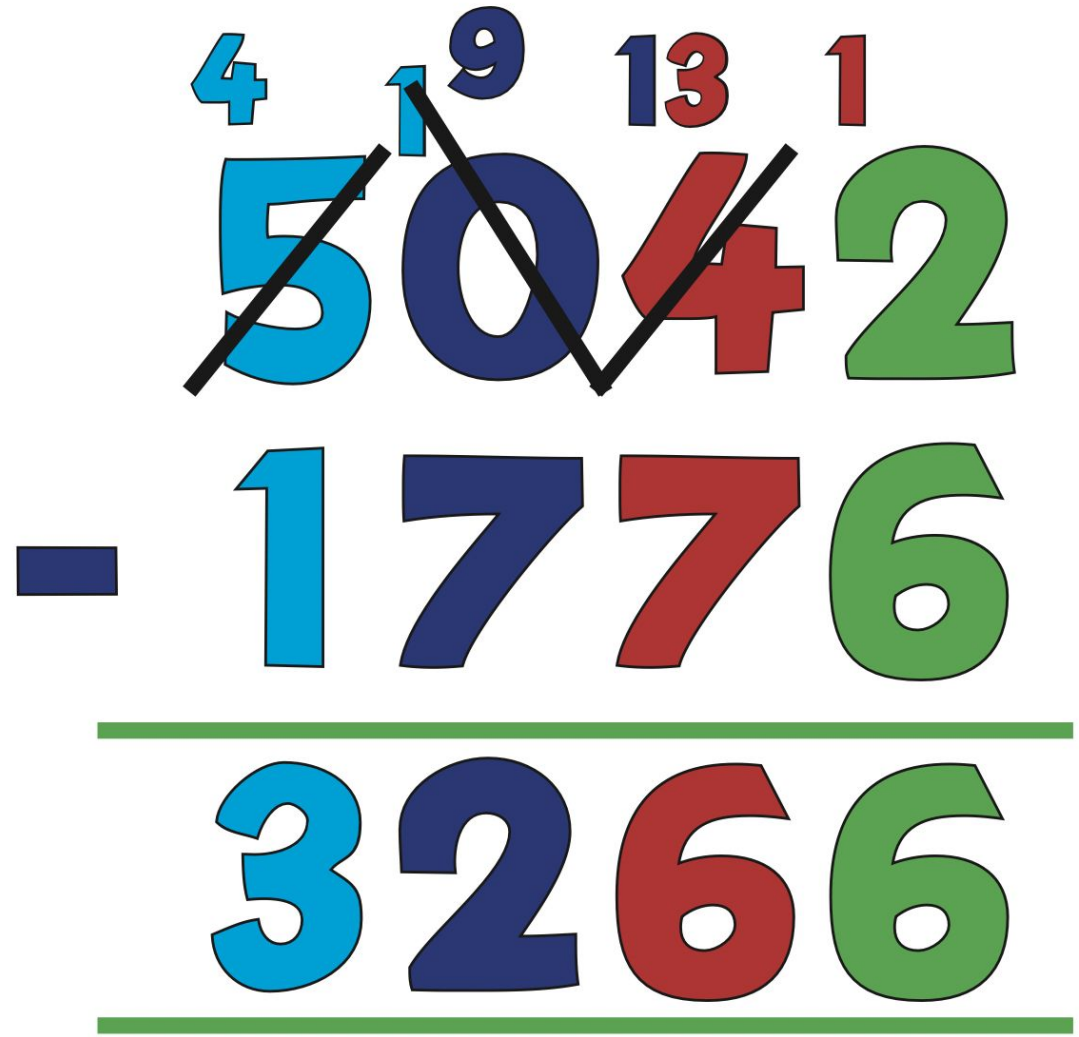
S11f: Column Subtraction

4



S11g: Column Subtraction

4



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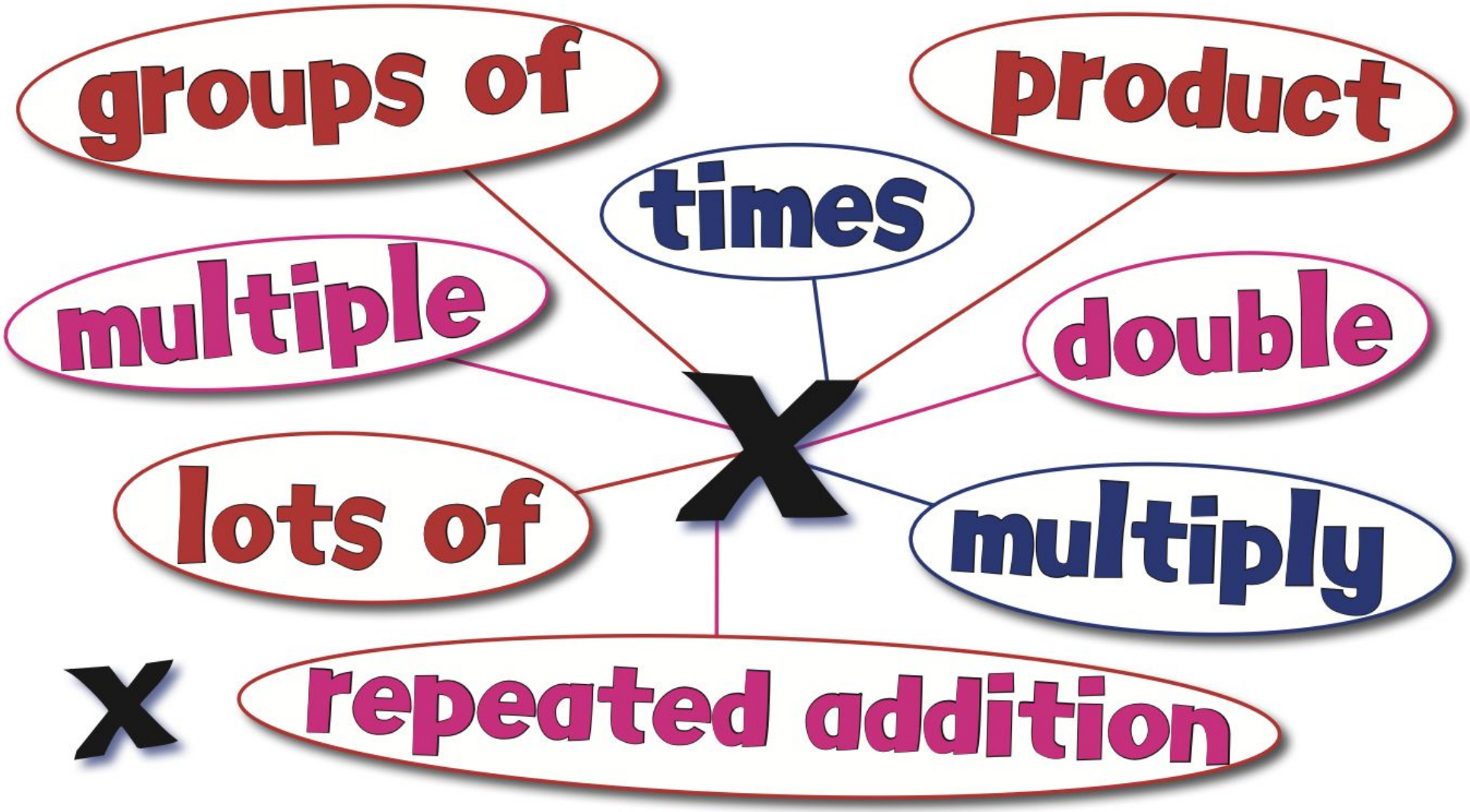
Year 4 - Multiplication

Multiplication Vocabulary



M8: Column Multiplication

4

100	10	1
1	4	7
x		4
5	8	8
1	2	

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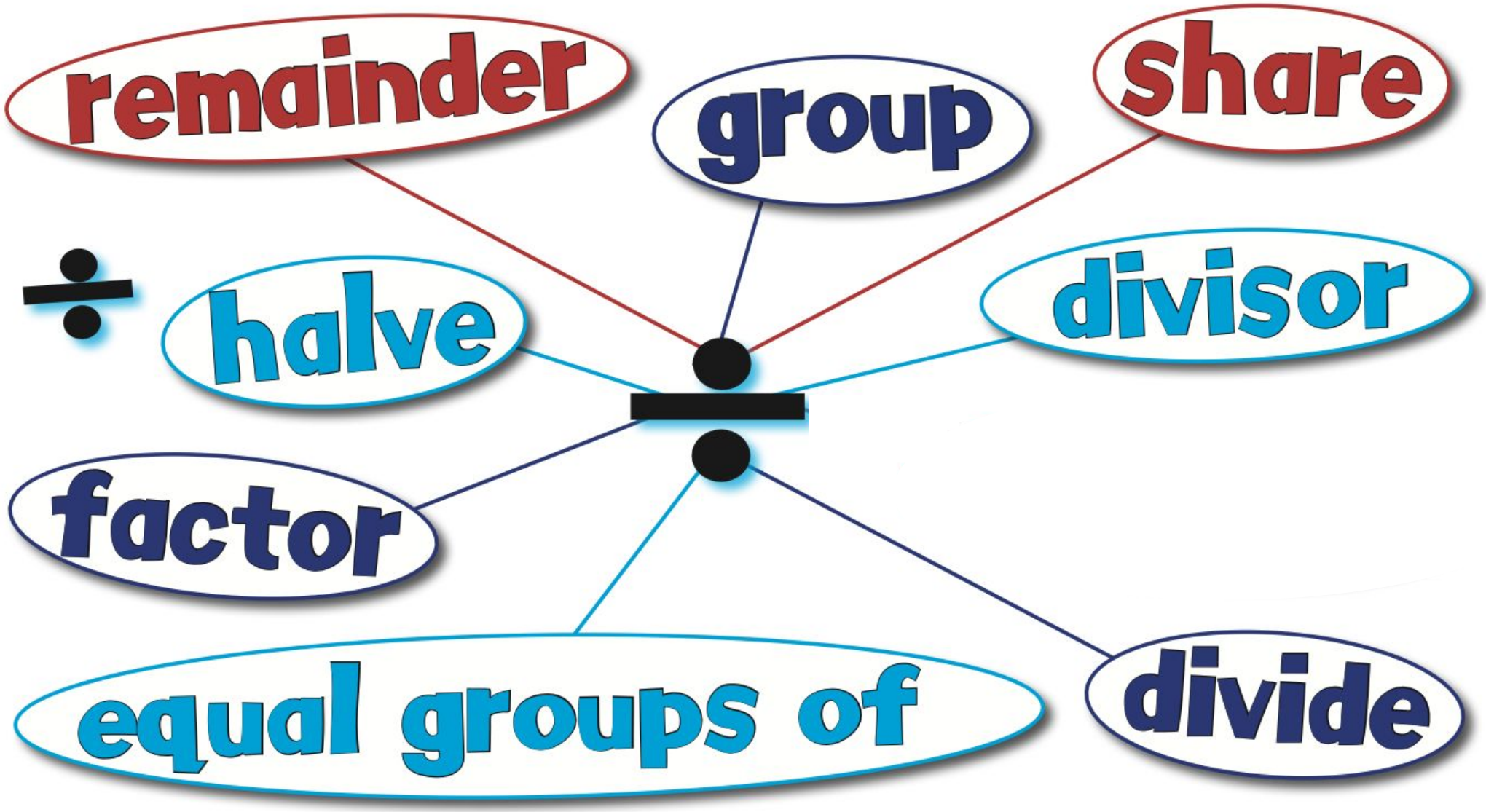
Year 4 - Division

Division Vocabulary



D10b: Short Division

4

$$136 \div 4 = 34$$

$$4\overline{)136}$$

$$34$$

D10c: Short Division

4

$145 \div 6 = 24r1$

$$6\overline{)1^{1}4^{2}5} \quad 24r1$$

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Year 5 - Addition

A7f: Column Addition

4

$$
\begin{array}{r}
4873 \\
+\ 3762 \\
\hline
8635 \\
\hline
1\ \ 1
\end{array}
$$

A7g: Column Addition

5

$$
\begin{array}{r}
787567 \\
+\ 446278 \\
\hline
1233845 \\
\hline
1\ \ 1\ \ 1\ \ \ \ 1\ \ 1
\end{array}
$$

A7 j: Column Addition

5

10	1	.	$\frac{1}{10}$
	76	.	7
+	58	.	5
1	35	.	2
1	1		1

A7l: Column Addition

5

With Decimals

$$73.4 + 5.67 = 79.07$$

10 1 . $\frac{1}{10}$ $\frac{1}{100}$

$$\begin{array}{r} 73.4 \\ +\ 5.67 \\ \hline 79.07 \\ \hline 1 \end{array}$$

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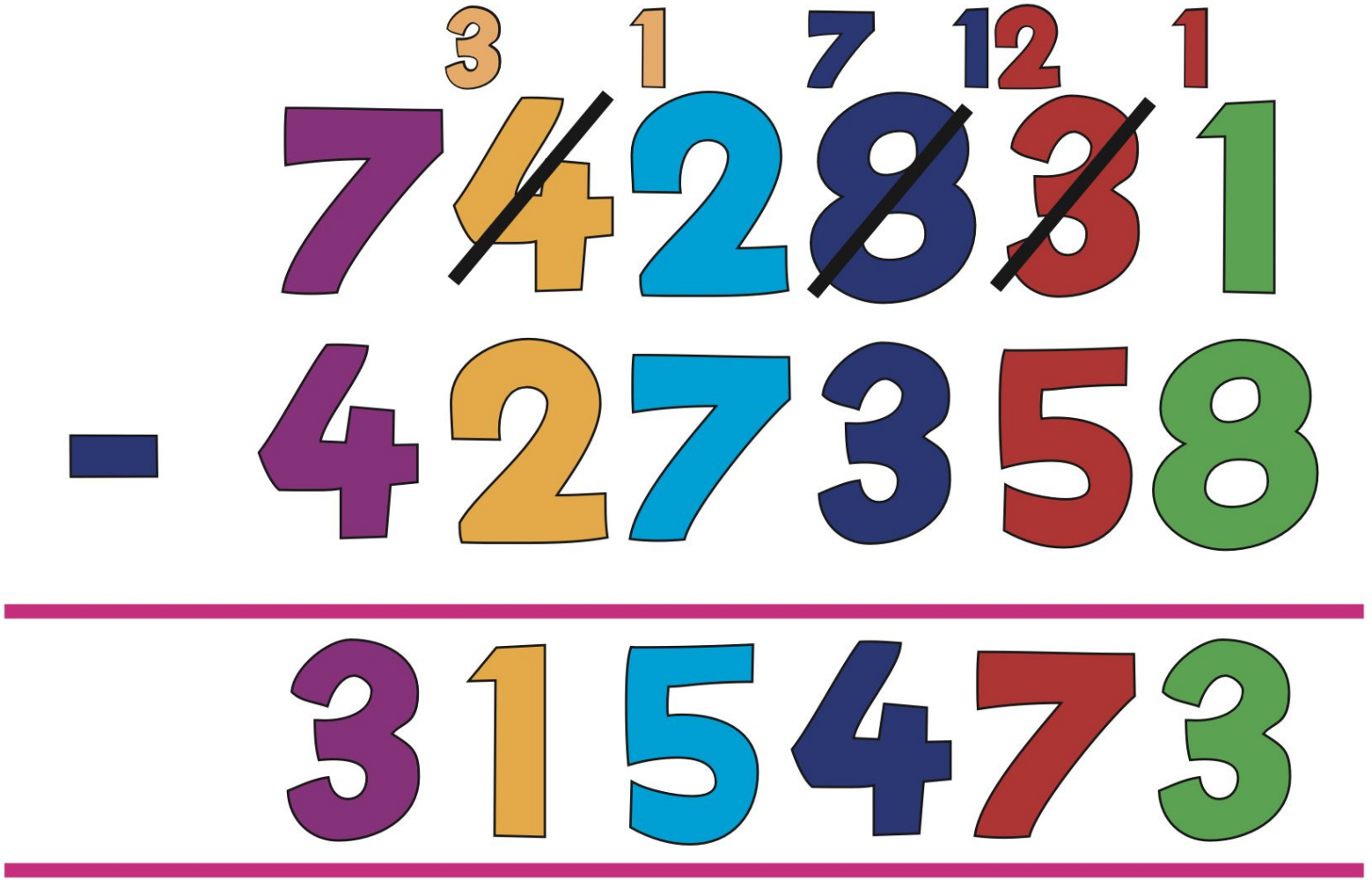
Year 5 - Subtraction

S11h: Column Subtraction

5



S11j: Column Subtraction

5

10	1	.	$\frac{1}{10}$	$\frac{1}{100}$

	6	11		13	1
	~~7~~	~~2~~	.	~~4~~	3
−	4	7	.	8	5
	2	4	.	5	8

S11k: Column Subtraction

5

With Decimals

$$12.4 - 5.97 = 6.43$$

10	1	.	$\frac{1}{10}$	$\frac{1}{100}$
0	11		13	1
~~1~~	~~2~~	.	~~4~~	0
−	5	.	9	7
	6	.	4	3

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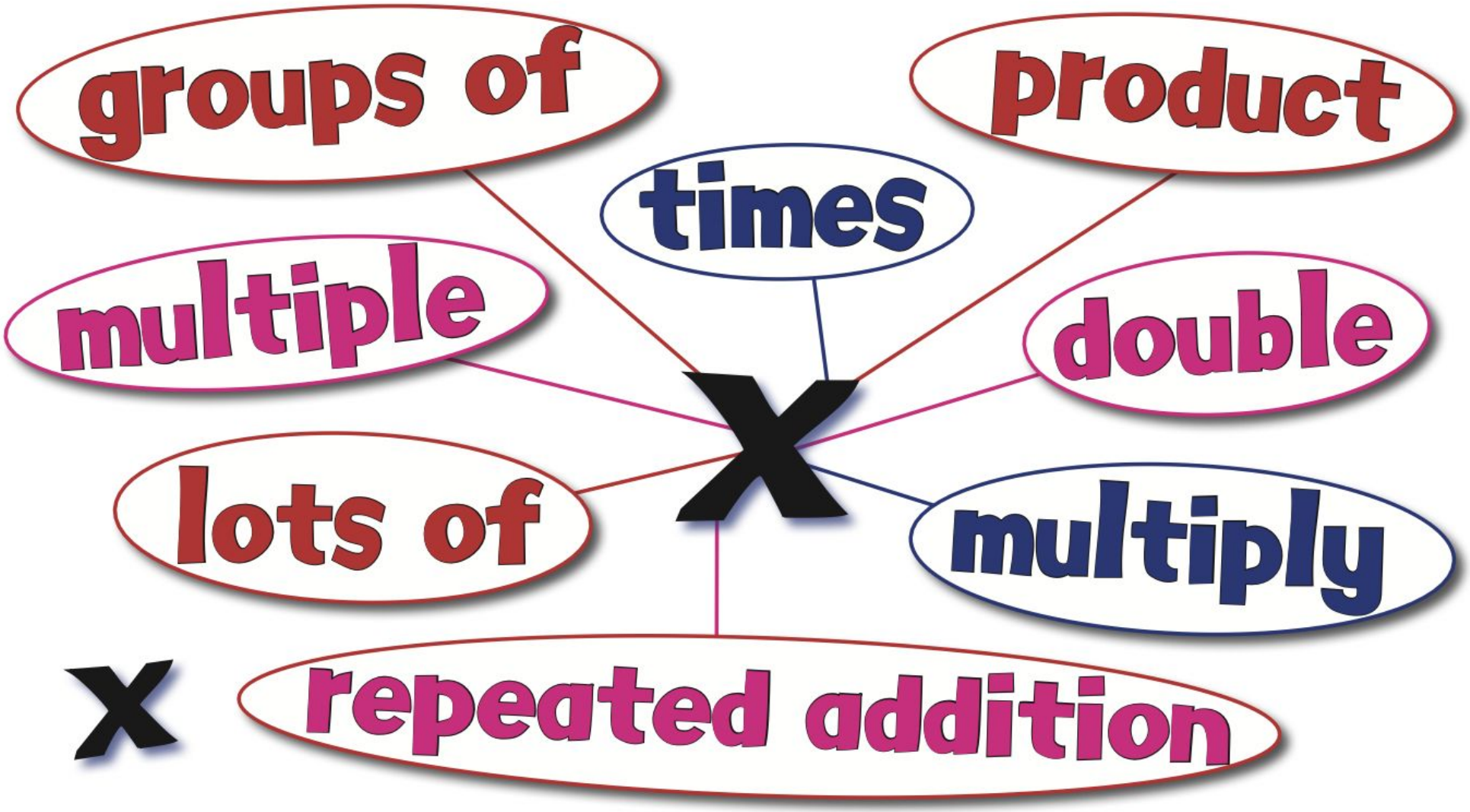
Year 5 - Multiplication

Multiplication Vocabulary



M8a: Column Multiplication

4

3	6	4	7
x			4
1	4	5	8	8
	2	1	2	

M10: Long Multiplication

5

Column

$$
\begin{array}{rr}
 & 15 \\
\times & 12 \\
\hline
 & 30 \quad (15 \times 2) \\
+ & 150 \quad (15 \times 10) \\
\hline
 & 180 \\
\hline
\end{array}
$$

M10a: Long Multiplication

6

Column

$$
\begin{array}{rr}
 & 43 \\
\times & 65 \\
\hline
 & 215 \quad (43 \times 5) \\
+ & 2580 \quad (43 \times 60) \\
\hline
 & 2795
\end{array}
$$

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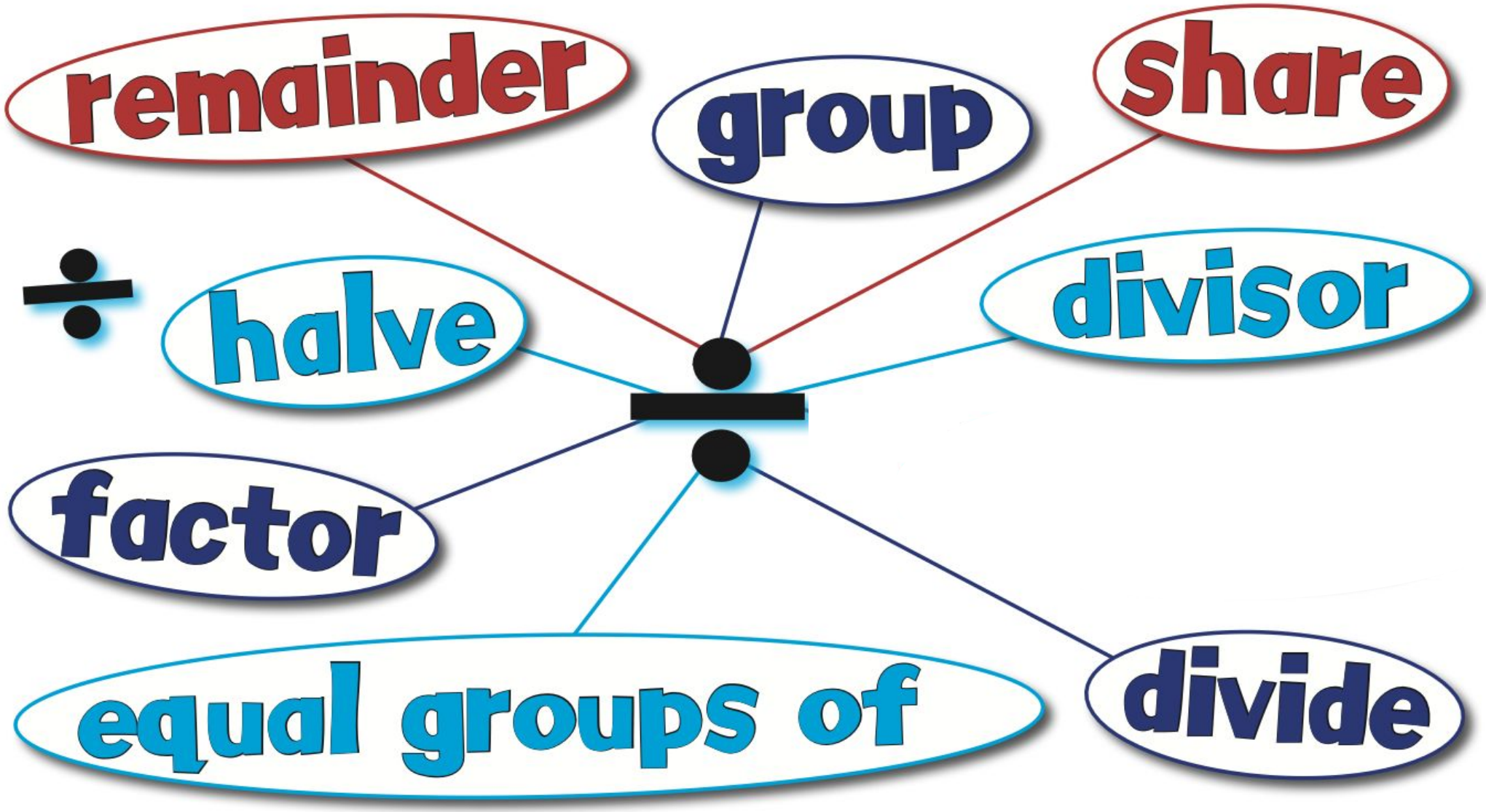
Year 5 - Division

Division Vocabulary



D10e: Short Division

5

$536 \div 4 = 134$

$$\begin{array}{r} 1\;\;3\;\;4 \\ 4 \overline{)\,5\,{}^{1}3\,{}^{1}6} \end{array}$$

D10d: Short Division

5

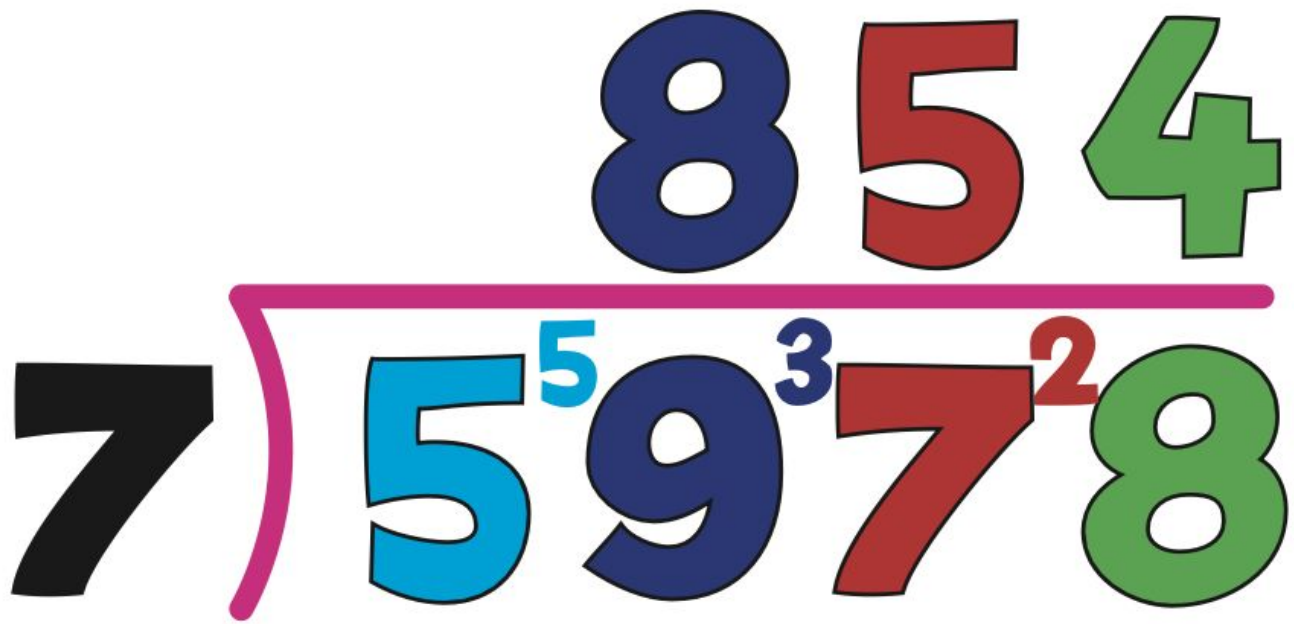
$$394 \div 6 = 65r4$$

$$6\overline{)394} = 65r4$$

D10g: Short Division

5

$5978 \div 7 = 854$



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Year 6 - Addition

A7f: Column Addition

REVISION

4

$$\begin{array}{r} 4873 \\ +\ 3762 \\ \hline 8635 \\ \hline 1\ \ 1 \end{array}$$

A7g: Column Addition

REVISION

5

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

A7 j: Column Addition

5

10	1	.	$\frac{1}{10}$
	76	.	7
+	58	.	5
1	35	.	2
1	1		1

A71: Column Addition

5

With Decimals

$$73.4 + 5.67 = 79.07$$

10	1	.	$\frac{1}{10}$	$\frac{1}{100}$
7	3	.	4	
+	5	.	6	7
7	9	.	0	7
	1			

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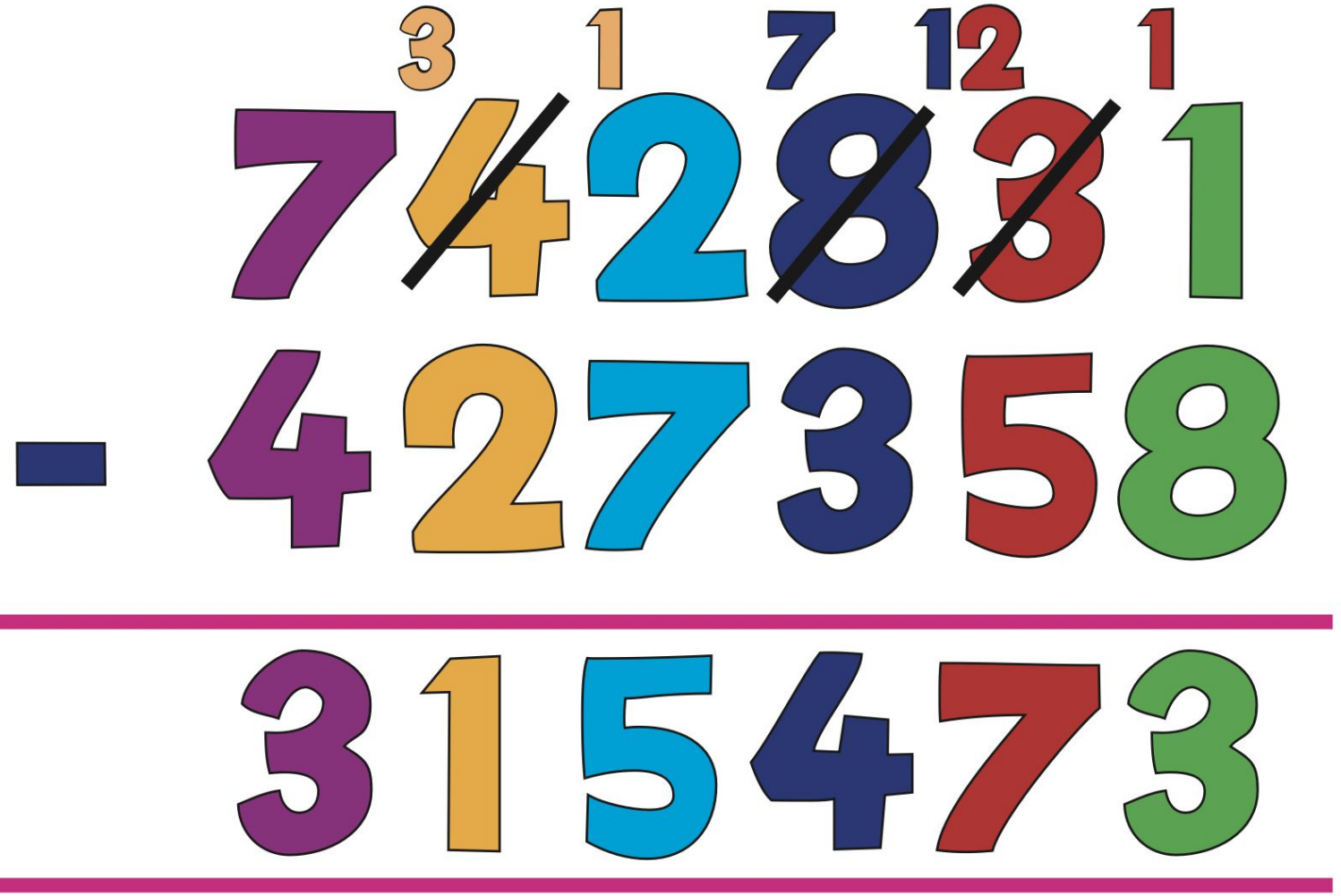
Year 6 - Subtraction

S11h: Column Subtraction

REVISION

5



REVISION

S11j: Column Subtraction

5

10 1 . $\frac{1}{10}$ $\frac{1}{100}$

	6	11		13	1
	~~7~~	~~2~~	.	~~4~~	3
−	4	7	.	8	5
	2	4	.	5	8

REVISION

S11k: Column Subtraction

5

With Decimals

$$12.4 - 5.97 = 6.43$$

10	1	.	$\frac{1}{10}$	$\frac{1}{100}$
0	11		13	1
~~1~~	~~2~~	.	~~4~~	0
−	5	.	9	7
	6	.	4	3

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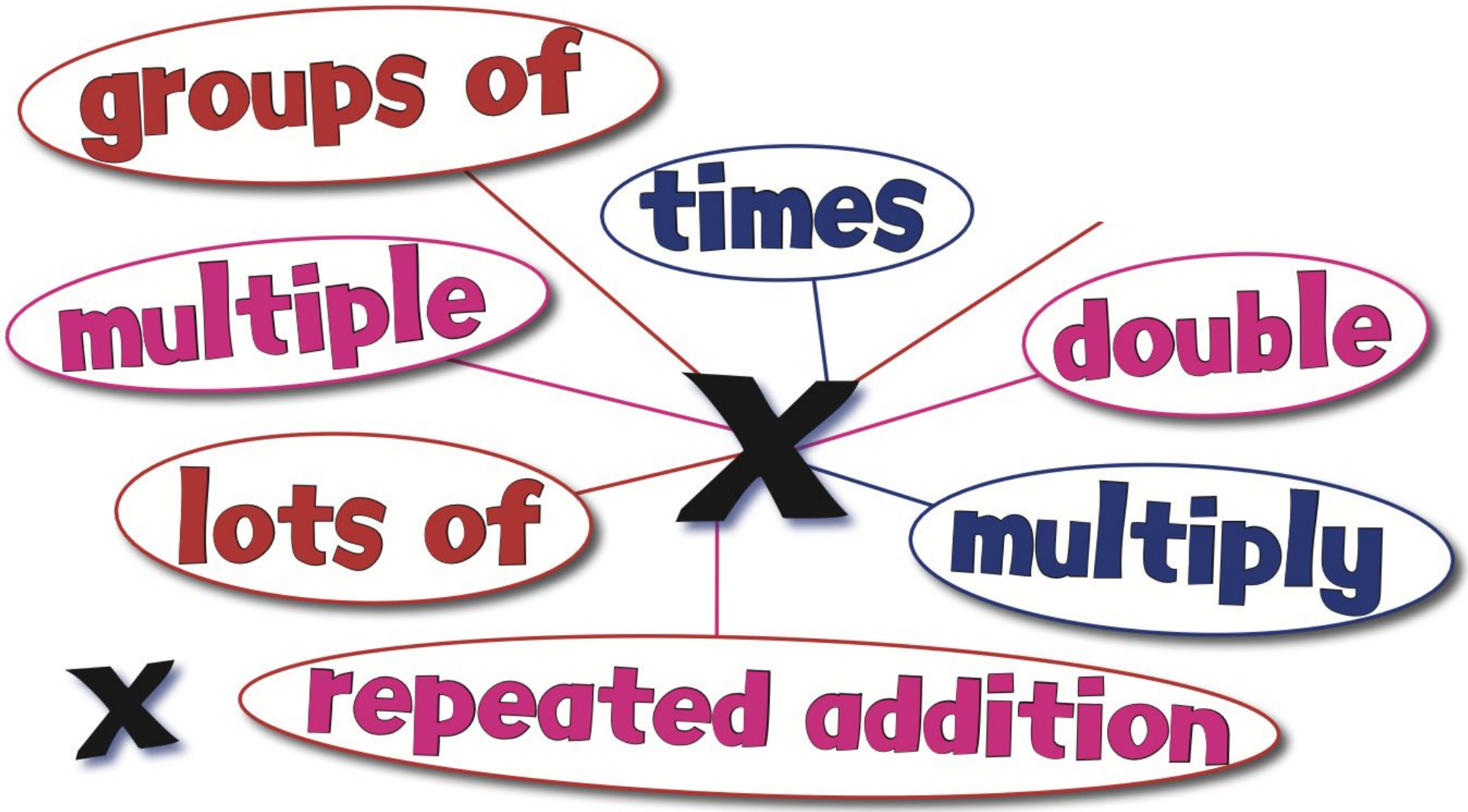
Year 6 - Multiplication

Multiplication Vocabulary



M10b: Long Multiplication

6

Column

$$
\begin{array}{r}
243 \\
\times\ 68 \\
\hline
1944 \\
+\ 14580 \\
\hline
16524 \\
\hline
\end{array}
$$

(243 x 8)

(243 x 60)

M10c: Long Multiplication

6

Column

$$
\begin{array}{rr}
 & 203 \\
\times & 68 \\
\hline
 & 1624 \quad (203 \times 8) \\
+ & 12180 \quad (203 \times 60) \\
\hline
 & 13804 \\
\hline
 & 1
\end{array}
$$

M10h: Long Multiplication

6 Column

$$
\begin{array}{r}
3786 \\
\times \quad 48 \\
\hline
30288 \quad (3786 \times 8) \\
+\ 151440 \quad (3786 \times 40) \\
\hline
181728 \\
\hline
\end{array}
$$

3 6 6 4

1 3 3 2

1

M10d: Column Multiplication

5

10 1 . $\frac{1}{10}$

$$\begin{array}{r} 3.6 \\ \times \quad 4 \\ \hline 14.4 \\ \hline 2 \end{array}$$

M10e: Column Multiplication

6

100 10 1 . $\frac{1}{10}$

47.2

x 3

141.6

2

M10f: Column Multiplication

6

10	1	.	$\frac{1}{10}$	$\frac{1}{100}$
	7	.	3	8
x	6			
4	4	.	2	8
4	2		4	

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Additional Multiplication

M10g: Long Multiplication

Column Decimals

6

10	1	.	$\frac{1}{10}$	$\frac{1}{100}$
	24	.	3	
x	2	.	5	
	12	.	15	(24.3 x 0.5)
	1		2	1	
+	48	.	60	(24.3 x 2)
	60	.	75	
	1			

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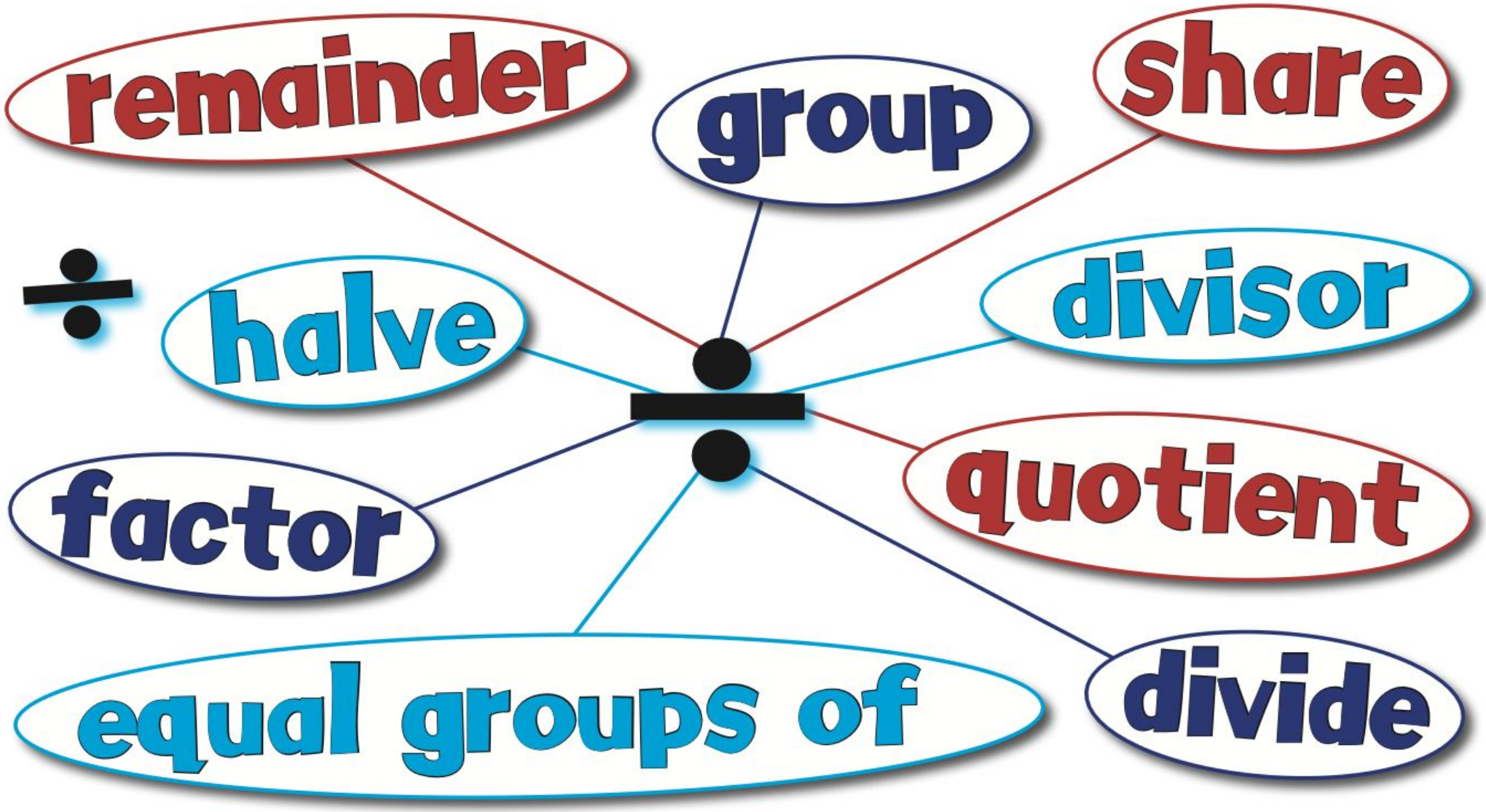
Year 6 - Division

Division Vocabulary



D10k: Short Division

6

$$87.5 \div 7 = 12.5$$

$$7 \overline{)\,87.5} = 12.5$$

1 3

D10h: Short Division

5

Different Remainders

$$\begin{array}{r} 169.2 \\ 5\overline{)\,8^{3}4^{4}6.^{1}0} \end{array}$$

$$846 \div 5$$

$$\begin{array}{r} 169\text{r}1 \\ 5\overline{)\,8^{3}4^{4}6} \end{array}$$

$$\begin{array}{r} 169\,\frac{1}{5} \\ 5\overline{)\,8^{3}4^{4}6} \end{array}$$

D11iA: Chunking

6

Long Division

$$
\begin{array}{r}
32 \\
15 \overline{)\,480} \\
-\ 450 \quad (15 \times 30) \\
\hline
30 \\
-\ 30 \quad (15 \times 2) \\
\hline
0
\end{array}
$$

480 ÷ 15 = 32