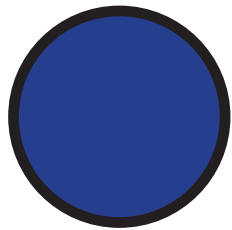


Sense of Number Visual Calculation Policy

Basic Edition for

Saint Mary's Catholic Primary School
May 2016



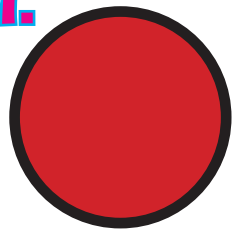
Graphic Design by Dave Godfrey

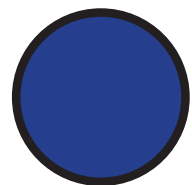
Compiled by the Sense of Number Maths Team

For sole use within Saint Mary's Catholic Primary School.

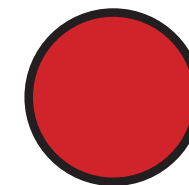
'A picture is worth 1000 words!'

www.senseofnumber.co.uk





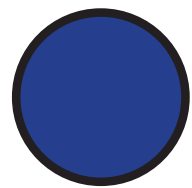
Poster Guide



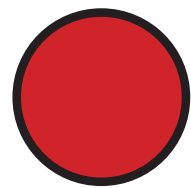
Visual Calculation Policy

Code	Section	Basic Edition (99 Slides)		Expanded Edition (316 Slides)	
		How many posters?	Slide Numbers	How many posters?	Slide Numbers
	Introduction Slides	3	1-3	3	1-3
KS	KS: Key Concepts	7	4-10	7	4-10
	Vocabulary Slides	9	11-19	9	11-19
C	Counting Policy	-	-	13	21-33
A	Addition	7	20-26	40	34-73
MA	Mental Addition	5	27-31	40	74-113
S	Subtraction	11	32-42	33	114-146
MS	Mental Subtraction	-	-	4	147-150
M	Multiplication	9	43-51	32	151-182
MM	Mental Multiplication	1	52	30	183-212
D	Division	14	53-66	41	213-253
	Calculation Cards	-	-	9	254-262
	Multiplication Tables	-	-	11	263-273
	Expanded Edition Progression (Year groups for New Curriculum)	13	67-79	19	274-291
	Alternative layouts (Column and Subtraction on a Number Line)	11	80-90	29	292-321





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:

Classroom: 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”



KC2: Key Concepts!

Multiplication

x

$$8 \times 2 = 16$$

“8 multiplied by 2” means
“8, 2 times” or
“2 groups of 8”

Division

÷

$$8 \div 2 = 4$$

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

(“8 shared into 2 sets is 4”)



MA1: Partitioning

$$45 + 82 = 127$$

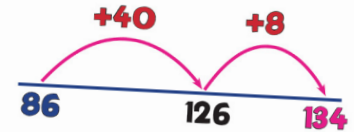
$$120 + 7 = 127$$

In my head?

Need a Jotting?

A3b: Forwards Jump

$$86 + 48 = 134$$



Need a calculator?



Formal method?

A7d: Column Addition

	Th	H	T	U
	4	8	7	3
+	3	7	6	2
	8	6	3	5
	1	1		



1

**Can I do this
in my head?**



2

**Do I need to
use a drawing
or a jotting?**



3

**Do I need an
expanded or a
standard method?**

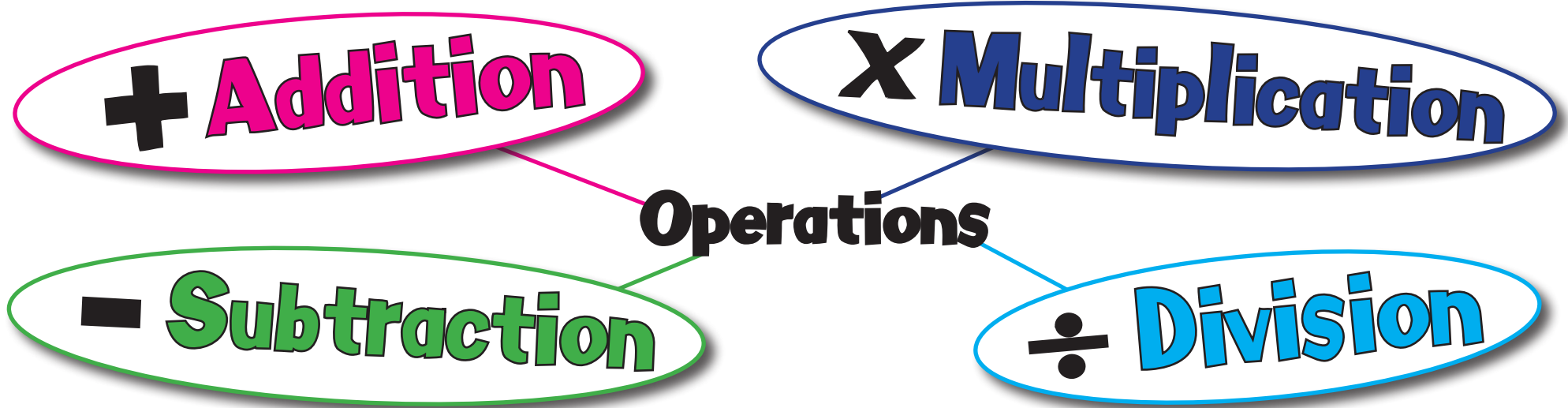
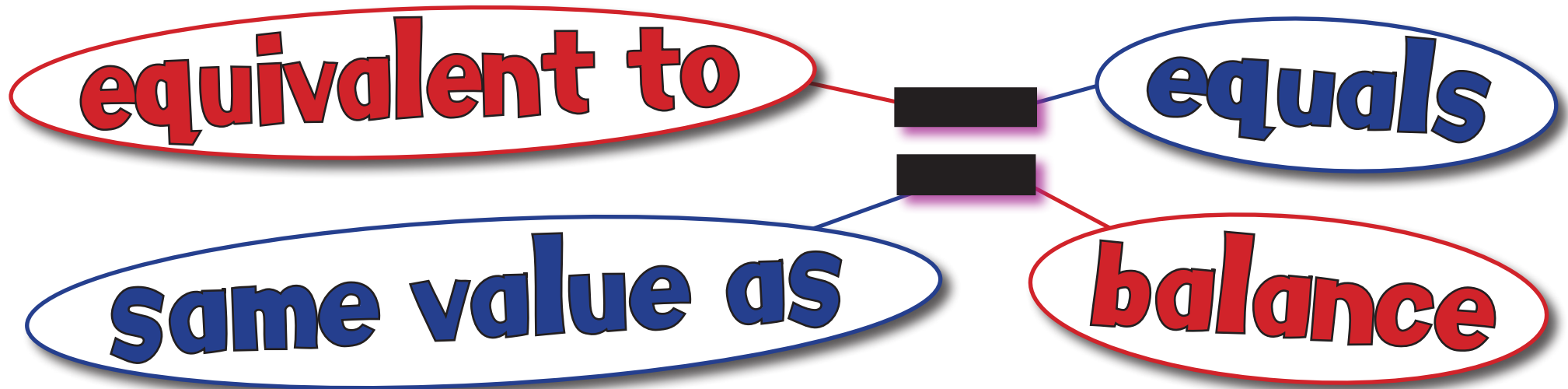


4

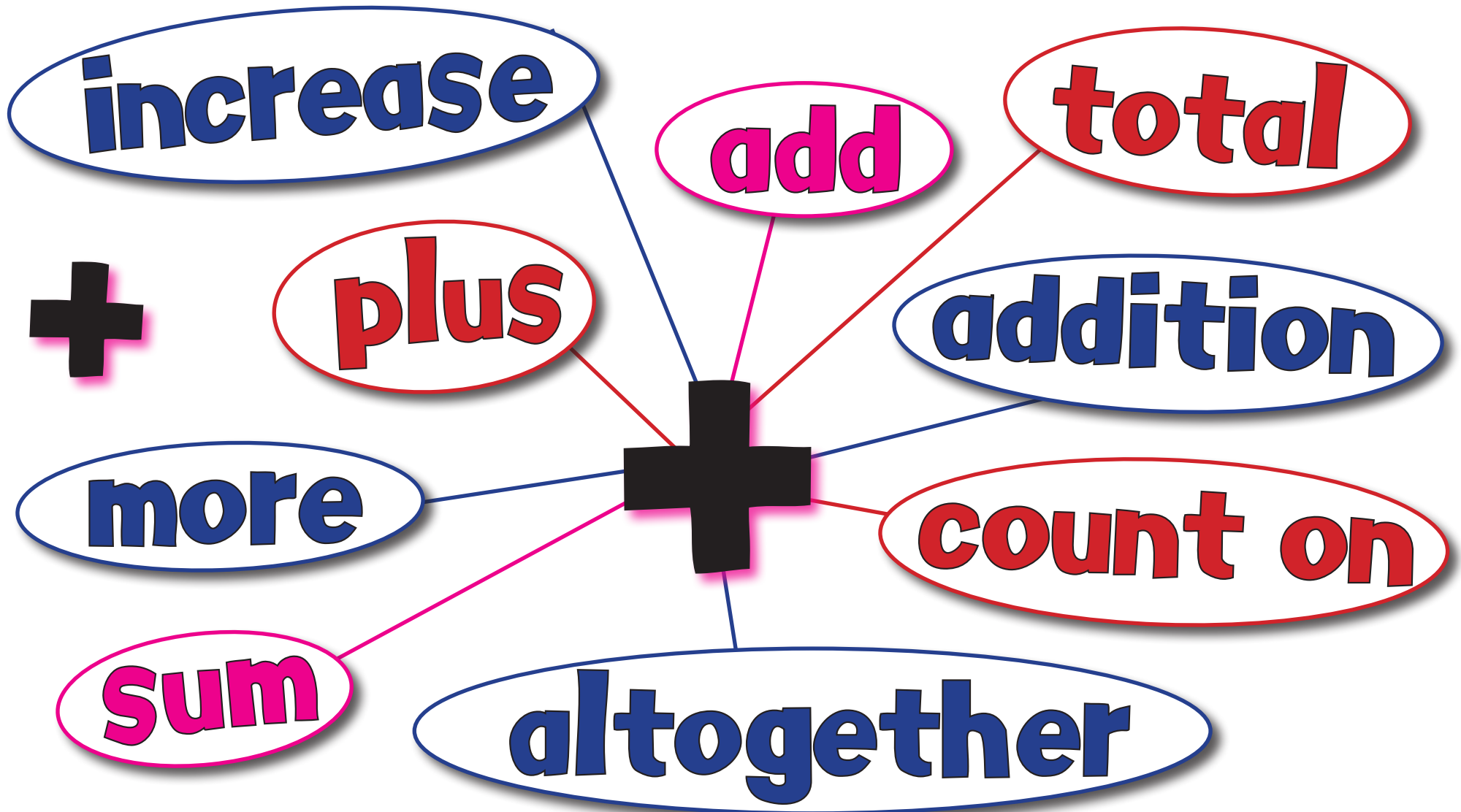
Do I need a
calculator?



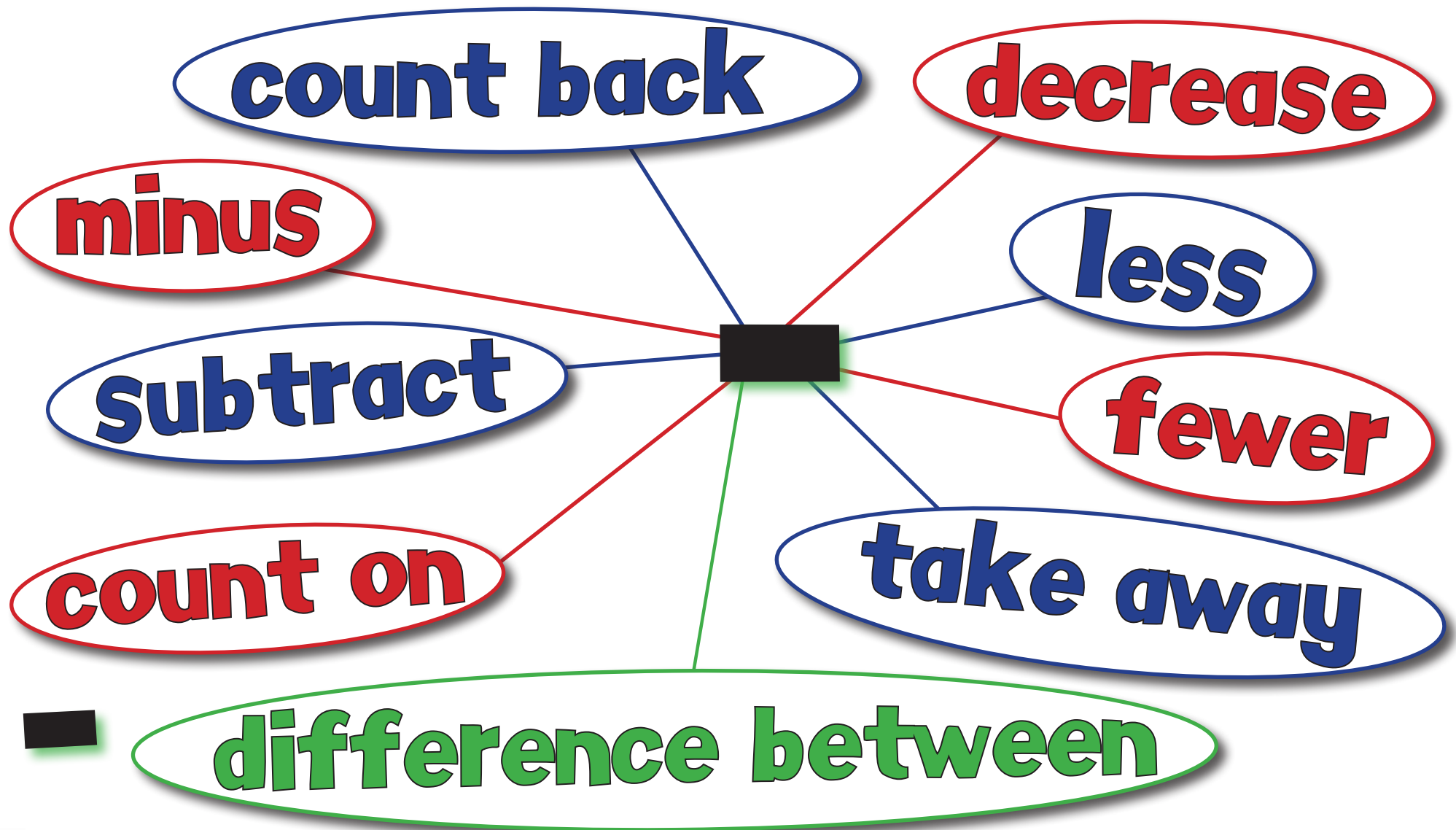
Calculation Vocabulary



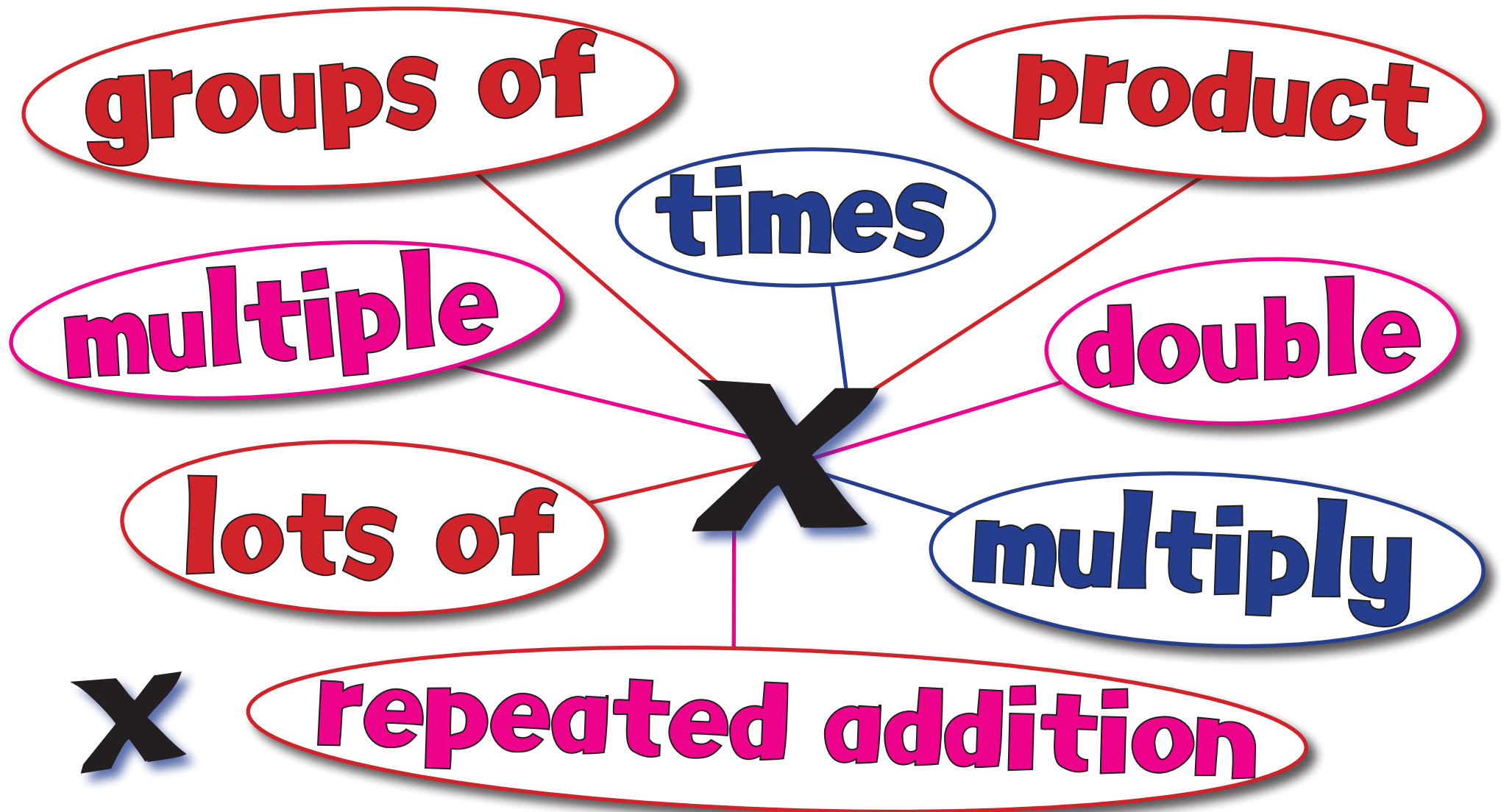
Addition Vocabulary



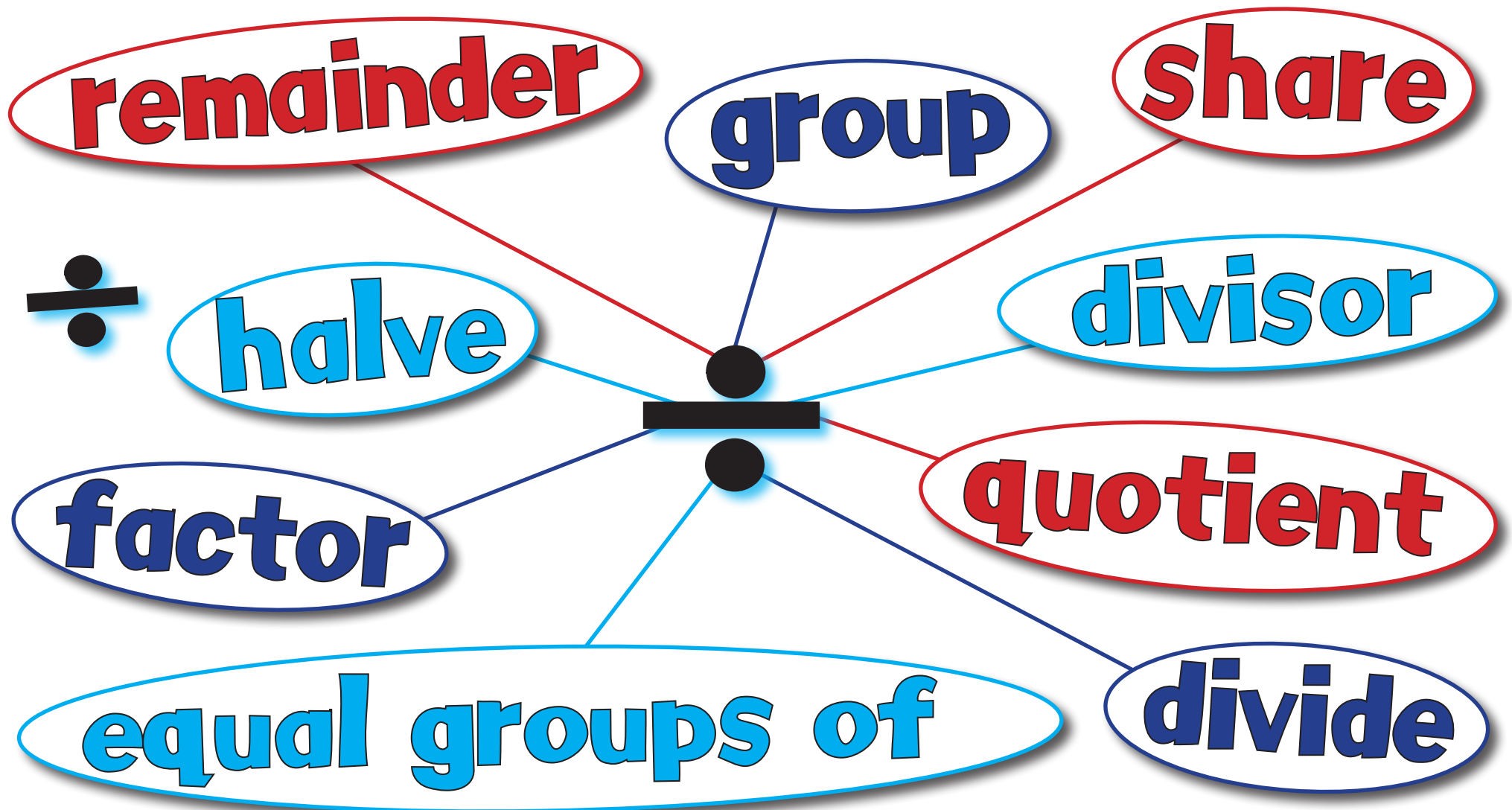
Subtraction Vocabulary



Multiplication Vocabulary



Division Vocabulary



Addition Calculation

$$4 + 2 = 6$$

(add) (equals)

addend

total

addend

sum



Subtraction Calculation

$$6 - 2 = 4$$

(subtract) (equals)

minuend

difference

subtrahend



Multiplication Calculation

$$4 \times 2 = 8$$

(multiplied by)

(equals)

multiplicand

product

multiplier

x



Division Calculation

$$8 \div 2 = 4$$

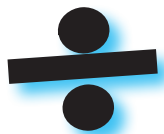
(divided by)

(equals)

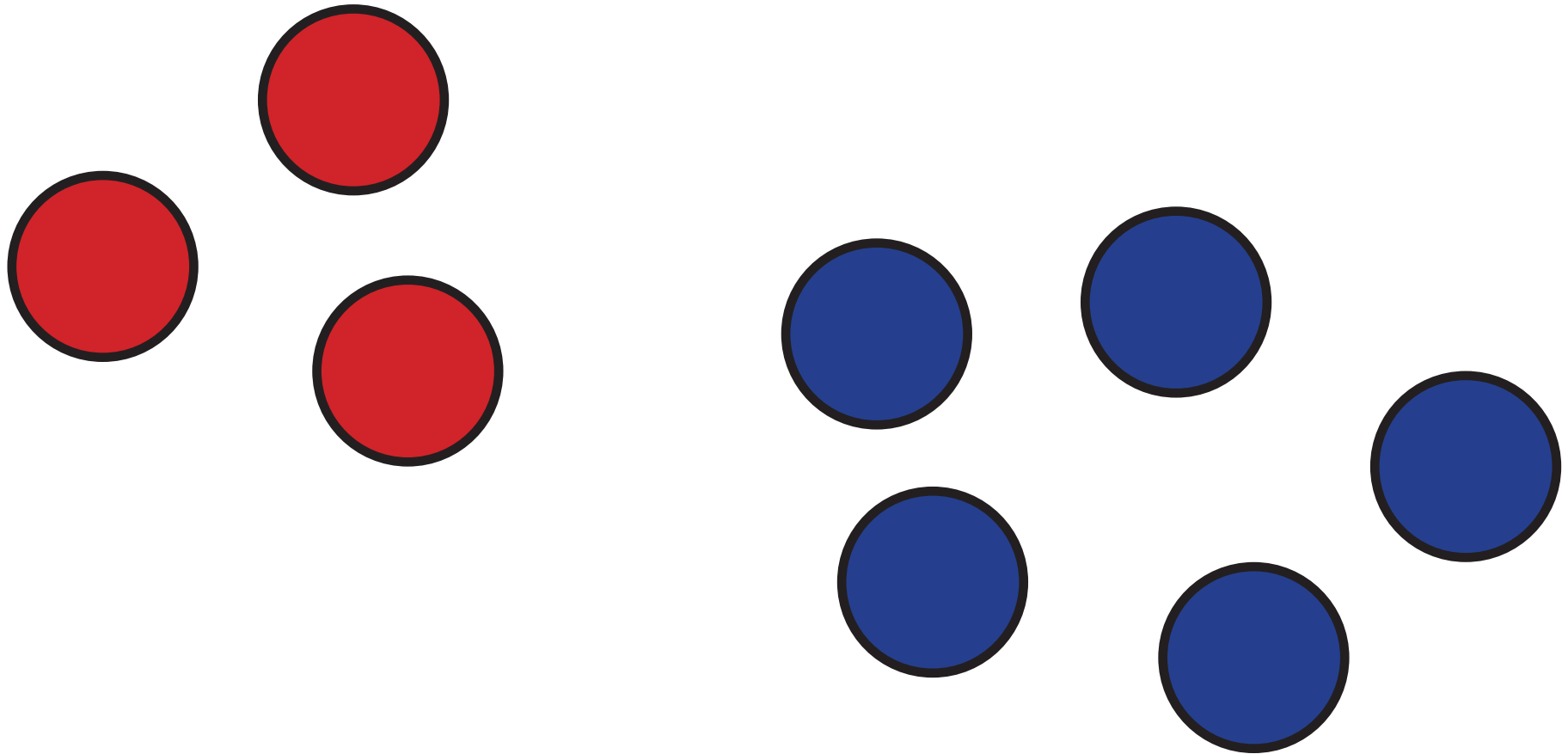
dividend

quotient

divisor



A1: Objects & Pictures



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

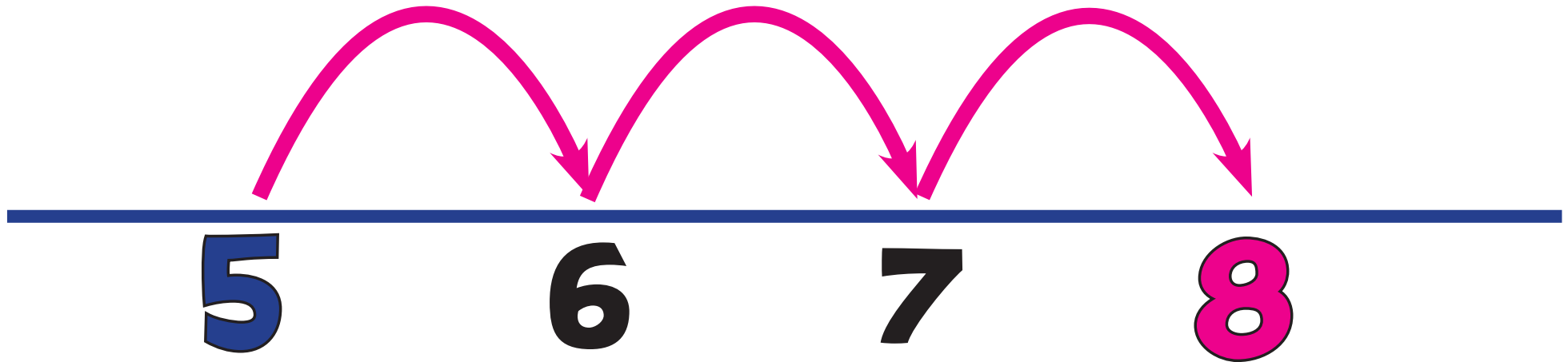


A2: Counting On

+1

+1

+1

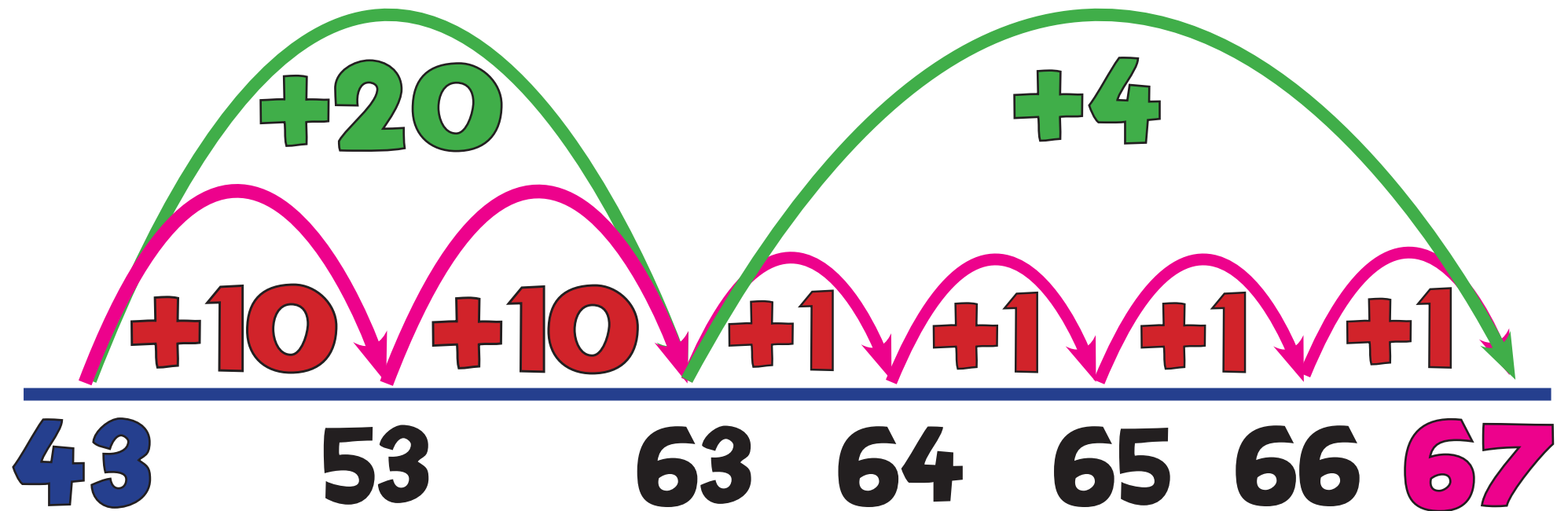


$$5 + 3 = 8$$



A3: Forwards Jump

$$43 + 24 = 67$$



A4: Partitioning

$$43 + 24 = 67$$

$$40 + 20 = 60$$

$$3 + 4 = 7$$

$$67$$



A5: Partition Jot

$$43 + 24 = 67$$

Diagram illustrating the partitioning of the addition $43 + 24 = 67$ into $60 + 7$ using a partition jot:

- The number 43 is partitioned into 40 (red) and 3 (green).
- The number 24 is partitioned into 20 (red) and 4 (green).
- The 40 and 20 are combined to form 60 (red).
- The 3 and 4 are combined to form 7 (green).

$$60 + 7 = 67$$



A6: Expanded Column Addition

$$\begin{array}{r} \text{100} \quad \text{10} \quad \text{1} \\ 687 \\ + 248 \\ \hline 15 \\ 120 \\ 800 \\ \hline 935 \end{array}$$



A7: Column Addition

	100	10	1
	6	8	7
+	2	4	8
<hr/>			
	9	3	5
<hr/>			
	1	1	



MA1: Partitioning

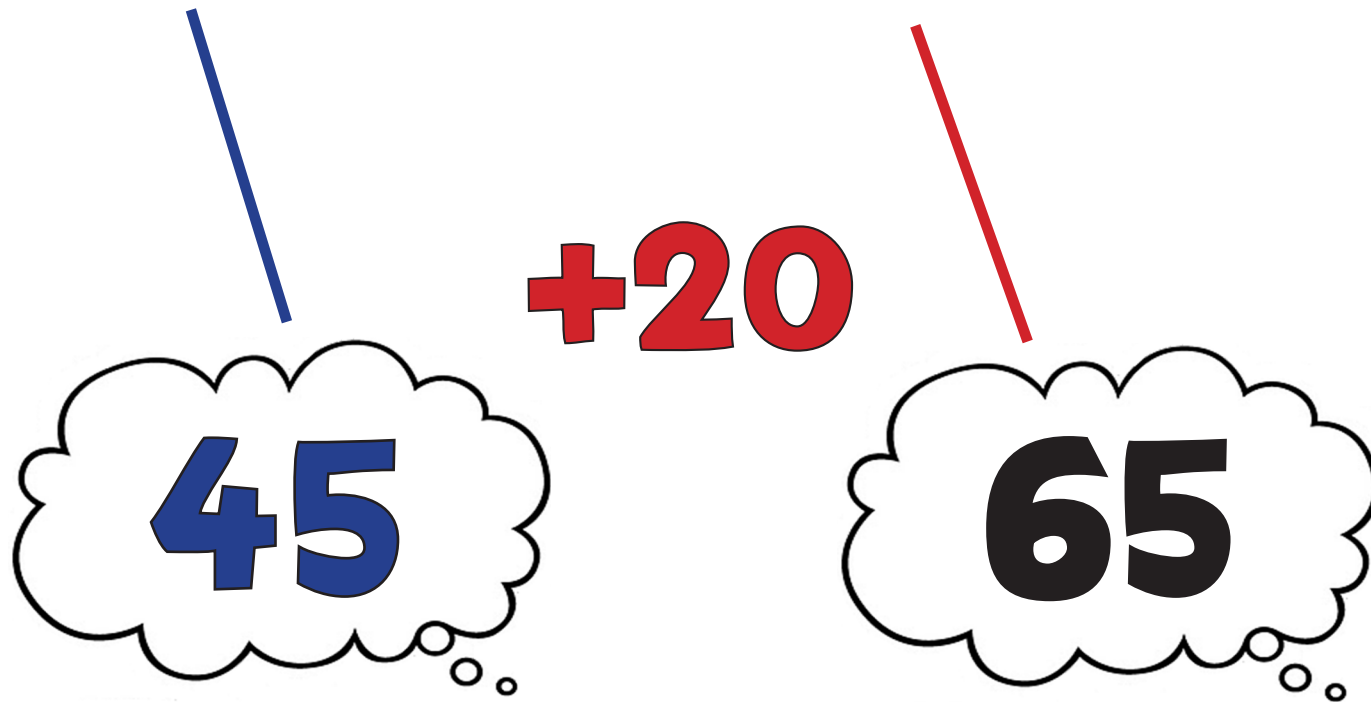
$$45 + 82 = 127$$

$120 + 7 = 127$



MA2: Counting On

$$45 + 20 = 65$$



MA3: Number Bonds

$$45 + 95 = 140$$

$$40 + 100 = 140$$



MA4: Double & Adjust

$$45 + 46 = 91$$

$$45 + 45 + 1$$

$$90 + 1 = 91$$



MA5: Round & Adjust

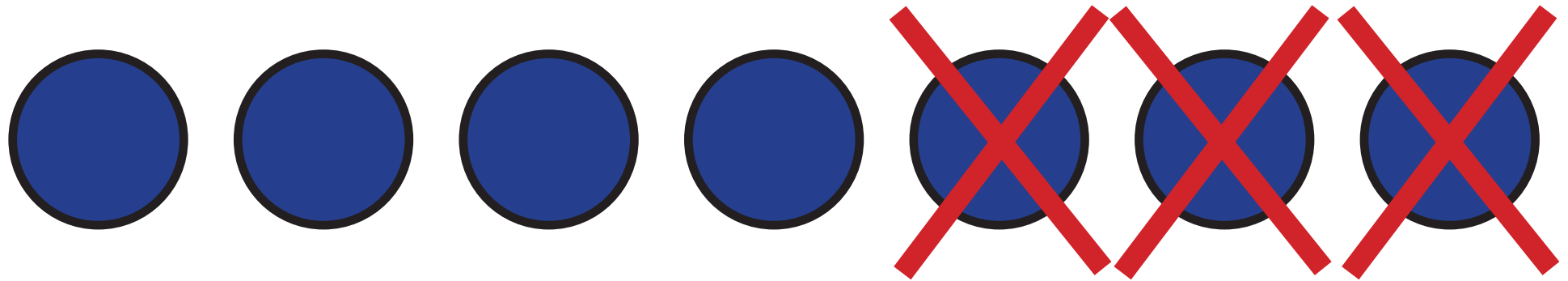
$$45 + 39 = 84$$

$$45 + 40 - 1$$

$$85 - 1 = 84$$



S1: Objects

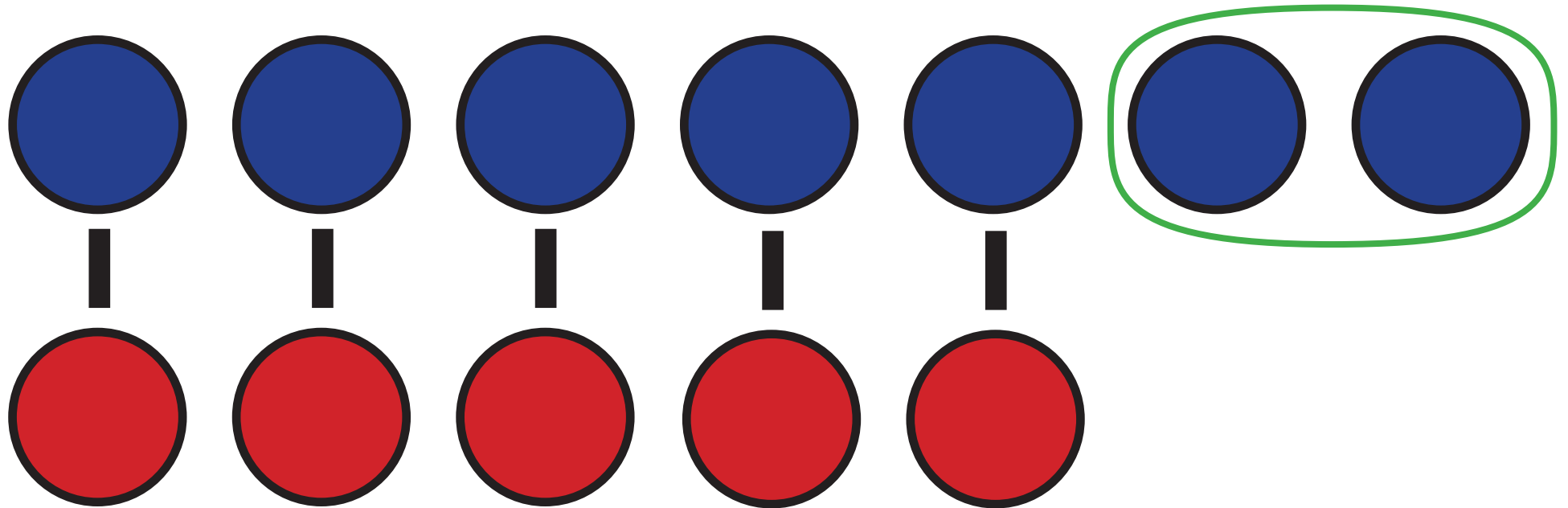


$$7 - 3 = 4$$

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



S2: What's the Difference?

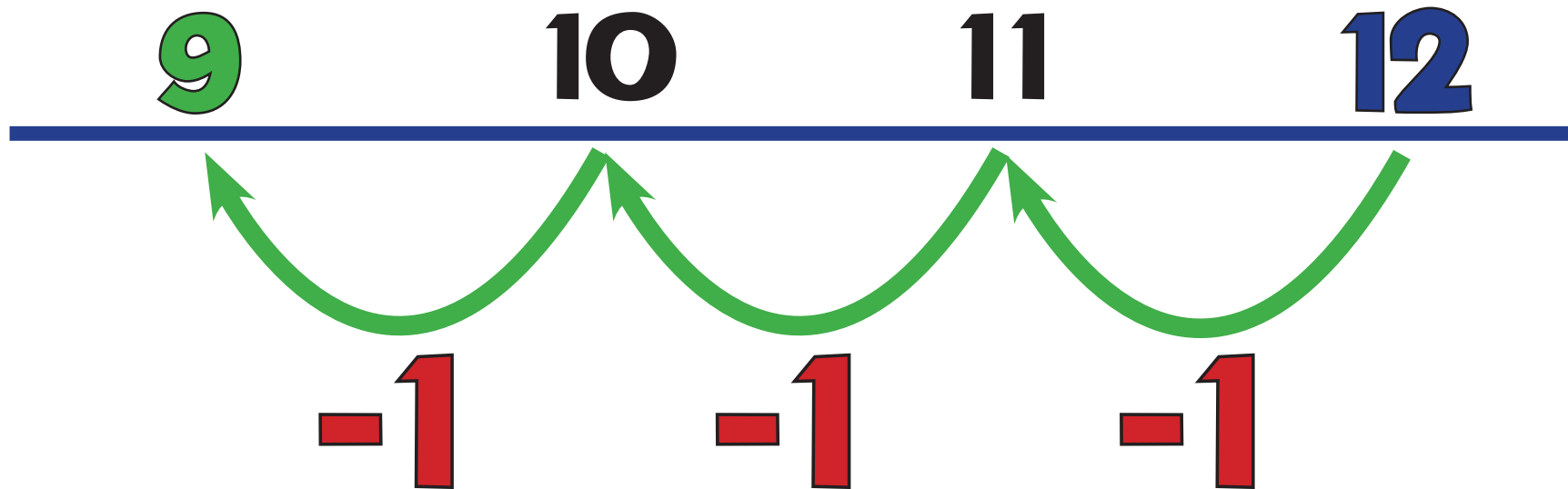


$$7 - 5 = 2$$

“How many more is 7 than 5? What is the difference?”



S3: Counting Back

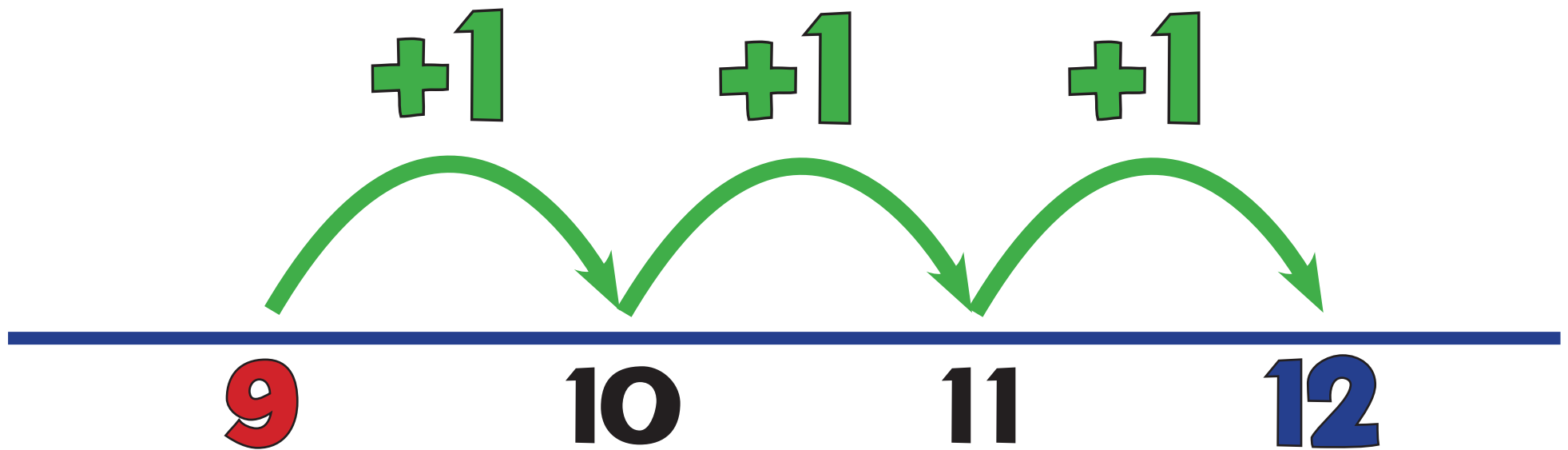


$$12 - 3 = 9$$

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



S4: Counting On

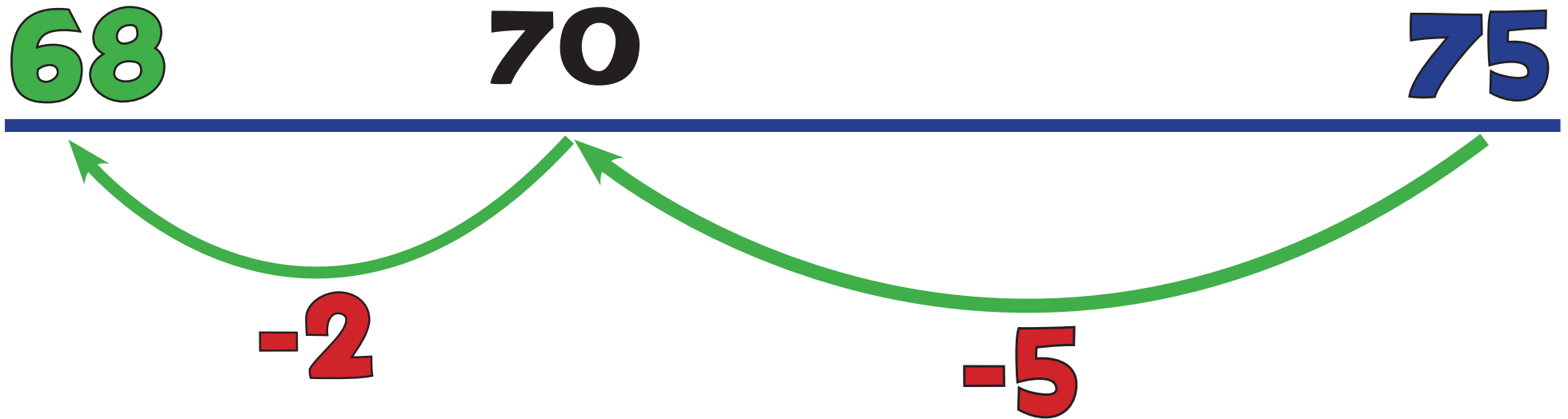


$$12 - 9 = 3$$

“How many more is 12 than 9? What is the difference?”



S5: Backwards Boing

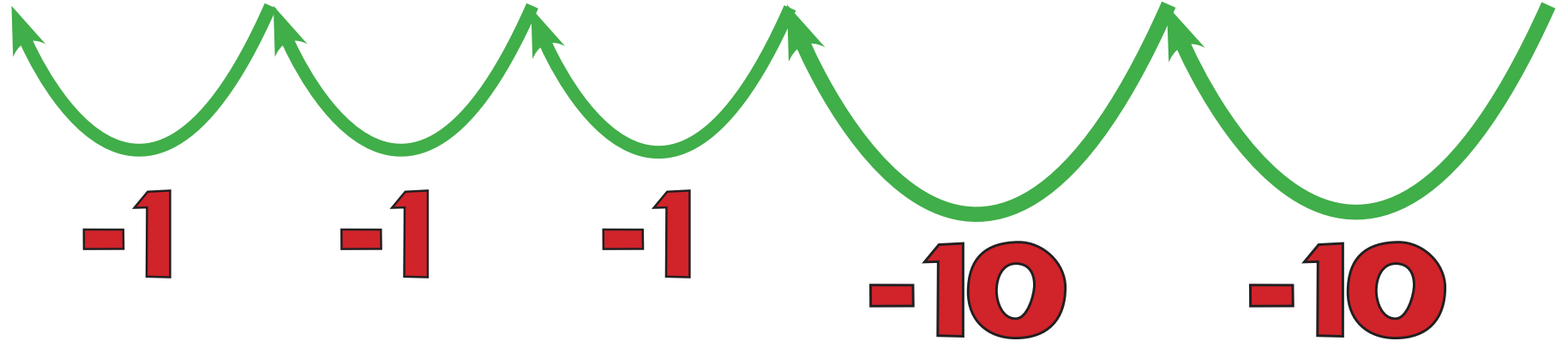


$$75 - 7 = 68$$



S6: Backwards Bounce

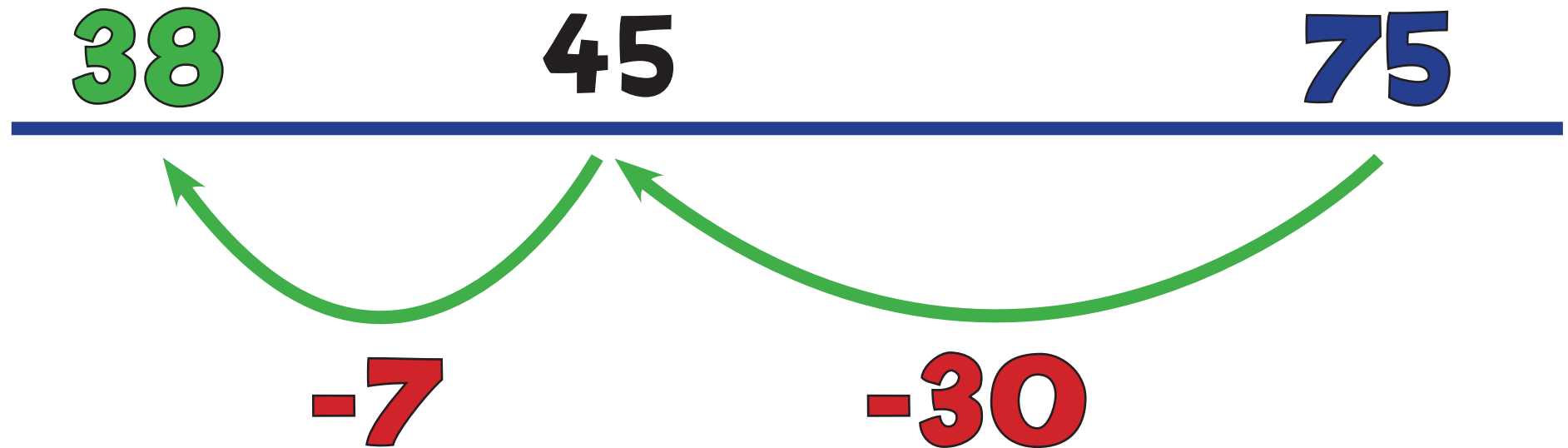
64 65 66 67 77 87



$$87 - 23 = 64$$



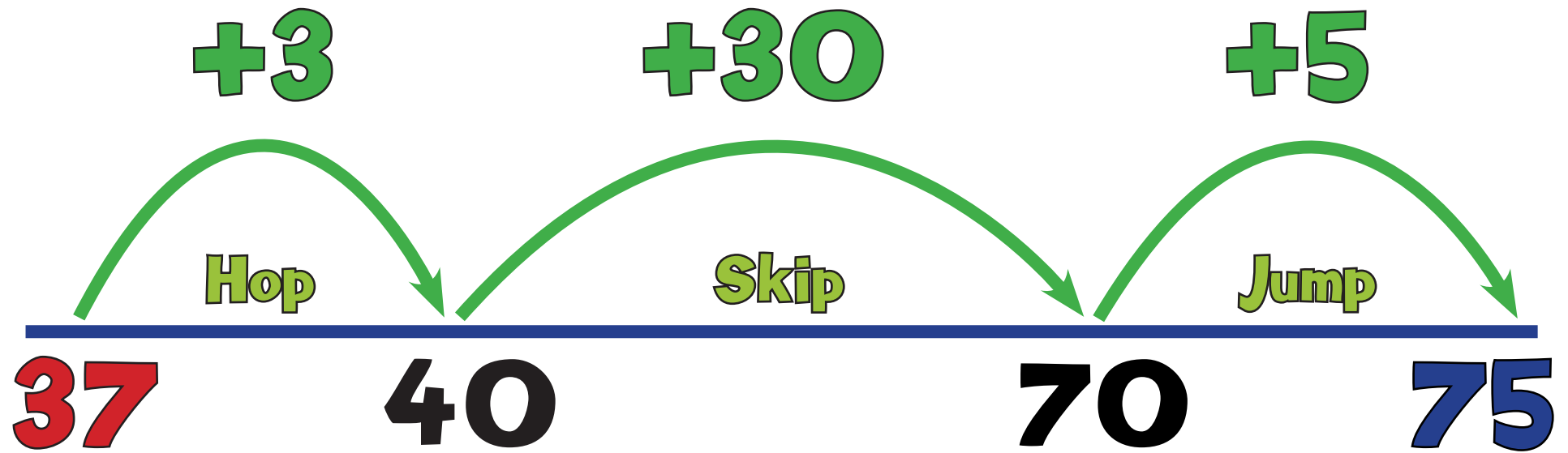
S7: Backwards Jump



$$75 - 37 = 38$$



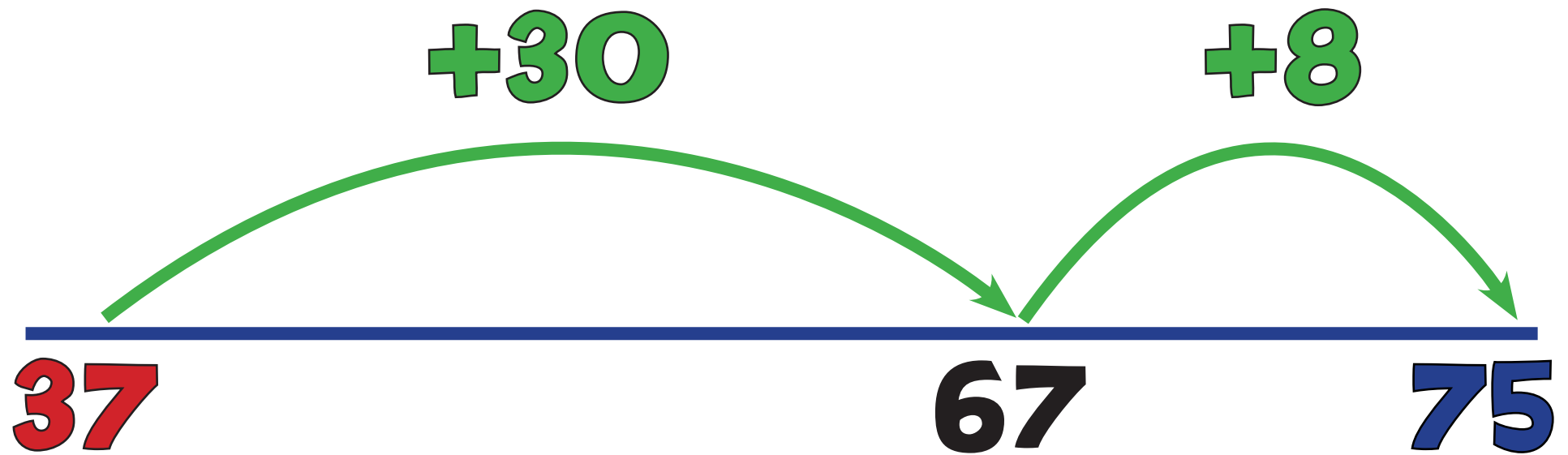
S8: Triple Jump!



$$75 - 37 = 38$$



S9: 10s Jump, 1s Jump!



$$75 - 37 = 38$$



S10: Expanded Column

Subtraction (100, 10, 1s)

$$723 - 356 = 367$$

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



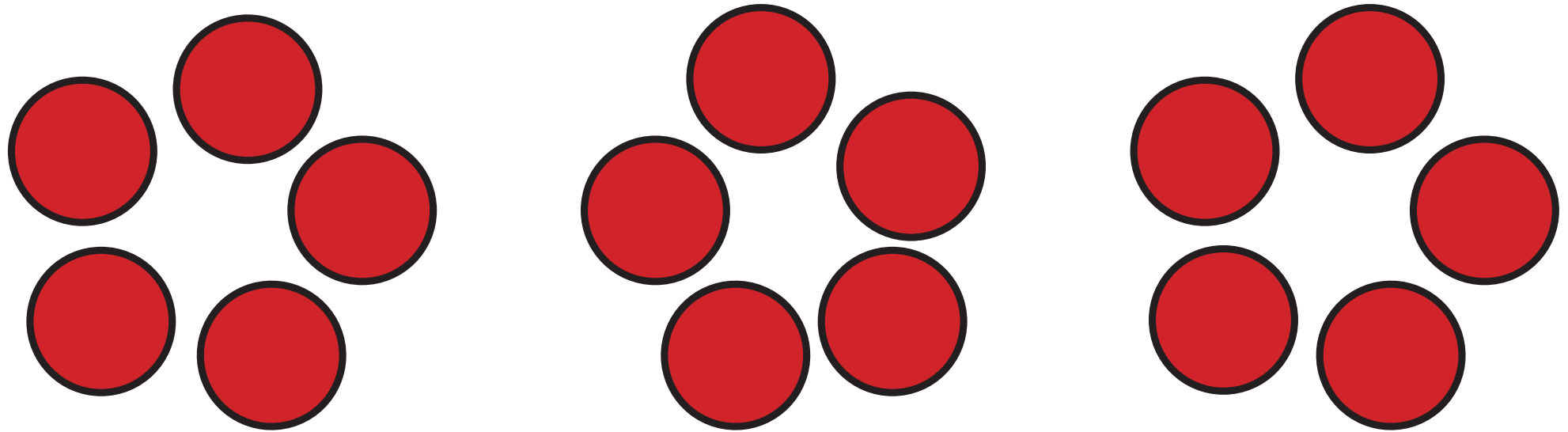
S11: Column Subtraction

$$\begin{array}{r} \text{100} \quad \text{10} \quad \text{1} \\ \text{6} \quad \text{11} \quad \text{1} \\ \text{7} \text{2} \text{3} \\ - \text{3} \text{5} \text{6} \\ \hline \text{3} \text{6} \text{7} \end{array}$$



M1: Repeated Addition

(Groups)



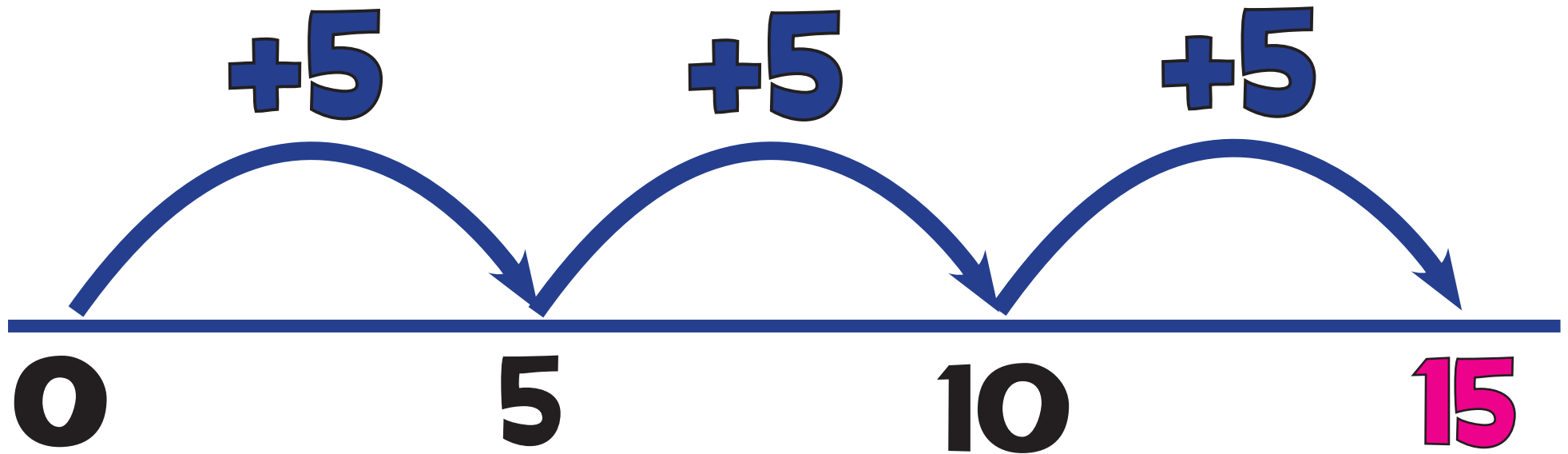
$$5 \times 3 = 5 + 5 + 5 = 15$$

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



M2: Repeated Addition

(Number Line)

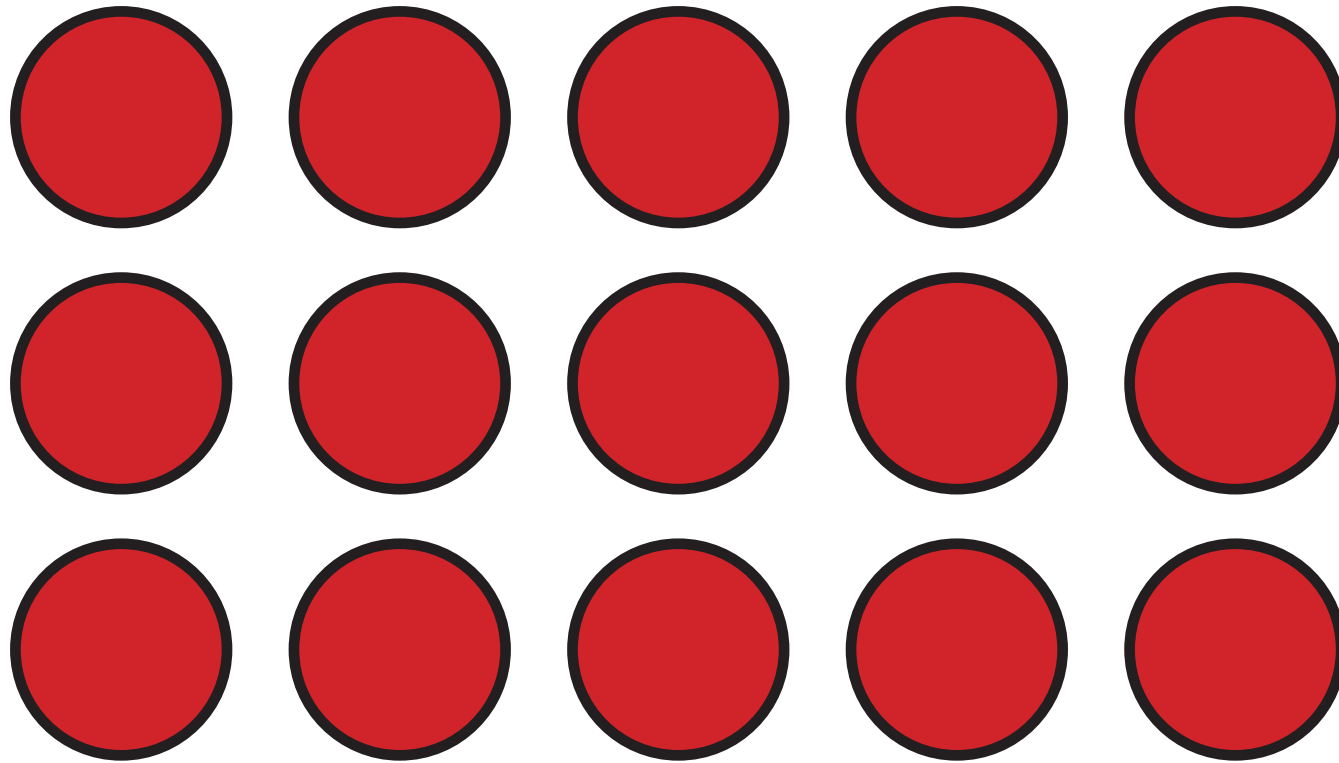


$$5 \times 3 = 5 + 5 + 5 = 15$$

“5 times 3” means “5, 3 times!”



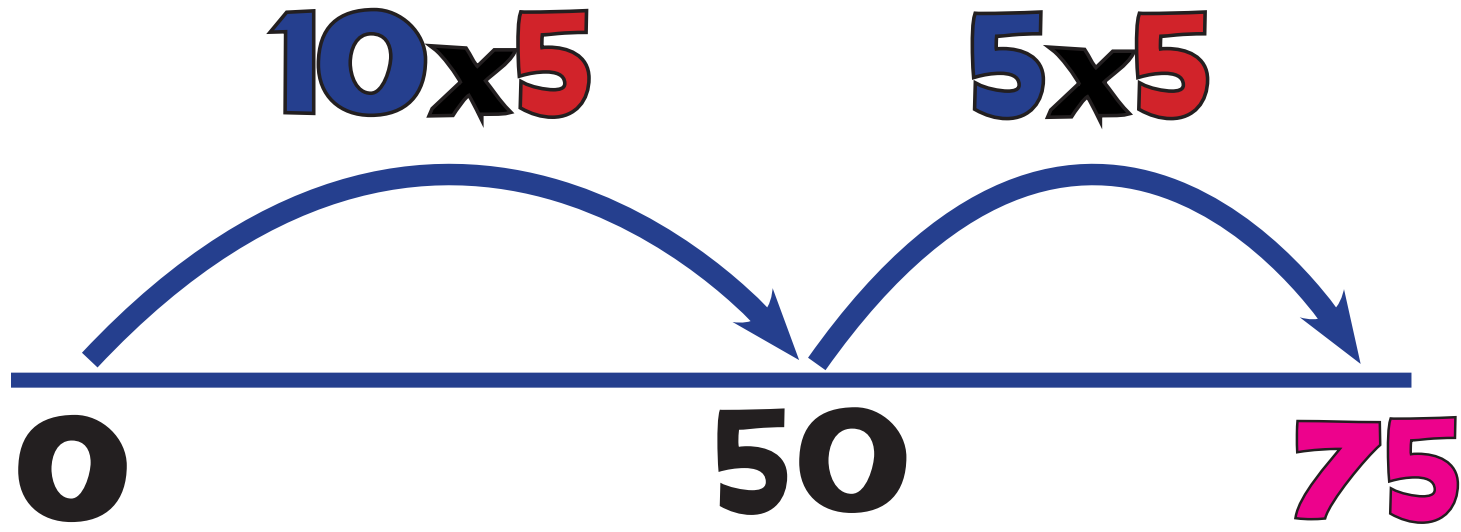
M3: Arrays



$$3 \times 5 = 15 \text{ or } 5 \times 3 = 15$$



M4: Multi Boing!



$$\begin{array}{r} 10 \times 5 = 50 \\ 5 \times 5 = 25 \\ \hline 75 \end{array}$$

$$15 \times 5 = 75$$



M5: Grid Method

Short Multiplication

$$15 \times 5 = 75$$

x	10	5
5	50	25

$$50 + 25 = 75$$



M6: Expanded Column

$$\begin{array}{r} 100 \quad 10 \quad 1 \\ 1 \quad 4 \quad 7 \\ \times \quad \quad 4 \\ \hline \end{array}$$

28

(4 x 7)

160

(4 x 40)

400

(4 x 100)

588



M7: Column Multiplication

$$\begin{array}{r} \text{100} \quad \text{10} \quad \text{1} \\ \text{1} \quad \text{4} \quad \text{7} \\ \times \quad \quad \text{4} \\ \hline \text{5} \quad \text{8} \quad \text{8} \\ \hline \text{1} \quad \text{2} \end{array}$$



M8: Grid Method

Long Multiplication

$$43 \times 65 = 2795$$

x	40	3
60	2400	180
5	200	15

$$2400 + 180 + 200 + 15 = 2795$$



MM1: Jump!

x100

x10

÷10

÷100

1000 100 10 1 ■ $\frac{1}{10}$ $\frac{1}{100}$

3400

340

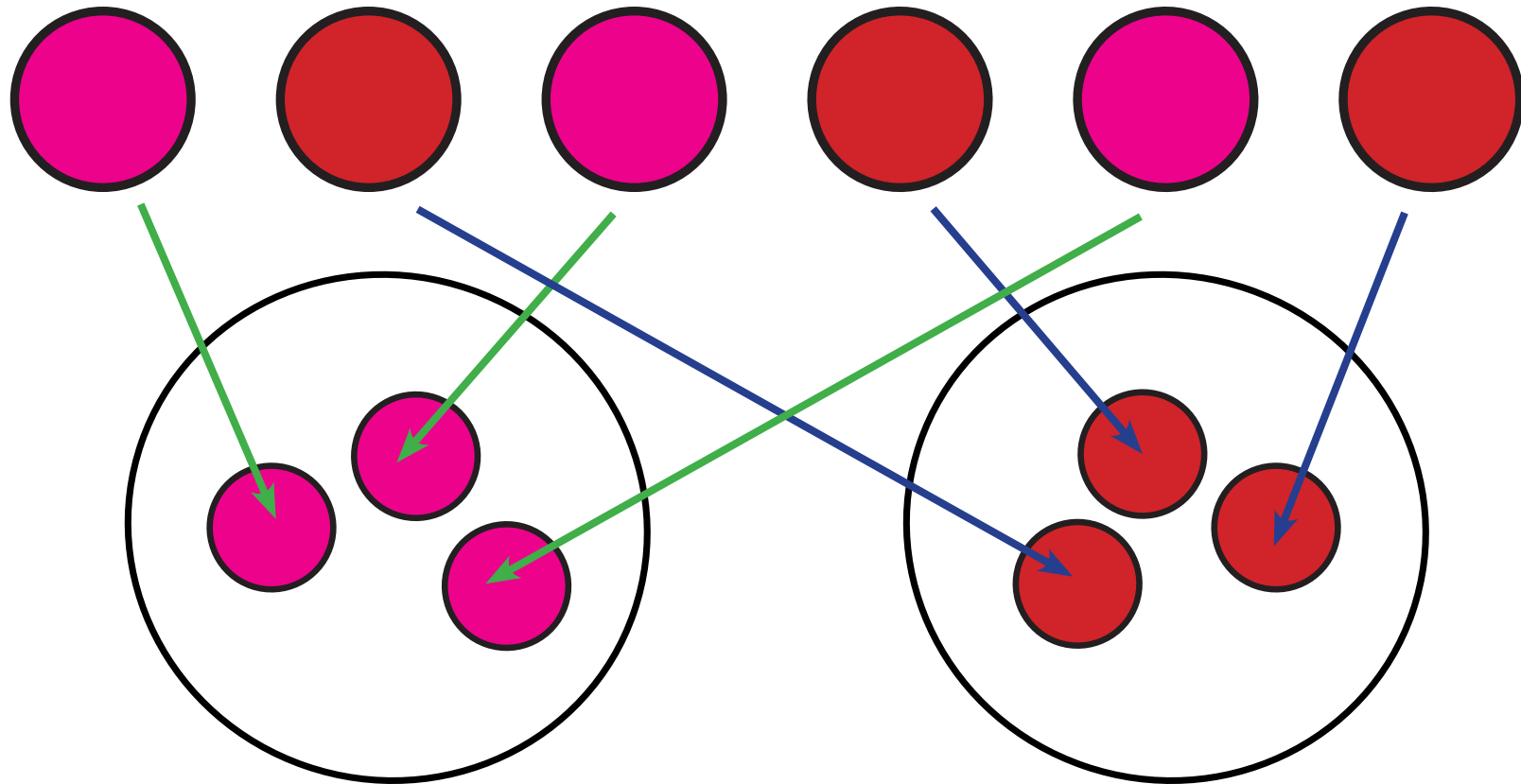
34

3.4

0.34



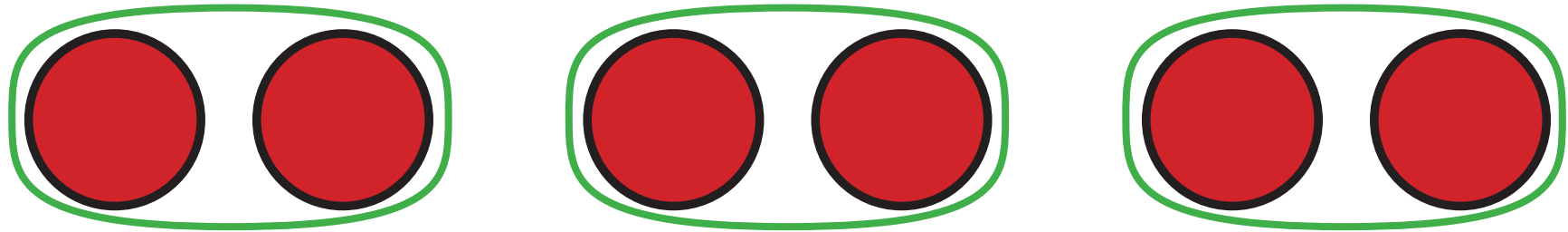
D1: Sharing (Concept)



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



D2: Grouping (Concept)



“How many groups of 2 can I make out of 6?”

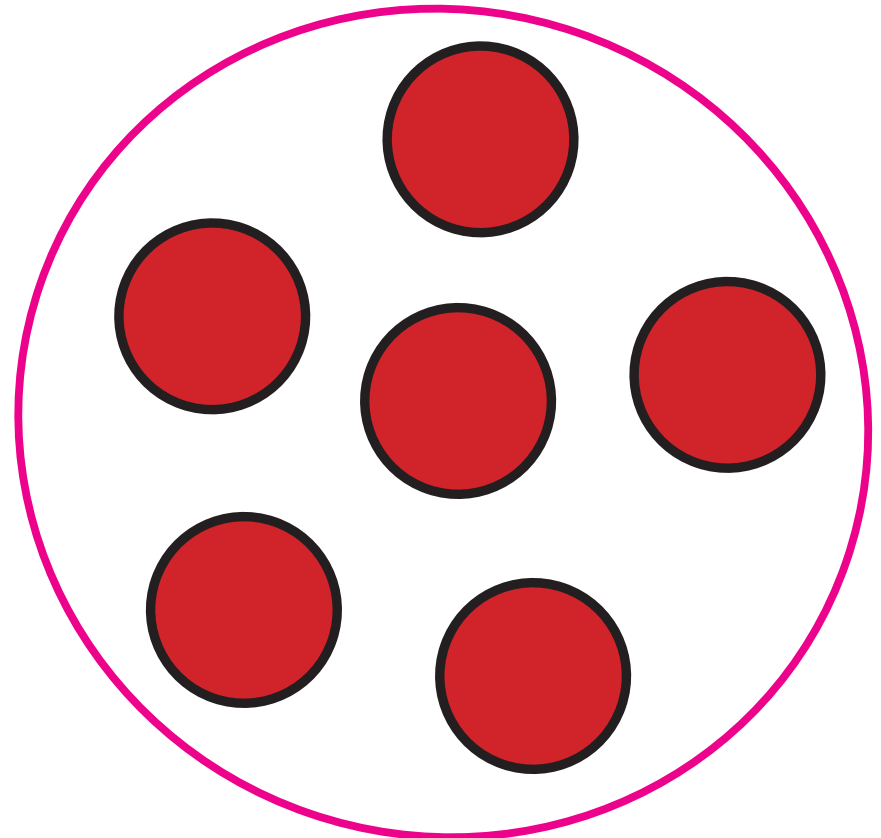
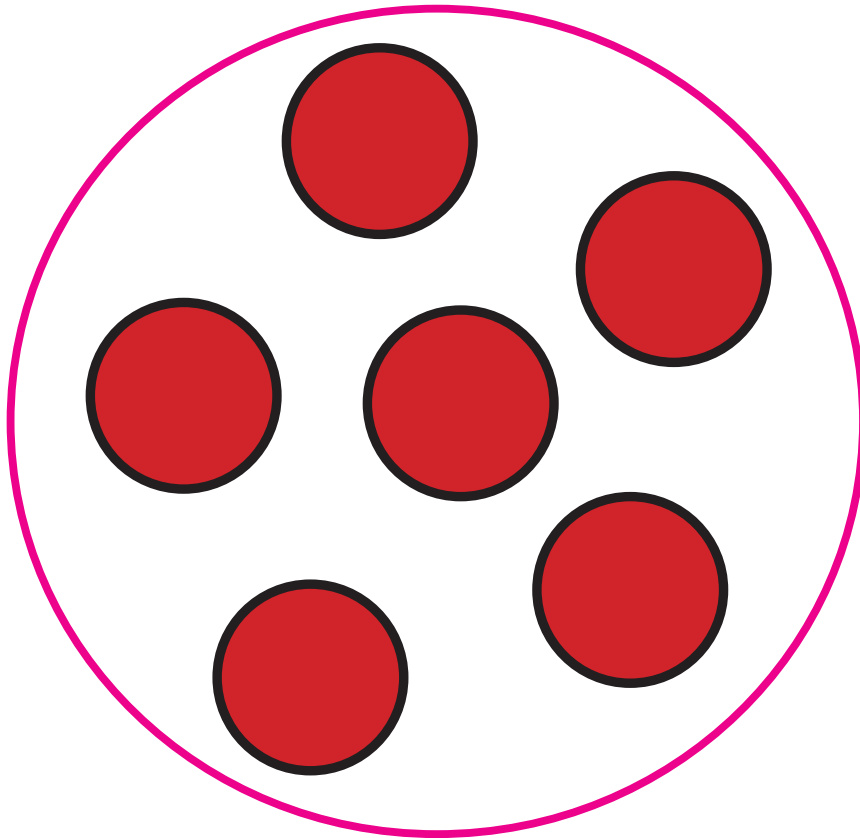
Answer: 3



D3: Division as Sharing

$$12 \div 2 = 6$$

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

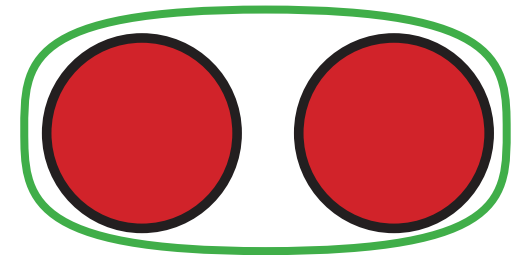
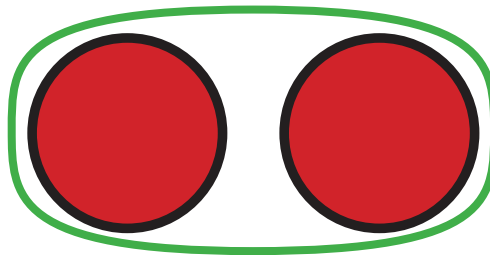
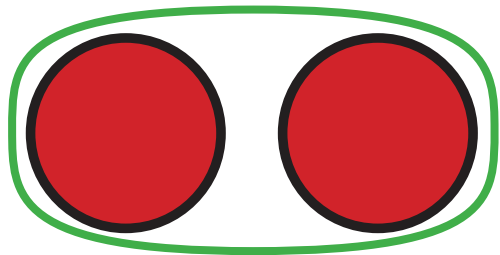
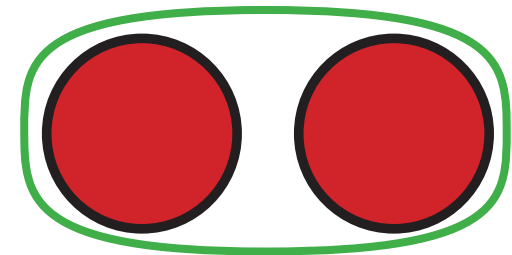
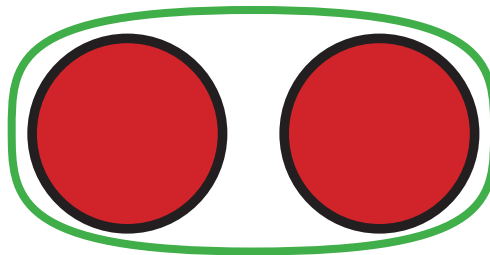
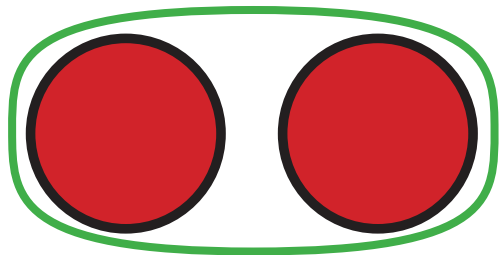


D4: Division as Grouping

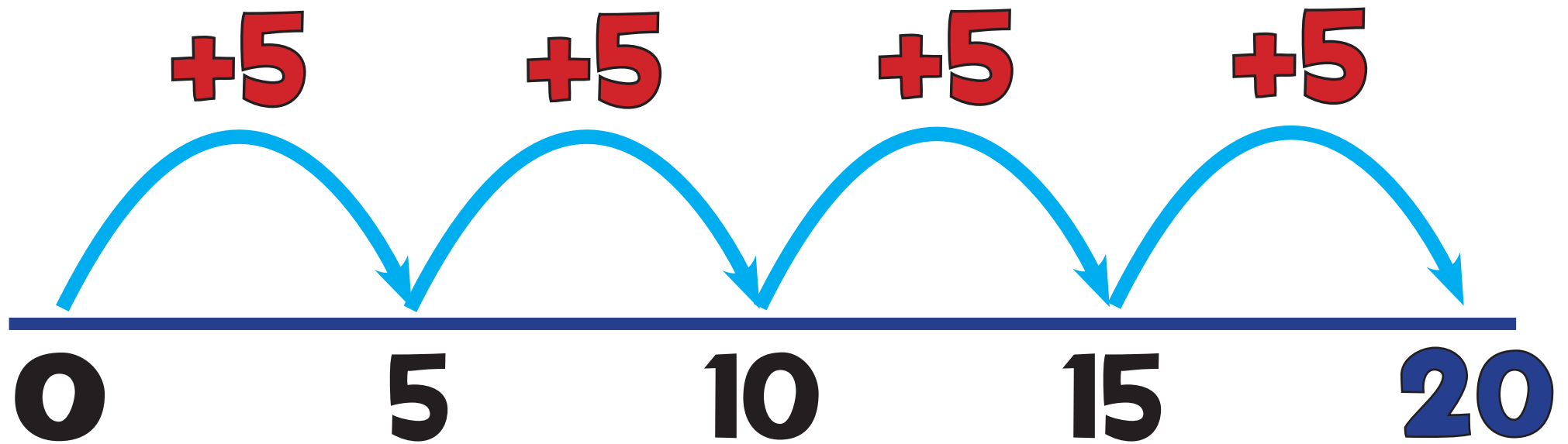
$$12 \div 2 = 6$$

“How many groups of 2
can I fit into 12?”

Answer: 6



D5: Grouping on a Number Line



“How many 5s in 20?”

Answer: 4

$$20 \div 5 = 4$$



D6: Grouping Grid

4	4	4	4	4
4				3

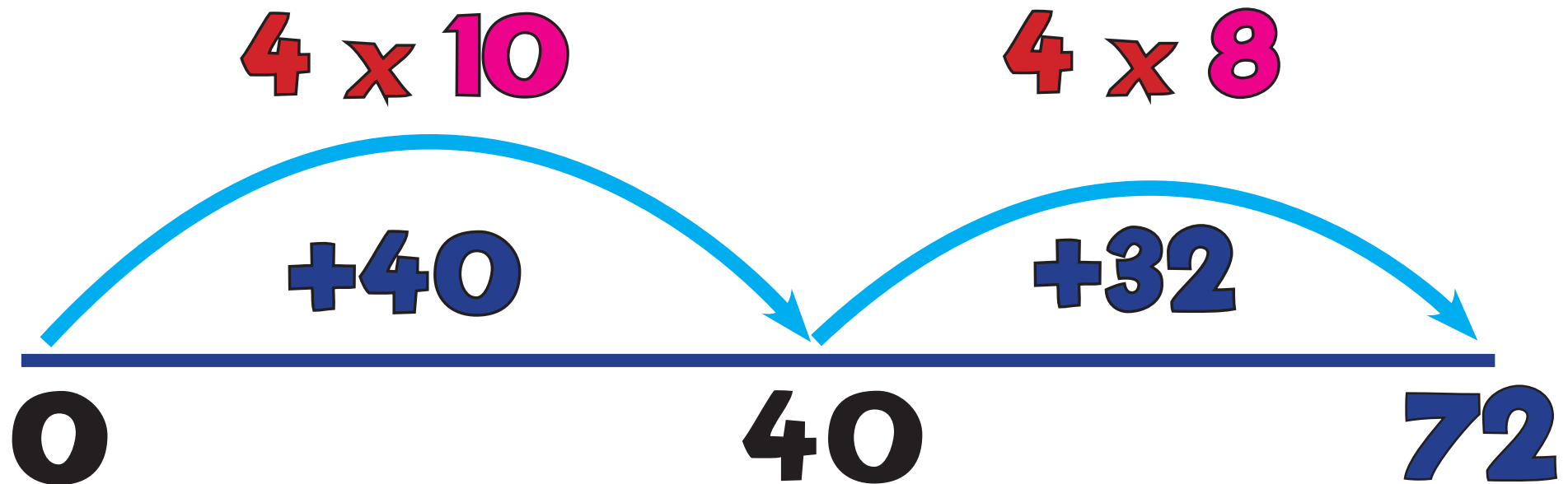
“How many times
can 1 fit (groups
of) 4 into 27?”

Answer: 6r3

$$27 \div 4 = 6r3$$



D7: Chunking Jump



$$72 \div 4 = 18$$

“How many 4s in 72?”

Answer: 18



D8: Find the Hunk!

$$72 \div 4 = 18$$

The
Hunk!

40

+

Chunk

32



10

+



8

$\div 4$

= 18



D9: Mega Hunk!

$$136 \div 4 = 34$$

Mega Hunk!		Chunk		
120	+	16		
↓		↓	÷ 4	
30	+	4	=	34



D10: Short Division

$$136 \div 4 = 34$$

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



D11: Chunking

$$\begin{array}{r} 34 \\ 4 \overline{) 136} \\ \underline{-120} \quad (4 \times 30) \\ 16 \\ \underline{-16} \quad (4 \times 4) \\ 0 \end{array}$$

$$136 \div 4 = 34$$



D12: Long Division

Short Division Method

$$\begin{array}{r} 26 \text{ r}21 \\ 37 \overline{) 983} \\ \underline{98} \\ 3 \end{array}$$

The diagram illustrates the short division method for 983 divided by 37. The divisor 37 is written in black on the left. The dividend 983 is written below a pink division bar. The quotient 26 is written in pink above the bar, and the remainder 21 is written in pink to the right of the bar. The digit 9 is written in blue above the first digit of the dividend, and the product 24 is written in red above the second digit of the dividend.



D13: Long Division

Chunking Method

$$\begin{array}{r} 26 \text{ r}21 \\ 37 \overline{) 983} \\ - 740 \quad (37 \times 20) \\ \hline 243 \\ - 222 \quad (37 \times 6) \\ \hline 21 \end{array}$$

$$983 \div 37 = 26 \text{ r}21$$



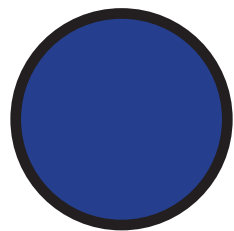
D14: Long Division

Traditional Method

$$\begin{array}{r} 26 \text{ r}21 \\ \hline 37 \overline{) 983} \\ \underline{- 74} \\ 243 \\ \underline{- 222} \\ 21 \end{array}$$

$$983 \div 37 = 26 \text{ r}21$$

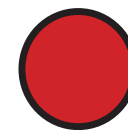




Sense of Number

Visual Calculations Policy

**Expanded Edition 2014 by Dave Godfrey,
Anthony Reddy and Laurence Hicks**



The following pages contain a snapshot of the 235 slide, Sense of Number Expanded Edition of the VCP. It contains a Counting Policy, leveled progression of strategies found in the Basic Edition and additional Subtraction & Multiplication Mental Method slides.

This edition is also available for bespoke preparation at additional cost of £130.

<p>Sense of Number Visual Calculation Policy</p> <p>Expanded Edition for Sense of Number Primary School September 2015</p> <p>Graphic Design by Dave Godfrey Compiled by the Sense of Number Maths Team</p> <p>For sale only within Sense of Number Primary School. "A picture is worth 1000 words!" www.senseofnumber.co.uk</p>	<p>Poster Guide Visual Calculation Policy</p>	<p>Guide to using a Visual Calculation Policy</p> <p>The Sense of Number Visual Calculation Policy provides a visual representation of a school's written and mental calculation policy.</p> <p>Typical user: Classroom: The slides are printed out (e.g. A4) and the appropriate slides are displayed within each classroom for continual reference or as a counting aid.</p> <p>Teacher Reference: The slides are printed out (e.g. 9 slides per A4 page) and stored in the teacher's planning folder.</p> <p>Parents: The slides are used to communicate to parents the methods the children are using (highlight and read within school) and to show the parents the methods their children are using at home.</p> <p>Please note the VCP should not be used outside of school.</p>	<p>KC1: Key Concepts!</p> <p>Addition +</p> $8 + 2 = 10$ <p>"What is 8 add 2?" Answer: 10</p> <p>Subtraction -</p> $8 - 2 = 6$ <p>"What is 8 subtract 2?" Answer: 6 "The difference between 8 and 2 is 6"</p>	<p>KC2: Key Concepts!</p> <p>Multiplication ×</p> $8 \times 2 = 16$ <p>"8 multiplied by 2" means "8, 2 times" or "2 groups of 8"</p> <p>Division ÷</p> $8 \div 2 = 4$ <p>"8 divided by 2" means "How many groups of 2 are there in 8?" Answer: 4 "8 shared into 2 lots is 4"</p>	<p>Calculation Vocabulary</p> <p>equivalent to = equals same value as = balance</p> <p>+ Addition × Multiplication - Subtraction ÷ Division</p>				
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Expanded Edition

<p>C1a: Number Order</p> <p>0 1 2 3 4 5</p> <p>The numbers must be said once and always in the conventional order.</p>	<p>C1b: At a Glance</p> <p>See at a glance how many objects correct number</p>	<p>C2a: Number Match</p> <p>One to One Correspondence</p>	<p>C2b: Counting Objects</p> <p>Start</p>	<p>C2c: Order Arrangement</p> <p>Arrangement Evidence</p>			<p>C3: How Many?</p> <p>Find number in the total</p>		
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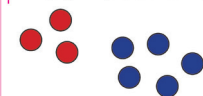
<p>C4: Arranging</p> <p>Sets of 5</p>	<p>C4a: Arranging</p> <p>Sets of 5 (Non-Linear)</p>	<p>C4b: Arranging</p> <p>Sets of 5 (Non-Linear)</p>	<p>C4c: Arranging</p> <p>Sets of 5 (Non-Linear)</p>	<p>C5: Counting Forward</p>	<p>C6: Counting Back</p>	<p>C7: Counting Back</p>	<p>C8: Counting in Steps</p>		
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<p>Sense of Number Calculation Cards</p> <p>by Dave Godfrey</p> <p>www.senseofnumber.co.uk Tel: 01904 778848</p> <p>The following slides show the calculation $43 + 24$ using a variety of resources and manipulatives.</p>	<p>A: Base 10</p> $43 + 24 = 67$	<p>B: Arrow Cards</p> $43 + 24 = 67$	<p>C: Hundred Square</p> $43 + 24 = 67$ <table border="1"> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> <tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr> </table>	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	<p>D: Numicon</p> $43 + 24 = 67$	<p>E: Place Value Counters</p> $43 + 24 = 67$	<p>F: Money</p> $43 + 24 = 67$	<p>G: Abacus</p> $43 + 24 = 67$	<p>H: Number Line</p> $43 + 24 = 67$	
41	42	43	44	45	46	47	48	49	50																														
51	52	53	54	55	56	57	58	59	60																														
61	62	63	64	65	66	67	68	69	70																														

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Y1	A1: Objects & Pictures  "If I have 1 and then 5 more, how many altogether? Answer!"					A	Addition Calculation $4 + 2 = 6$ 4 (add) 2 (equals) 6 addend total + addend sum	Addition Vocabulary increase add total + plus addition more + count on sum altogether
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Y1	Number 1st  $3 + 3 = 6$	A2: Counting On $+1 +1 +1$ 5 6 7 8 $5 + 3 = 8$						
Y1		Counting On $+3 +1 +1$ 8 9 10 11 12 $8 + 5 = 13$						

Y2		A2b: Counting On $+3 +3 +1 +1$ 61 62 63 $58 + 5 = 63$						
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Y2	Forwards Jump $43 + 24$ $+10 +10 +1 +1$ 43 53 63 64	Partitioning $40 + 4 = 44$ 20 4	A5: Partition Jot $60 + 7 = 67$ 60 7	(A6: Expanded Column) $43 + 24$ 43 +24 67	(A7: Column Addition) $43 + 24$ 43 +24 67			
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Y2	Forwards Jump $57 + 25 = 82$ $+20 +5$ 57 77 82	Partitioning $57 + 25 = 82$ $50 + 20 = 70$ $7 + 5 = 12$ 82	A5a: Partition Jot $57 + 25 = 82$ $70 + 12$	(A6: Expanded Column) $57 + 25$ 57 +25 77 12 82	(A7: Column Addition) $57 + 25$ 57 +25 82			
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Y2/3	A3b: Forwards Jump $86 + 48 = 134$ $+40 +8$ 86 126 134	A4b: Partitioning $86 + 48 = 134$ $80 + 40 = 120$ $6 + 8 = 14$ 134	A5b: Partition Jot $86 + 48 = 134$ $120 + 14$	(A6: Expanded Column) $86 + 48$ 86 +48 104 120 134	(A7: Column Addition) $86 + 48$ 86 +48 134			
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Y3	A3c: Forwards Jump $687 + 248 = 935$ $+200 +40 +8$ 687 887 927 935	A4c: Partitioning $687 + 248 = 935$ $600 + 200 = 800$ $80 + 40 = 120$ $7 + 8 = 15$ 935	A5c: Partition Jot $687 + 248 = 935$ $800 + 120 + 15$	A6: Expanded Column $687 + 248$ 687 +248 835 15 120 800 935	A7: Column Addition $687 + 248$ 687 +248 935			
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Expanded Edition

Y4

A5d: Partition Jot

$$4873 + 3762 = 8635$$

$$7000 + 1500 + 130 + 5$$

A7d: Column Addition

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

Y5

Expanded

Y5

A3g: Decimal Jump

$$4.8 + 3.0 = 7.8$$

$$7.8 + 0.8 = 8.6$$

A5f: Partition Jot

$$4.8 + 3.8 = 8.6$$

$$4 + 3 = 7$$

$$0.8 + 0.8 = 1.6$$

$$7 + 1.6 = 8.6$$

A5f: Partition Jot

$$4.8 + 3.8 = 8.6$$

$$4 + 3 = 7$$

$$0.8 + 0.8 = 1.6$$

$$7 + 1.6 = 8.6$$

A7e: Column Addition

$$\begin{array}{r} 4.8 \\ + 3.8 \\ \hline 8.6 \end{array}$$

Y5

A3g: Decimal Jump

$$5.65 + 3.29 = 8.94$$

A5g: Partition Jot

$$5.65 + 3.29 = 8.94$$

$$8 + 0.9 + 0.04 = 8.94$$

A5g: Partition Jot

$$5.65 + 3.29 = 8.94$$

$$8 + 0.9 + 0.04 = 8.94$$

A7g: Column Addition

$$\begin{array}{r} 5.65 \\ + 3.29 \\ \hline 8.94 \end{array}$$

Y5

Edition

A5h: Partition Jot

$$700 + 50 + 2 = 752$$

$$120 + 10 + 2 = 132$$

A7h: Column Addition

$$\begin{array}{r} 700 \\ + 50 \\ + 2 \\ \hline 752 \end{array}$$

Y5

A5i: Partition Jot

$$£38.25 + £27.46 = £65.71$$

$$£65.00 + £0.71$$

A7i: Column Addition

$$\begin{array}{r} £38.25 \\ + £27.46 \\ \hline £65.71 \end{array}$$

Y5

A7j: Column Addition

$$73.4 + 5.67 = 79.07$$




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




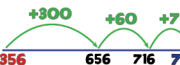

<p>Y1</p>	<p>S1: Objects</p>  <p>$7 - 3 = 4$</p> <p>"What do I get if I take 3 away from 7? Answer: 4"</p>					<p>S</p>	<p>Subtraction Calculation</p> <p>$6 - 2 = 4$</p> <p>(Subtract) (equals)</p> <p>minuend difference</p> <p>subtrahend</p>	<p>Subtraction Vocabulary</p> <p>count back decrease</p> <p>minus subtract less</p> <p>count on take away</p> <p>difference between</p>
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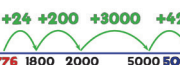
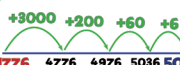
<p>Y1</p>	<h1>Expanded</h1>						
<p>Y2</p>							

<p>Y2</p>		<p>S2: What's the Difference?</p>  <p>$7 - 5 = 2$</p>	<p>S3: Counting Back</p>  <p>$9 - 3 = 6$</p>	<p>S4: Counting On</p>  <p>$9 + 3 = 12$</p>	<p>S4a: Counting On</p>  <p>$5 + 3 = 8$</p>	<p>S5: Backwards Bounce</p>  <p>$87 - 23 = 64$</p>	<p>(S8: Triple Jump!)</p>  <p>$23 + 60 + 4 = 87$</p>	<p>(S9: 10s Jump, 1s Jump!)</p>  <p>$23 + 60 + 4 = 87$</p>
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<p>Y2</p>		<p>(S10: Expanded Column)</p> <p>$87 - 23 = 64$</p> $\begin{array}{r} 87 \\ - 23 \\ \hline 64 \end{array}$	<p>(S11: Column Subtraction)</p> $\begin{array}{r} 87 \\ - 23 \\ \hline 64 \end{array}$	<h1>dition</h1>					
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<p>Y3</p>		<p>S8b: Quadruple Jump</p>  <p>$56 + 4 + 40 + 30 + 2 = 132$</p>	<p>(S8b: Quadruple Jump)</p>  <p>$56 + 4 + 40 + 30 + 2 = 132$</p>	<p>(S9: 10s Jump, 1s Jump)</p>  <p>$56 + 70 + 6 = 132$</p>	<p>(S10: Expanded Column)</p> <p>$132 - 56 = 76$</p> $\begin{array}{r} 132 \\ - 56 \\ \hline 76 \end{array}$	<p>(S11: Column Subtraction)</p> $\begin{array}{r} 132 \\ - 56 \\ \hline 76 \end{array}$		
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<p>Y3</p>		<p>S8c: Big Jump!</p>  <p>$356 + 44 + 40 + 300 + 23 = 723$</p>	<p>(S8c: Big Jump!)</p>  <p>$356 + 44 + 40 + 300 + 23 = 723$</p>	<p>S9c: 100s, 10s, 1s Jump</p>  <p>$356 + 300 + 60 + 7 = 723$</p>	<p>(S9c: 100s, 10s, 1s Jump)</p>  <p>$356 + 300 + 60 + 7 = 723$</p>	<p>(S10: Expanded Column)</p> <p>$723 - 356 = 367$</p> $\begin{array}{r} 723 \\ - 356 \\ \hline 367 \end{array}$	<p>(S11: Column Subtraction)</p> $\begin{array}{r} 723 \\ - 356 \\ \hline 367 \end{array}$	
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<p>Y4</p>		<p>S8d: Quad Jump Extreme</p>  <p>$1776 + 24 + 200 + 3000 + 42 = 5042$</p>	<p>(S8d: Quad Jump Extreme)</p>  <p>$1776 + 24 + 200 + 3000 + 42 = 5042$</p>	<p>S9d: 1000s, 100s, 10s, 1s Jump</p>  <p>$1776 + 3000 + 200 + 60 + 6 = 5042$</p>	<p>(S9d: 1000s, 100s, 10s, 1s Jump)</p>  <p>$1776 + 3000 + 200 + 60 + 6 = 5042$</p>	<p>(S11d: Column Subtraction)</p> $\begin{array}{r} 5042 \\ - 1776 \\ \hline 3266 \end{array}$	<p>(S11d: Column Subtraction)</p> $\begin{array}{r} 5042 \\ - 1776 \\ \hline 3266 \end{array}$	
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Y5

S1e: Column Subtraction

$$\begin{array}{r} 742831 \\ - 427358 \\ \hline 315473 \end{array}$$

Y5

S8f: Decimal T-J!

S9f: Is Jump, Tenths Jump!

S1f: Column Subtraction

$$\begin{array}{r} 13.4 \\ - 8.7 \\ \hline 4.7 \end{array}$$

Y5

S1g: Column Subtraction

$$\begin{array}{r} 72.5 \\ - 47.3 \\ \hline 24.58 \end{array}$$

Y5

S11h: Column Subtraction

$$12.4 - 5.97 = 6.43$$

$$\begin{array}{r} 12.40 \\ - 5.97 \\ \hline 6.43 \end{array}$$

Expanded

Edition

MS

MS1: Counting On

$$46 - 21 = 25$$

MS1: Counting On

$$75 - 47 = 28$$

MS1: Counting On

$$84 - 29 = 55$$

MS2a: Counting On

$$75 - 47 = 28$$


Y1	(M1: Groups) "2 groups of 5 counters makes 10 counters altogether"	(M3: Arrays) "2 groups of 5 counters" or "5 groups of 2 counters" = "10 counters altogether"			M	Multiplication Calculation $4 \times 2 = 8$ (multiplied by) (equals) multiplicand product multiplier	Multiplication Vocabulary groups of product multiple times double lots of X multiply repeated addition
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Y2	Addition (Groups) $5 + 5 + 5 = 15$	M2: Repeated Addition (Number Line) $0 \quad 5 \quad 10 \quad 15$ $+5 \quad +5 \quad +5$ $3 \times 5 = 15$	M3: Arrays $3 \times 5 = 15$				
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Y2	MF: 2x Table Facts $2 \times 1 = 2$ $2 \times 2 = 4$ $2 \times 3 = 6$ $2 \times 4 = 8$ $2 \times 5 = 10$ $2 \times 6 = 12$ $2 \times 7 = 14$ $2 \times 8 = 16$ $2 \times 9 = 18$ $2 \times 10 = 20$ $2 \times 11 = 22$ $2 \times 12 = 24$	Table Facts $3 \times 1 = 3$ $3 \times 2 = 6$ $3 \times 3 = 9$ $3 \times 4 = 12$ $3 \times 5 = 15$ $3 \times 6 = 18$ $3 \times 7 = 21$ $3 \times 8 = 24$ $3 \times 9 = 27$ $3 \times 10 = 30$ $3 \times 11 = 33$ $3 \times 12 = 36$	MF: 10x $10 \times 1 = 10$ $10 \times 2 = 20$ $10 \times 3 = 30$ $10 \times 4 = 40$ $10 \times 5 = 50$ $10 \times 6 = 60$ $10 \times 7 = 70$ $10 \times 8 = 80$ $10 \times 9 = 90$ $10 \times 10 = 100$ $10 \times 11 = 110$ $10 \times 12 = 120$				
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Y3	MF: 3x Table Facts $3 \times 1 = 3$ $3 \times 2 = 6$ $3 \times 3 = 9$ $3 \times 4 = 12$ $3 \times 5 = 15$ $3 \times 6 = 18$ $3 \times 7 = 21$ $3 \times 8 = 24$ $3 \times 9 = 27$ $3 \times 10 = 30$ $3 \times 11 = 33$ $3 \times 12 = 36$	MF: 4x Table Facts $4 \times 1 = 4$ $4 \times 2 = 8$ $4 \times 3 = 12$ $4 \times 4 = 16$ $4 \times 5 = 20$ $4 \times 6 = 24$ $4 \times 7 = 28$ $4 \times 8 = 32$ $4 \times 9 = 36$ $4 \times 10 = 40$ $4 \times 11 = 44$ $4 \times 12 = 48$	MF: 8x Table Facts $8 \times 1 = 8$ $8 \times 2 = 16$ $8 \times 3 = 24$ $8 \times 4 = 32$ $8 \times 5 = 40$ $8 \times 6 = 48$ $8 \times 7 = 56$ $8 \times 8 = 64$ $8 \times 9 = 72$ $8 \times 10 = 80$ $8 \times 11 = 88$ $8 \times 12 = 96$				
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Y3	M4: Multiplication (Number Line) $5 \times 5 = 25$	M5: Grid Method $45 \times 6 = 258$ <table border="1"><tr><td>45</td><td>6</td></tr><tr><td>270</td><td>18</td></tr></table> $270 + 18 = 258$	45	6	270	18	M6: Expanded Column $43 \times 6 = 258$ $43 \times 6 = 258$ $18 \quad (6 \times 3)$ $240 \quad (6 \times 40)$ 258	(M7: Column Multiplication) $15 \times 5 = 75$			
45	6										
270	18										

Y4	MF: 6x Table $6 \times 1 = 6$ $6 \times 2 = 12$ $6 \times 3 = 18$ $6 \times 4 = 24$ $6 \times 5 = 30$ $6 \times 6 = 36$ $6 \times 7 = 42$ $6 \times 8 = 48$ $6 \times 9 = 54$ $6 \times 10 = 60$ $6 \times 11 = 66$ $6 \times 12 = 72$	MF: 7x Table $7 \times 1 = 7$ $7 \times 2 = 14$ $7 \times 3 = 21$ $7 \times 4 = 28$ $7 \times 5 = 35$ $7 \times 6 = 42$ $7 \times 7 = 49$ $7 \times 8 = 56$ $7 \times 9 = 63$ $7 \times 10 = 70$ $7 \times 11 = 77$ $7 \times 12 = 84$	MF: 9x Table $9 \times 1 = 9$ $9 \times 2 = 18$ $9 \times 3 = 27$ $9 \times 4 = 36$ $9 \times 5 = 45$ $9 \times 6 = 54$ $9 \times 7 = 63$ $9 \times 8 = 72$ $9 \times 9 = 81$ $9 \times 10 = 90$ $9 \times 11 = 99$ $9 \times 12 = 108$	M5b: Grid Method $45 \times 6 = 258$ <table border="1"><tr><td>45</td><td>6</td></tr><tr><td>270</td><td>18</td></tr></table> $270 + 18 = 258$	45	6	270	18	M6: Expanded Column $43 \times 6 = 258$ $43 \times 6 = 258$ $18 \quad (6 \times 3)$ $240 \quad (6 \times 40)$ 258	Column Multiplication $43 \times 6 = 258$	
45	6										
270	18										

Y4	MF: 11x Table Facts $11 \times 1 = 11$ $11 \times 2 = 22$ $11 \times 3 = 33$ $11 \times 4 = 44$ $11 \times 5 = 55$ $11 \times 6 = 66$ $11 \times 7 = 77$ $11 \times 8 = 88$ $11 \times 9 = 99$ $11 \times 10 = 110$ $11 \times 11 = 121$ $11 \times 12 = 132$	MF: 12x Table Facts $12 \times 1 = 12$ $12 \times 2 = 24$ $12 \times 3 = 36$ $12 \times 4 = 48$ $12 \times 5 = 60$ $12 \times 6 = 72$ $12 \times 7 = 84$ $12 \times 8 = 96$ $12 \times 9 = 108$ $12 \times 10 = 120$ $12 \times 11 = 132$ $12 \times 12 = 144$		M5b: Grid Method $147 \times 4 = 588$ <table border="1"><tr><td>147</td><td>4</td></tr><tr><td>588</td><td></td></tr></table> $400 + 160 + 28 = 588$	147	4	588		M6: Expanded Column $147 \times 4 = 588$ $147 \times 4 = 588$ $28 \quad (4 \times 7)$ $160 \quad (4 \times 40)$ $400 \quad (4 \times 100)$ 588	M7: Column Multiplication $147 \times 4 = 588$	M7a: Column Multiplication $3647 \times 4 = 14588$
147	4										
588											

Y5			M8: Grid Method $43 \times 65 = 2795$ <table border="1"><tr><td>43</td><td>65</td></tr><tr><td>215</td><td>2580</td></tr></table> $2400 + 180 + 200 + 15 = 2795$	43	65	215	2580	M9: Long Multiplication $43 \times 65 = 2795$ $43 \times 65 = 2795$ $215 \quad (5 \times 43)$ $+ 2580 \quad (60 \times 43)$ 2795		
43	65									
215	2580									

Expanded Edition

Y5

M8a: Grid Method
Long Multiplication

$$243 \times 68 = 16,524$$

x	200	40	3
60	12000	2400	180
8	1600	320	24

$$14580 + 1944 = 16,524$$

M9a: Long Multiplication
Column

$$\begin{array}{r} 243 \\ \times 68 \\ \hline 1944 \quad (8 \times 243) \\ + 14580 \quad (60 \times 243) \\ \hline 16524 \end{array}$$

Y5

M8b: Grid Method
Long Multiplication

$$203 \times 68 = 13,804$$

x	200	0	3
60	12000	0	180
0	0	24	1,944

$$12180 + 1624 = 13,804$$

M9b: Long Multiplication
Column

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

Y5

M8c: Grid Method
Short Multiplication

$$3.6 \times 4 = 14.4$$

x	3	0	6
40	12	0	24

$$12 + 2.4 = 14.4$$

M9c: Long Multiplication
Column

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

Y6

M8d: Decimal Grid
Short Multiplication

$$47.2 \times 3 = 141.6$$

x	40	7	0.2
21	0.6		

$$84 + 0.6 = 141.6$$

M9d: Column Multiplication

$$\begin{array}{r} 47.2 \\ \times 3 \\ \hline 141.6 \end{array}$$

Y6

M8e: Grid Method
Short Multiplication

$$6 \times 0.1 = 0.6$$

x	6		
0.1	0.6		

$$0.6 + 0 = 0.6$$

M9e: Column Multiplication

$$\begin{array}{r} 7.38 \\ \times 6 \\ \hline 4.28 \end{array}$$

Y6

M8f: Grid Method
Long Multiplication

$$24.3 \times 2.5 = 60.75$$

x	20	4	0.3
2	40	8	0.6
0.5	10	2	0.15

$$48.6 + 12.15 = 60.75$$

M9f: Long Multiplication
Column

$$\begin{array}{r} 24.3 \\ \times 2.5 \\ \hline 12.15 \quad (0.5 \times 24.3) \\ + 48.60 \quad (2 \times 24.3) \\ \hline 60.75 \end{array}$$

Y6

M9g: Long Multiplication
Column

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

Expanded Edition



Y1	D1: Sharing (Concept) "If I share 6 into 2 equal amounts, how many in each group?" Answer: 3	D2: Grouping (Concept) "How many groups of 2 can I make out of 6?" Answer: 3				D	Division Calculation $8 \div 2 = 4$ (divided by) (equals) dividend quotient + divisor	Division Vocabulary remainder group share + halve divisor factor quotient equal groups of divide
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Y2	Sharing "If I share 12 into 2 equal parts, how many in each group?" Answer: 6	D4: Division as Grouping $12 \div 2 = 6$ "How many groups of 2 are there in 12?" Answer: 6	D5: Grouping on a Number Line "How many 5s in 20?" Answer: 4					
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Y2								
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Y3		D6: Grouping Grid $4 \times 4 = 16$ $16 \div 4 = 4$ $4 \times 3 = 12$ $12 \div 3 = 4$ $4 \times 3 = 12$ $12 \div 3 = 4$					
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Y3		D7: Division using the Chunking Method $40 \div 4 = 10$	D8: Division using the Chunking Method $65 \div 4 = 16r1$	D9: Short Division $72 \div 4 = 18$	D10: Short Division $65 \div 4 = 16r1$	D11: Chunking $65 \div 4 = 16r1$	
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Y3							
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Y4			D9: Mega Hunk! $136 \div 4 = 34$	D10: Short Division $136 \div 4 = 34$	D11: Chunking $136 \div 4 = 34$	D11b: Chunking $136 \div 4 = 34$	
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Y5			D9c: Mega Hunk! $394 \div 6 = 65r4$	D10c: Short Division $394 \div 6 = 65r4$	D11c: Chunking $394 \div 6 = 65r4$		
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Expanded Edition

Y5

D9d: Mega Hunk!
 $591 + 3 = 197$
 Mega Hunk! Mega Hunk! Chunk
 $300 + 270 + 21$
 $100 + 90 + 7 = 197$

D10d: Short Division
 $591 + 3 = 197$
 $3 \overline{)591}$

D11d: Chunking
 $591 + 3 = 197$
 $3 \overline{)591}$
 $-300 (3 \times 100)$
 291
 $-270 (3 \times 90)$
 21
 $-21 (3 \times 7)$
 0

Y5

D9e: Mega Hunk!
 $5978 + 7 = 854$
 Mega Hunk! Mega Hunk! Chunk
 $5600 + 350 + 28$
 $100 + 60 + 9 = 169$

D10e: Short Division
 $5978 + 7 = 854$
 $7 \overline{)5978}$

D11e: Chunking
 $5978 + 7 = 854$
 $7 \overline{)5978}$
 -700
 50
 -49
 1
 -7
 0

Y5

D9f: Mega Hunk!
 $846 + 5 = 1691$
 Mega Hunk! Mega Hunk! Chunk
 $800 + 40 + 6$
 $100 + 60 + 9 = 169$

D10f: Short Division
 $846 + 5 = 1691$
 $5 \overline{)846}$

D11f: Chunking
 $846 + 5 = 1691$
 $5 \overline{)846}$
 $-45 (5 \times 9)$
 1

Y6

D9g: Mega Hunk!
 $480 + 15 = 32$
 Mega Hunk! Mega Hunk! Chunk
 $450 + 30$
 30
 $480 + 15 = 32$

D11g1: Chunking
 $480 + 15 = 32$
 $15 \overline{)480}$
 $-450 (15 \times 30)$
 30
 $-30 (15 \times 2)$
 0

D11g2: Chunking
 $480 + 15 = 32$
 $15 \overline{)480}$
 $-150 (15 \times 10)$
 330
 $-150 (15 \times 10)$
 180
 $-150 (15 \times 10)$
 30
 $-30 (15 \times 2)$
 0

Y6

D9h: Mega Hunk!
 $15 + 10 = 1.5$
 Mega Hunk! Mega Hunk! Chunk
 $10 + 5$
 1.5
 $15 + 10 = 1.5$

D11h1: Chunking
 $15 + 10 = 1.5$
 $10 \overline{)15}$
 -10
 5

D11h2: Chunking
 $15 + 10 = 1.5$
 $10 \overline{)15}$
 -10
 5

Y6

D9i: Mega Hunk!
 $87.5 + 7 = 12.5$
 Mega Hunk! Mega Hunk! Chunk
 $70 + 14 + 3.5$
 $10 + 2 + 0.5 = 12.5$

D10i: Short Division
 $87.5 + 7 = 12.5$
 $7 \overline{)87.5}$

D11i: Chunking
 $87.5 + 7 = 12.5$
 $7 \overline{)87.5}$
 -70
 17.5
 $-14 (7 \times 2)$
 3.5
 $-3.5 (7 \times 0.5)$
 0

Y6

D12: Long Division
 $37 \overline{)983}$
 $26r21$
 $983 + 37 = 26r21$

D13: Long Division
 $37 \overline{)983}$
 $-740 (37 \times 20)$
 243
 $-222 (37 \times 6)$
 21
 $983 + 37 = 26r21$

D14: Long Division
 $37 \overline{)983}$
 -74
 243
 -222
 21
 $983 + 37 = 26r21$

Y6

D13j: Long Division
 $37 \overline{)983}$
 $-370 (37 \times 10)$
 613
 $-370 (37 \times 10)$
 243
 $-222 (37 \times 6)$
 21
 $983 + 37 = 26r21$

Expanded Edition



MA	MA1: Partitioning $45 + 82 = 127$ $120 + 7 = 127$	MA2: Counting On $45 + 20 = 65$ $45 + 20 = 65$	MA3: Number Bonds $45 + 95 = 140$ $40 + 100 = 140$	MA4: Double & Adjust $45 + 46 = 91$ $45 + 45 + 1 = 91$ $90 + 1 = 91$	MA5: Round & Adjust $45 + 39 = 84$ $45 + 40 - 1 = 84$ $85 - 1 = 84$		
Y1	MA1: Partitioning $42 + 22 = 64$	MA2a: Counting On $12 + 5 = 17$	MA2b: Counting On $57 + 10 = 67$	MA3: Number Bonds $3 + 3 = 6$	MA4: Double & Adjust $5 + 6 = 11$ $5 + 5 + 1 = 11$	MA5: Round & Adjust $9 = 54$	
Y2	MA1: Partitioning $60 + 4 = 64$	MA2a: Counting On $78 + 7 = 85$	MA2b: Counting On $58 + 40 = 98$	MA3: Number Bonds $3 + 3 = 6$	MA4: Double & Adjust $7 + 8 = 15$	MA5: Round & Adjust $65 - 1 = 64$	
Y3	MA1: Partitioning $57 + 25 = 82$ $70 + 12 = 82$	MA2a: Counting On $85 + 50 = 135$	MA2b: Counting On $534 + 300 = 834$	MA3: Number Bonds $43 + 9 + 7 + 21 = 80$ $50 + 30 = 80$	MA4: Double & Adjust $16 + 17 = 33$ $16 + 16 + 1 = 33$ $16 + 1 = 33$	MA5: Round & Adjust $45 + 97 = 142$ $45 + 100 - 3 = 142$ $145 - 3 = 142$	
Y4	MA1: Partitioning $648 + 231 = 879$ $800 + 70 + 9 = 879$	MA2a: Counting On $760 + 84 = 844$	MA2b: Counting On $784 + 84 = 868$	MA3: Number Bonds $70 + 30 = 100$	MA4: Double & Adjust $125 + 38 = 163$	MA5: Round & Adjust $200 + 43 = 243$	
Y5	MA1: Partitioning $576 + 258 = 834$ $700 + 120 + 14 = 834$	MA2a: Counting On $837 + 500 = 1337$ $837 + 500 = 1337$	MA2b: Counting On $7583 + 5000 = 12583$ $7583 + 5000 = 12583$	MA3: Number Bonds $£4.56 + £3.27 + £1.44 = £9.27$ $£6.00 + £3.27 = £9.27$	MA4: Double & Adjust $125 + 127 = 252$ $125 + 125 + 2 = 252$ $250 + 2 = 252$	MA5: Round & Adjust $4645 + 1996 = 6641$ $4645 + 2000 - 4 = 6641$ $6645 - 4 = 6641$	
Y6	MA1: Partitioning $4.73 + 2.21 = 6.94$ $6 + 0.9 + 0.04 = 6.94$	MA2a: Counting On $43,826 + 30,000 = 73,826$ $43,826 + 30,000 = 73,826$	MA2b: Counting On $5,763,947 + 4,000,000 = 9,763,947$ $5,763,947 + 4,000,000 = 9,763,947$	MA3: Number Bonds $24.25 + 31.63 + 21.75 = 77.63$ $46 + 31.63 = 77.63$	MA4: Double & Adjust $4.5 + 4.7 = 9.2$ $4.5 + 4.5 + 0.2 = 9.2$ $9 + 0.2 = 9.2$	MA5: Round & Adjust $45.2 + 49.9 = 95.1$ $45.2 + 50 - 0.1 = 95.1$ $95.2 - 0.1 = 95.1$	

Expanded Edition



MM

MM1: Jump!

$\times 100$ 3400
 $\times 10$ 340
 +10 3.4
 +100 0.34

MM2: Re-ordering

$(9 \times 2) \times 5$
 $18 \times 5 = 90$

$(9 \times 5) \times 2$
 $45 \times 2 = 90$

$(2 \times 5) \times 9$
 $10 \times 9 = 90$ *

MM3: Partitioning

$15 \times 5 = 75$

$(50) + (25) = 75$
 $(10 \times 5) (5 \times 5)$

MM4: Round & Adjust

$49 \times 3 = 147$

$(50 \times 3) - (1 \times 3)$

$150 - 3 = 147$

MM5: Doubling

Double 17 = 34

$20 + 14 = 34$

Expanded

$\times 100$ 6340
 $\times 10$ 634
 6.34
 0.634
 0.0634

MM2a: Re-ordering

$(7 \times 4) \times 5$
 $28 \times 5 = 140$

$(7 \times 5) \times 4$
 $35 \times 4 = 140$

$(4 \times 5) \times 7$
 $20 \times 7 = 140$

MM3a: Partitioning

$37 \times 4 = 148$

$(30 \times 4) + (7 \times 4) = 148$

MM4a: Round & Adjust

$198 \times 4 = 792$

$(200 \times 4) - (2 \times 4)$

$800 - 8 = 792$

MM5a: Doubling

Double 37 = 74

$50 + 14 = 74$

Re-ordering

$(6 \times 7) \times 6$
 $42 \times 6 = 432$

$(6 \times 6) \times 7$
 $36 \times 7 = 432$

$(8 \times 6) \times 7$
 $48 \times 7 = 432$

Re-ordering

$(3 \times 6) \times 8$
 $18 \times 8 = 432$

$(3 \times 8) \times 6$
 $24 \times 6 = 432$

$(6 \times 8) \times 3$
 $48 \times 3 = 432$

MM4b: Round & Adjust

$3.9 \times 4 = 15.6$

$(4 \times 4) - (0.1 \times 4)$

$16 - 0.4 = 15.6$

MM4c: Round & Adjust

$20 - 0.5 = 19.5$

MM5b: Doubling

Double 36 = 72

$50 + 14 = 74$

MM4c: Round & Adjust

$\pounds 5.99 \times 6 = \pounds 35.94$

$(\pounds 6 \times 6) - (1p \times 6)$

$\pounds 36 - 0.06 = \pounds 35.94$

Re-ordering

$(8 \times 6) \times 9$
 $48 \times 9 = 432$

MM4d: Round & Adjust

$20 - 0.5 = 19.5$

MM4e: Round & Adjust

$20 - 0.5 = 19.5$

MM5c: Doubling

Double 340 = 680

$600 + 80 = 680$

Edition

MM5d: Doubling

Double 278 = 556

$400 + 140 + 16 = 556$

MM5e: Doubling

Double 278 = 556

$400 + 140 + 16 = 556$

MM5f: Doubling

Double 768 = 1536

$1400 + 120 + 16 = 1536$

MM5g: Doubling

Double 3.7 = 7.4

$6 + 1.4 = 7.4$

MM5f: Doubling

Double 768 = 1536

$1400 + 120 + 16 = 1536$

MM5d: Doubling

Double 278 = 556

$400 + 140 + 16 = 556$

MM5f: Doubling

Double 768 = 1536

$1400 + 120 + 16 = 1536$


MM5g: Doubling

Double 3.7 = 7.4







$6 + 1.4 = 7.4$

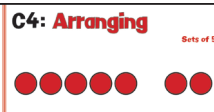

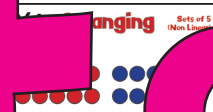


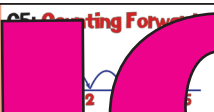
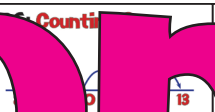

Expanded Edition




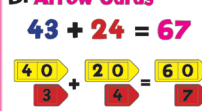
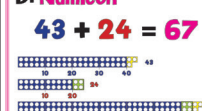
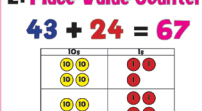
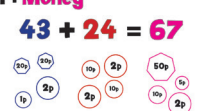
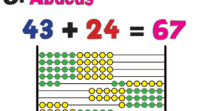
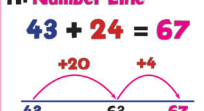
<p>Sense of Number Visual Calculation Policy</p> <p>Expanded Edition for Sense of Number Primary School September 2015</p> <p>Graphic Design by Dave Godfrey Compiled by the Sense of Number Maths Team</p> <p>For sale within Sense of Number Primary School. 'A picture is worth 1000 words?' www.senseofnumber.co.uk</p>	<p>Poster Guide Visual Calculation Policy</p> 	<p>Guide to using a Visual Calculation Policy</p> <p>The Sense of Number Visual Calculation Policy provides a visual representation of a school's written and mental calculation policy.</p> <p>Typical user: Children. The slides are printed out (e.g. A4) and the appropriate slides are displayed within each classroom for continual reference or as a working aid.</p> <p>Teacher Reference: The slides are printed out (e.g. 9 slides per A4 page) and stored in the teacher's planning folder.</p> <p>Parents: The slides are used to communicate to parents the methods and strategies being taught and used within school.</p> <p>CPD: All staff are given an overview of the school's written and mental calculation policy.</p> <p>Please note the VCP should not be used outside for download.</p>		<p>KC1: Key Concepts!</p> <p>Addition</p> $8 + 2 = 10$ <p>"What is 8 add 2?" Answer: 10</p>	<p>Subtraction</p> $8 - 2 = 6$ <p>"What is 8 subtract 2?" Answer: 6 "The difference between 8 and 2 is 6"</p>	<p>Multiplication</p> $8 \times 2 = 16$ <p>"8 multiplied by 2" means "8, 2 times" or "2 groups of 8"</p>	<p>Division</p> $8 \div 2 = 4$ <p>"8 divided by 2" means "How many groups of 2 are there in 8?" Answer: 4 "8 shared into 2 lots is 4"</p>	<p>Calculation Vocabulary</p> <p>equivalent to = equals same value as = balance</p> <p>+ Addition × Multiplication - Subtraction ÷ Division</p>		
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Expanded Edition

<p>C1a: Number Order</p> <p>0 1 2 3 4 5</p> <p>The numbers must be said once and always in the conventional order.</p>	<p>C1b: At a Glance</p>  <p>See at a glance how many objects correct number</p>	<p>C2a: Number Match</p>  <p>Get to be ready to match the objects</p>	<p>C2b: Counting Objects</p>  <p>The objects can be touched the objects</p>	<p>C2c: Order Arrangement</p>  <p>Objects do not affect how many there are</p>		<p>C3: How Many?</p>  <p>The first number said tells 'how many' in the whole collection. It does not describe the last object touched.</p>		<p>C4: Arranging</p>  <p>Sets of 5</p>
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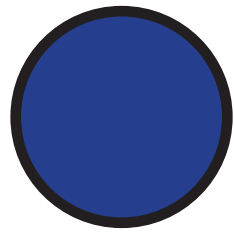
<p>C4a: Arranging</p>  <p>Sets of 5</p>	<p>C4b: Arranging</p>  <p>Sets of 5</p>	<p>C4c: Arranging</p>  <p>Sets of 5</p>	<p>C4d: Arranging</p>  <p>Sets of 5</p>	<p>C5: Counting Forward</p> 	<p>C6: Counting Back</p> 	<p>C7: Counting Back</p> 	<p>C8: Counting in Steps</p> 	
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<p>Sense of Number Calculation Cards</p> <p>by Dave Godfrey</p> <p>www.senseofnumber.co.uk Tel: 01904 778848</p> <p>The following slides show the calculation $43 + 24$ using a variety of resources and manipulatives.</p>	<p>A: Base 10</p> $43 + 24 = 67$ 	<p>B: Arrow Cards</p> $43 + 24 = 67$ 	<p>C: Hundred Square</p> $43 + 24 = 67$ <table border="1" data-bbox="784 1197 985 1308"> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> <tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr> </table>	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	<p>D: Numicon</p> $43 + 24 = 67$ 	<p>E: Place Value Counters</p> $43 + 24 = 67$ 	<p>F: Money</p> $43 + 24 = 67$ 	<p>G: Abacus</p> $43 + 24 = 67$ 	<p>H: Number Line</p> $43 + 24 = 67$ 
41	42	43	44	45	46	47	48	49	50																													
51	52	53	54	55	56	57	58	59	60																													
61	62	63	64	65	66	67	68	69	70																													

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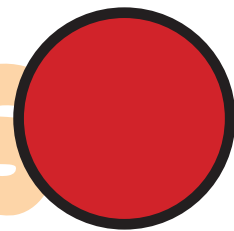




Sense of Number Standard Alternative Slides

Alternative
Layout Slides

by Dave Godfrey



dave@senseofnumber.co.uk Tel: 01904 778848

The following slides the standard alternative slide configurations to the main set of slides.



Saint Mary's Catholic Primary School

Saint Mary's Catholic Primary School VCP Basic Edition © Sense of Number 2016
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A7: Column Addition

100 10 1

687

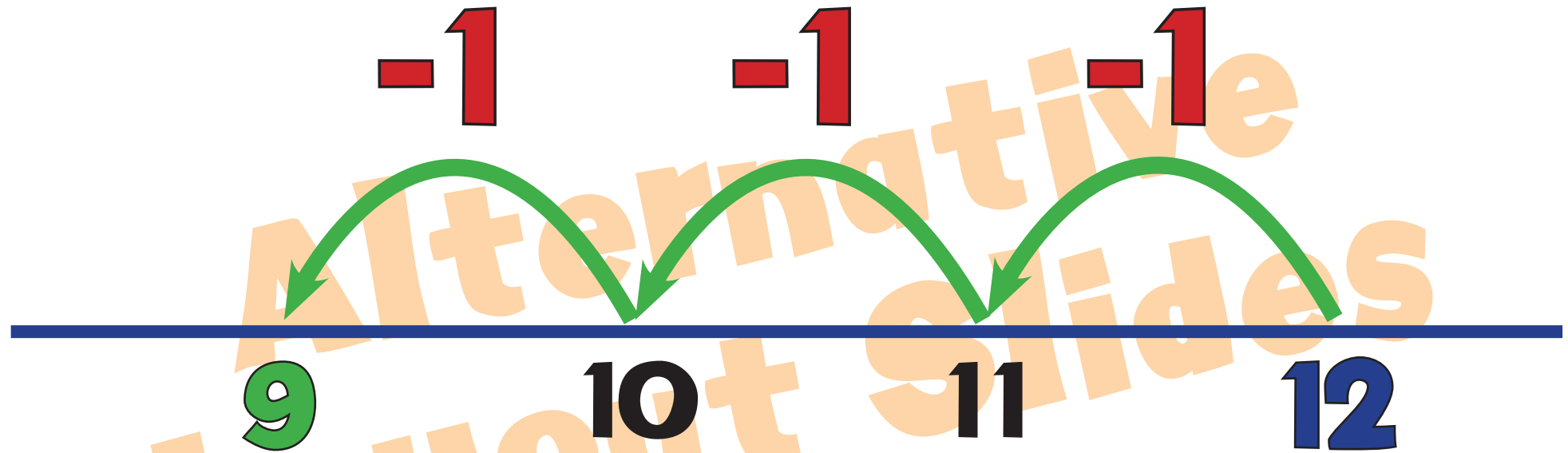
+ 248

1 1

935



S3: Counting Back

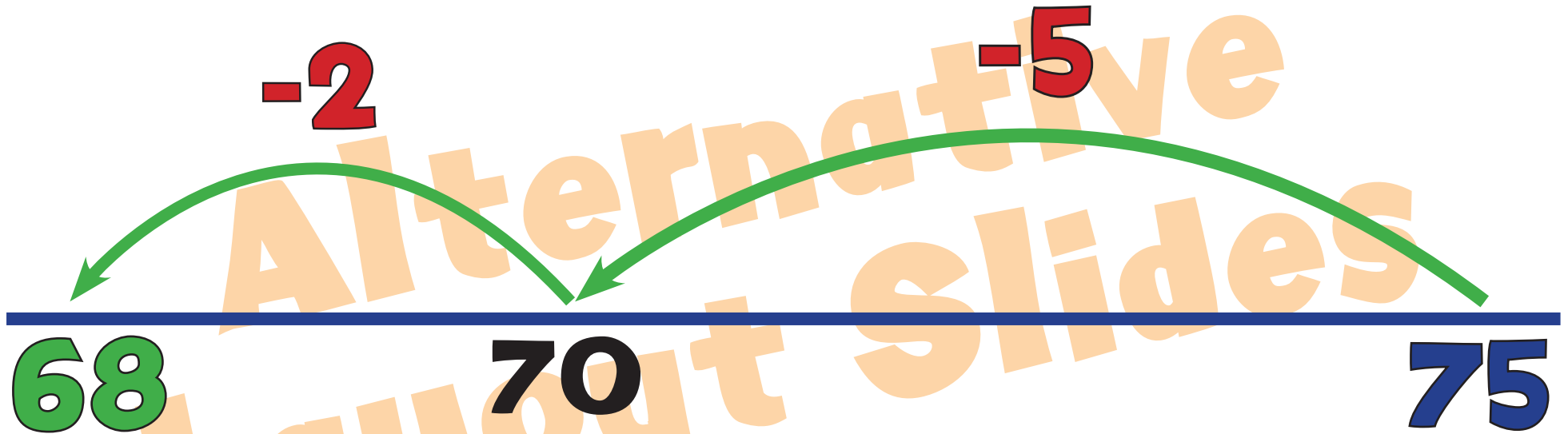


$$12 - 3 = 9$$

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



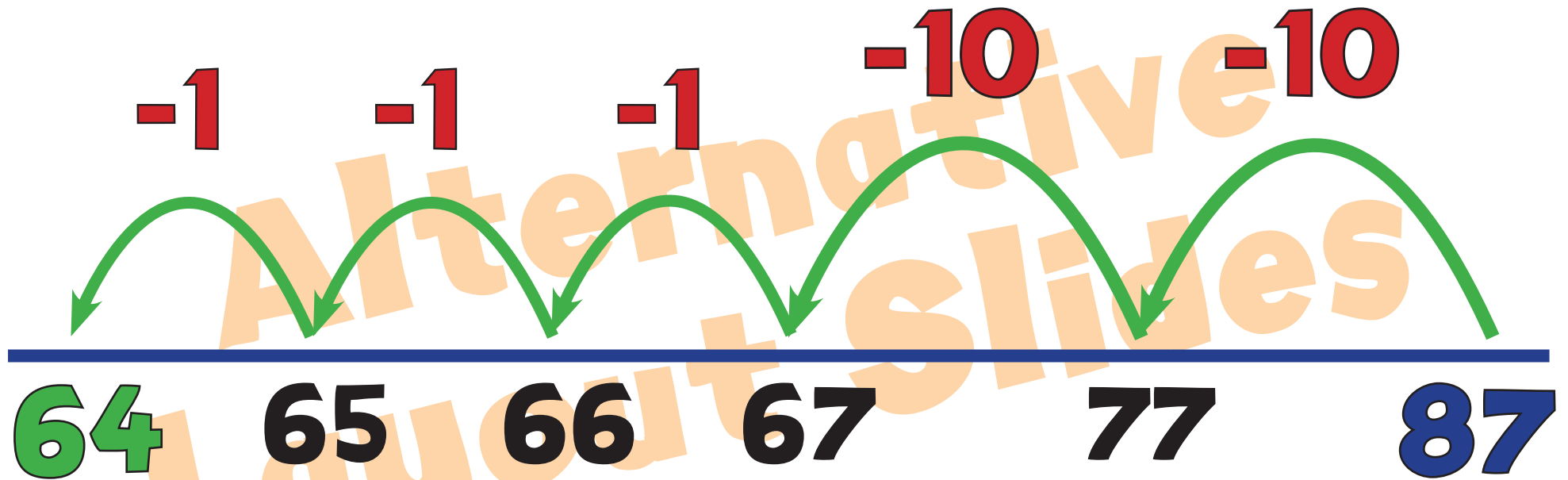
S5: Backwards Boing



$$75 - 7 = 68$$



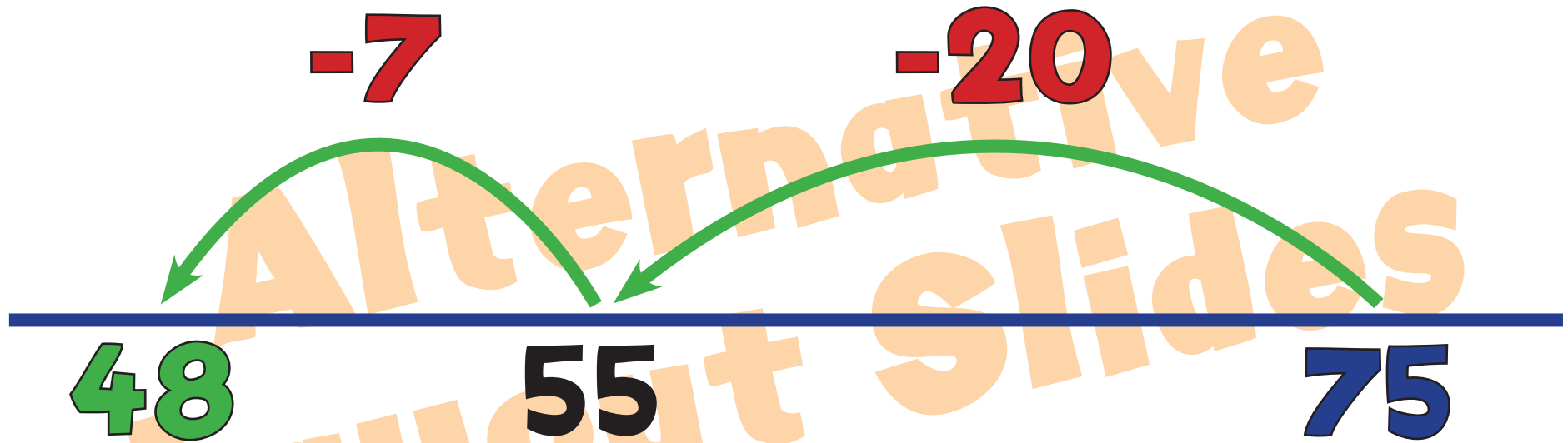
S6: Backwards Bounce



$$87 - 23 = 64$$



S7: Backwards Jump



$$75 - 27 = 48$$



M7: Column Multiplication

$$\begin{array}{r} \text{100} \quad \text{10} \quad \text{1} \\ \text{147} \\ \times \quad \text{4} \\ \hline \text{1} \quad \text{2} \\ \hline \text{588} \end{array}$$



M9: Long Multiplication

Column

$$\begin{array}{r} 43 \\ \times 65 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 1 \\ 215 \end{array}$$

(5 x 43)

$$\begin{array}{r} 2 \quad 1 \\ + 2580 \\ \hline \end{array}$$

(60 x 43)

$$\begin{array}{r} 2795 \\ \hline \end{array}$$

