# MC RaPa CoDa Numbo

14 **MA1** MC = Manipulate Calculation

22 **MA2** Ra = Round and Adjust

30 **MA3** Pa = Partitioning

38 **MA4** Co = Counting On

52 **MA5** Da = Double and Adjust

60 **MA6** Numbo = Number Bonds


## 6 Cool Strategies for Mental Addition!

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# MA

## MA1: Manipulate Calculation

45 + 39 = 84

44 1 39

44 + 40 = 84

## MA2: Round & Adjust

45 + 39 = 84

45 + 40 - 1

85 - 1 = 84

## MA3: Partitioning

45 + 82 = 127

120 + 7 = 127

## MA4: Counting On

45 + 20 = 65

+20

45 65

## MA5: Double & Adjust

45 + 46 = 91

45 1

90 + 1 = 91

## MA6: Number Bonds

45 + 95 = 140

40 + 100 = 140

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## MC RaPa CoDa Numbo

- MA1 MC = Manipulate Calculation
- MA2 Ra = Round and Adjust
- MA3 Pa = Partitioning
- MA4 Co = Counting On
- MA5 Da = Double and Adjust
- MA6 Numbo = Number Bonds

6 Cool Strategies for Mental Addition!

## MA1: Manipulate Calculation

16 + 9 = 25

16

15 1 9 10

15 + 10

## MA2: Round & Adjust

45 + 9 = 54

+10 -1

45 54

## MA3: Partitioning

43 + 21 = 64

## MA4: Counting On

45 + 20 = 65

+10 +10

45 55 65

## MA5: Double & Adjust

7 + 8 = 15

7 + 8 = 7 + 7 + 1 = 14 + 1 = 15

## MA6: Number Bonds

3 + 4 + 7 = 14

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# Y1

## MA1: Manipulate Calculation

16 + 9 = 25

15 1 9

15 + 10 = 25

## MA2: Round & Adjust

45 + 9 = 54

45 + 10 - 1 =

55 - 1 = 54

## MA3: Partitioning

8 + 6 = 14

8 + 2 + 4 = 14

## MA4a: Counting On

Ones

12 + 5 = 17

+5

12 17

## MA4b: Counting On

Tens

57 + 10 = 67

+10

57 67

## MA5: Double & Adjust

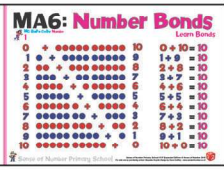
5 + 6 = 11

5 1

10 + 1 = 11

## MA6: Number Bonds

Learn Bonds



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# Y2

## MA1: Manipulate Calculation

45 + 19 = 64

44 1 19

44 + 20 = 64

## MA2: Round & Adjust

45 + 19 = 64

45 + 20 - 1

65 - 1 = 64

## MA3: Partitioning

43 + 21 = 64

60 + 4 = 64

## MA4a: Counting On

Ones

78 + 7 = 85

+7

78 85

## MA4b: Counting On

Tens

58 + 40 = 98

+40

58 98

## MA5: Double & Adjust

7 + 8 = 15

7 1

14 + 1 = 15

## MA6: Number Bonds

3 + 4 + 7 = 14

10 4

---

# Y3

## MA1: Manipulate Calculation

45 + 97 = 142

42 3 97

42 + 100 = 142

## MA2: Round & Adjust

45 + 97 = 142

45 + 100 - 3

145 - 3 = 142

## MA1: Partitioning

57 + 25 = 82

70 + 12 = 82

## MA4a: Counting On

Tens

85 + 50 = 135

+50

85 135

## MA4b: Counting On

Hundreds

534 + 300 = 834

+300

534 834

## MA5: Double & Adjust

16 + 17 = 33

16 1

32 + 1 = 33

## MA6: Number Bonds

43 + 9 + 7 + 21 = 80

50 30

---

# Y4

## MA1: Manipulate Calculation

345 + 298 = 643

343 2 298

343 + 300 = 643

## MA2: Round & Adjust

345 + 298 = 643

345 + 300 - 2

645 - 2 = 643

## MA1: Partitioning

648 + 231 = 879

800 + 70 + 9 = 879

## MA4a: Counting On

Tens

784 + 60 = 844

+60

784 844

## MA4b: Counting On

Hundreds

4837 + 3000 = 7837

+3000

4837 7837

## MA5: Double & Adjust

37 + 38 = 75

37 1

74 + 1 = 75

## MA6: Number Bonds

42 + 16 + 28 + 54 = 140

70 70

---

# Y5

## MA1: Manipulate Calculation

4645 + 1996 = 6641

4641 4 1996

4641 + 2000 = 6641

## MA2: Round & Adjust

4645 + 1996 = 6641

4645 + 2000 - 4

6645 - 4 = 6641

## MA3: Partitioning

576 + 258 = 834

700 + 120 + 14 = 834

## MA4a: Counting On

Hundreds

837 + 500 = 1337

+500

837 1337

## MA4b: Counting On

Thousands

7583 + 5000 = 12583

+5000

7583 12583

## MA5: Double & Adjust

125 + 127 = 252

125 2

250 + 2 = 252

## MA6: Number Bonds

£4.56 + £3.27 + £1.44 = £9.27

£6.00 £3.27

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# Y6

## MA1: Manipulate Calculation

45.2 + 49.9 = 95.1

45.1 0.1 49.9

45.1 + 50 = 95.1

## MA2: Round & Adjust

45.2 + 49.9 = 95.1

45.2 + 50 - 0.1

95.2 - 0.1 = 95.1

## MA3: Partitioning

4.73 + 2.21 = 6.94

6 + 0.9 + 0.04 = 6.94

## MA4a: Counting On

Ten Thousands

43,826 + 30,000 = 73,826

+30,000

43,826 73,826

## MA4b: Counting On

Millions

5,763,947 + 4,000,000 = 9,763,947

+4,000,000

5,763,947 9,763,947

## MA5: Double & Adjust

4.5 + 4.7 = 9.2

4.5 0.2

9 + 0.2 = 9.2

## MA6: Number Bonds

24.25 + 31.63 + 21.75 = 77.63

46 31.63

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**Progression Overviews**

# MA1: Manipulate Calculation

MC RaPa CoDa Numbo

$$45 + 39 = 84$$

44

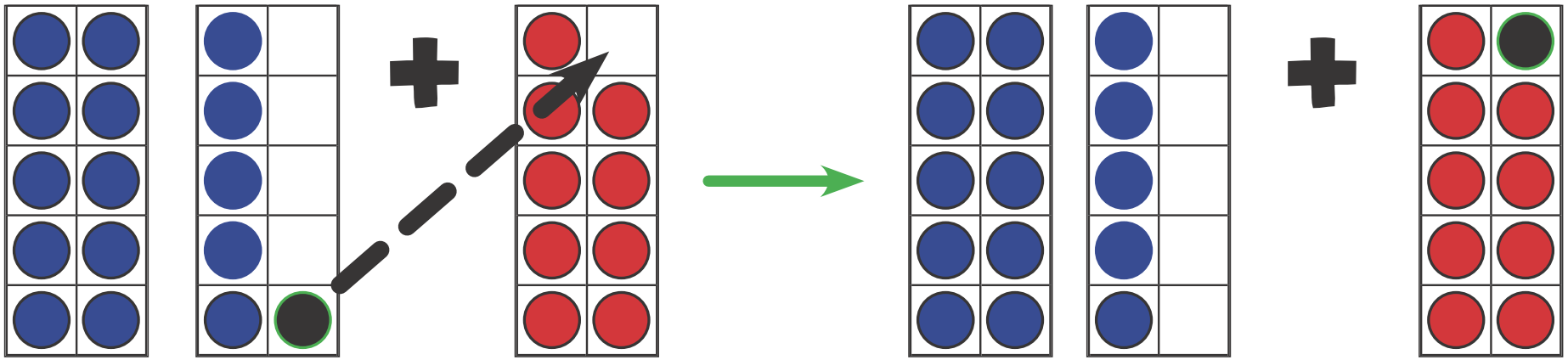
1

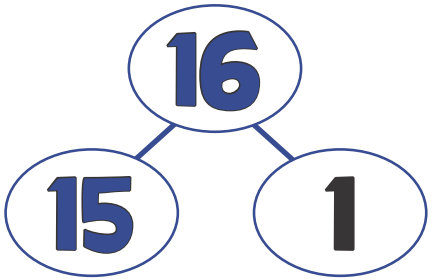
$$44 + 40 = 84$$

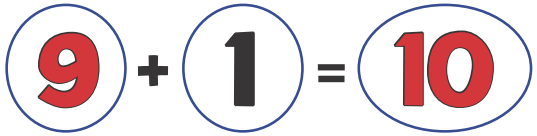
# MA1: Manipulate Calculation

MC RaPa CoDa Numbo
Visualisation

## 16 + 9 = 25






## 15 + 10

# MA1: Manipulate Calculation

MC RaPa CoDa Numbo 1

$$16 + 9 = 25$$

15

1

$$15 + 10 = 25$$

# MA1: Manipulate Calculation

MC RaPa CoDa Numbo

2

$$45 + 19 = 64$$

44

1

$$44 + 20 = 64$$

# MA1: Manipulate Calculation

MC RaPa CoDa Numbo

3

$$45 + 97 = 142$$

42 3

$$42 + 100 = 142$$

# MA1: Manipulate Calculation

MC RaPa CoDa Numbo

4

345 + 298 = 643

343

2

343 + 300 = 643

# MA1: Manipulate Calculation

Mc RaPa CoDa Numbo 5

$$4645 + 1996 = 6641$$

4641 4

$$4641 + 2000 = 6641$$

# MA1: Manipulate Calculation

Mc RaPa CoDa Numbo 6

$$45.2 + 49.9 = 95.1$$

45.1

0.1

$$45.1 + 50 = 95.1$$

# MA2: Round & Adjust

MC RaPa CoDa Numbo

$$45 + 39 = 84$$

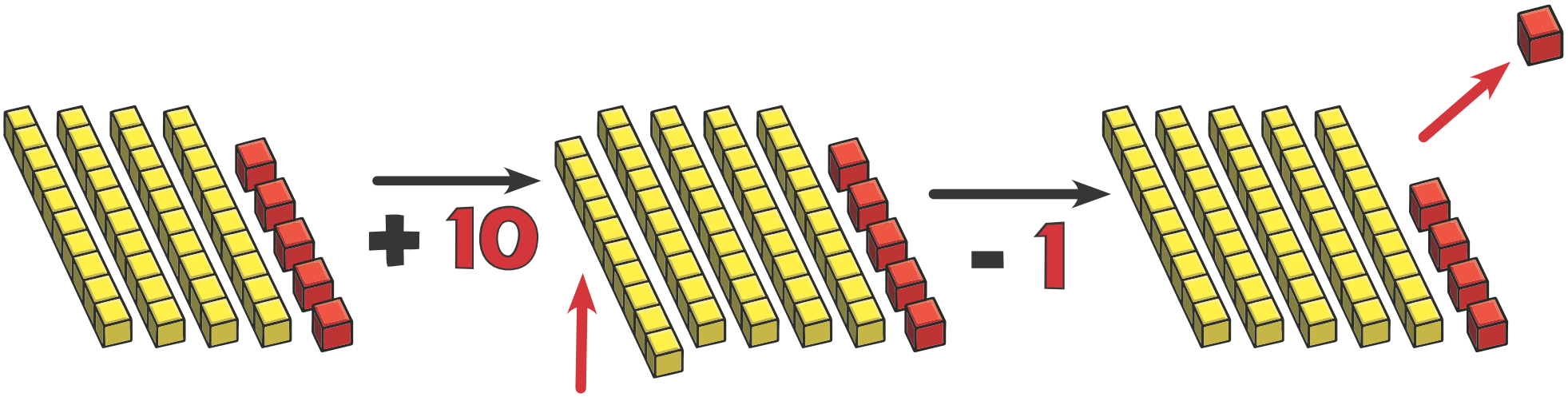
$$45 + 40 - 1$$

$$85 - 1 = 84$$

# MA2: Round & Adjust

MC RaPa CoDa Numbo
Visualisation

## 45 + 9 = 54



# MA2: Round & Adjust

MC RaPa CoDa Numbo 1

45 + 9 = 54

45 + 10 - 1 =

55 - 1 = 54

# MA2: Round & Adjust

MC RaPa CoDa Numbo 2

$$45 + 19 = 64$$

$$45 + 20 - 1$$

$$65 - 1 = 64$$

# MA2: Round & Adjust

MC RaPa CoDa Numbo 3

$$45 + 97 = 142$$

$$45 + 100 - 3$$

$$145 - 3 = 142$$

# MA2: Round & Adjust

MC RaPa CoDa Numbo 4

345 + 298 = 643

345 + 300 - 2

645 - 2 = 643

# MA2: Round & Adjust

MC RaPa CoDa Numbo 5

4645 + 1996 = 6641

4645 + 2000 - 4

6645 - 4 = 6641

# MA2: Round & Adjust

MC RaPa CoDa Numbo 6

$$45.2 + 49.9 = 95.1$$

$$45.2 + 50 - 0.1$$

$$95.2 - 0.1 = 95.1$$

# MA3: Partitioning

MC RaPa CoDa Numbo

## 45 + 82 = 127

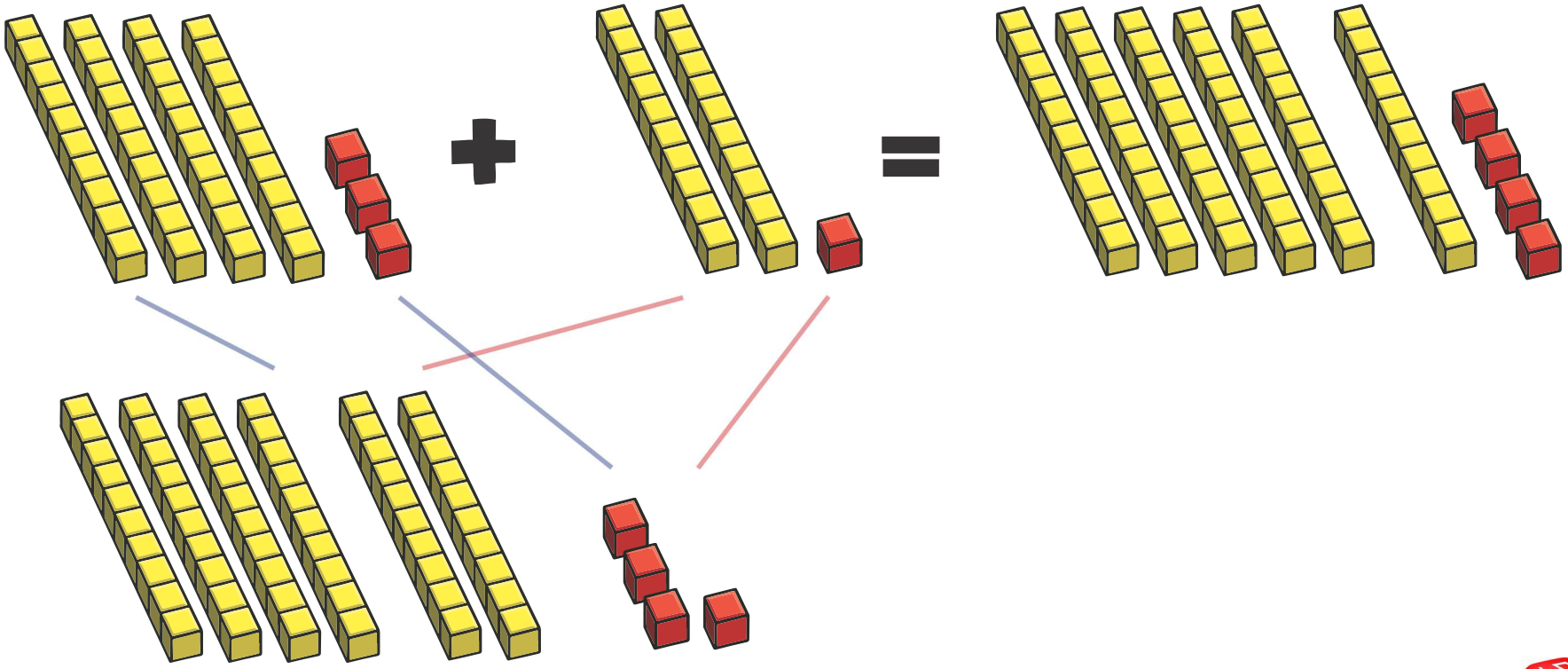
120 + 7 = 127

# MA3: Partitioning

MC RaPa CoDa Numbo
Visualisation

Visualisation

## 43 + 21 = 64



# MA3: Partitioning

MC RaPa CoDa Numbo 1

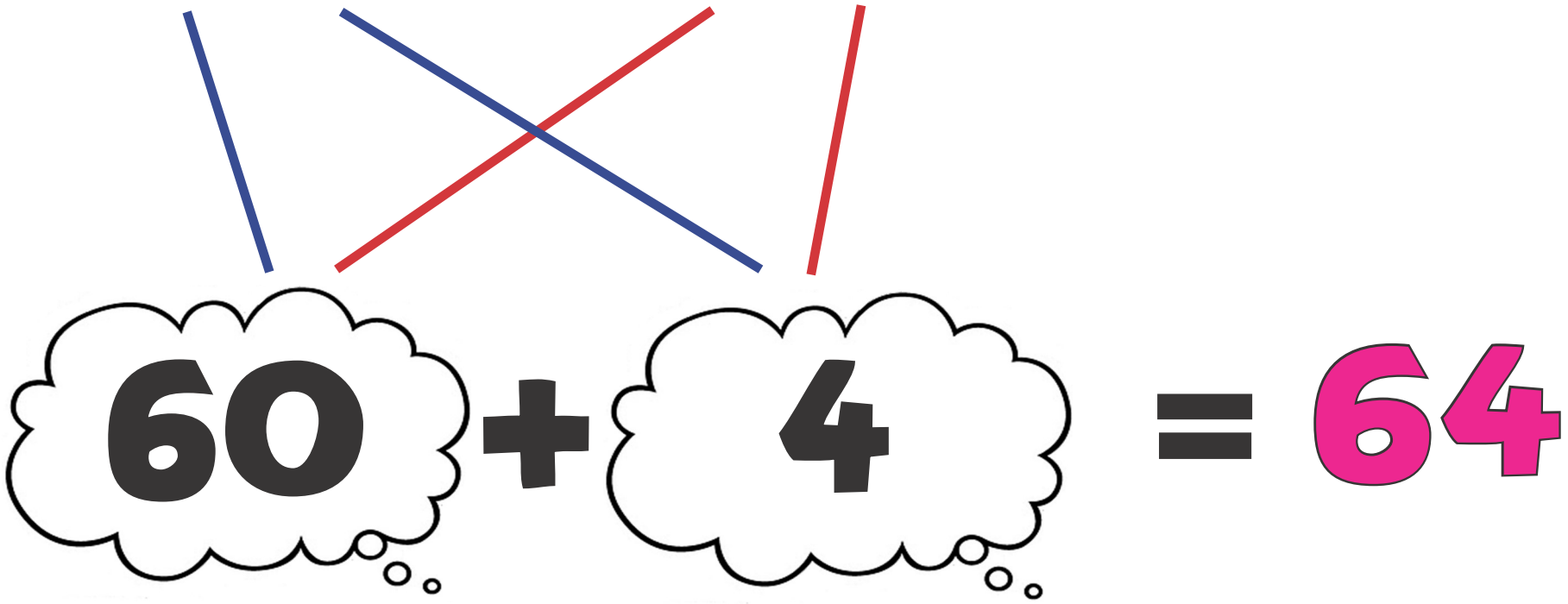
$$8 + 6 = 14$$

$$8 + 2 + 4 = 14$$

# MA3: Partitioning

MC RaPa CoDa Numbo 2

## 43 + 21 = 64



# MA3: Partitioning

MC RaPa CoDa Numbo 3

$$57 + 25 = 82$$

$$70 + 12 = 82$$

# MA3: Partitioning

MC RaPa CoDa Numbo 4

## 648 + 231 = 879

800 + 70 + 9 = 879

# MA3: Partitioning

MC RaPa CoDa Numbo 5

## 576 + 258 = 834

700 + 120 + 14 = 834

# MA3: Partitioning

MC RaPa CoDa Numbo 6

$$4.73 + 2.21 = 6.94$$

$$6 + 0.9 + 0.04 = 6.94$$

# MA4: Counting On

MC RaPa CoDa Numbo

$$45 + 20 = 65$$

+20

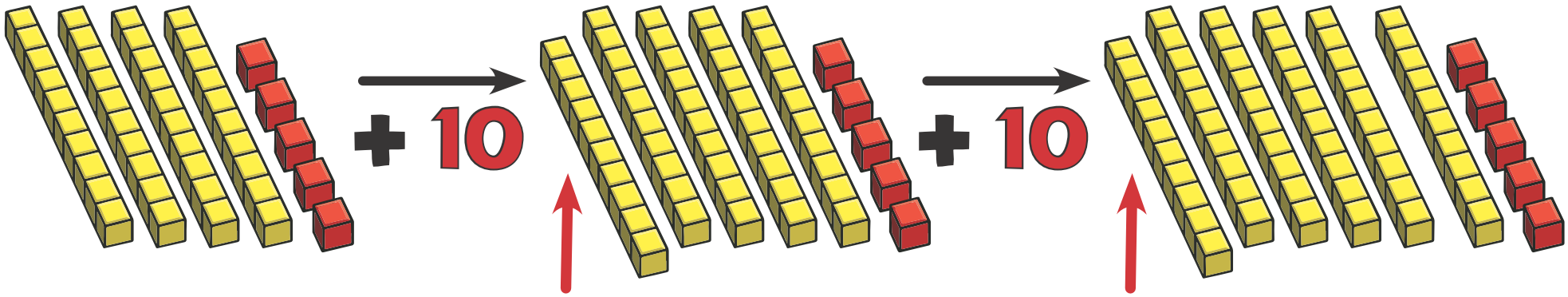
45

65

# MA4: Counting On

MC RaPa CoDa Numbo Visualisation

## 45 + 20 = 65



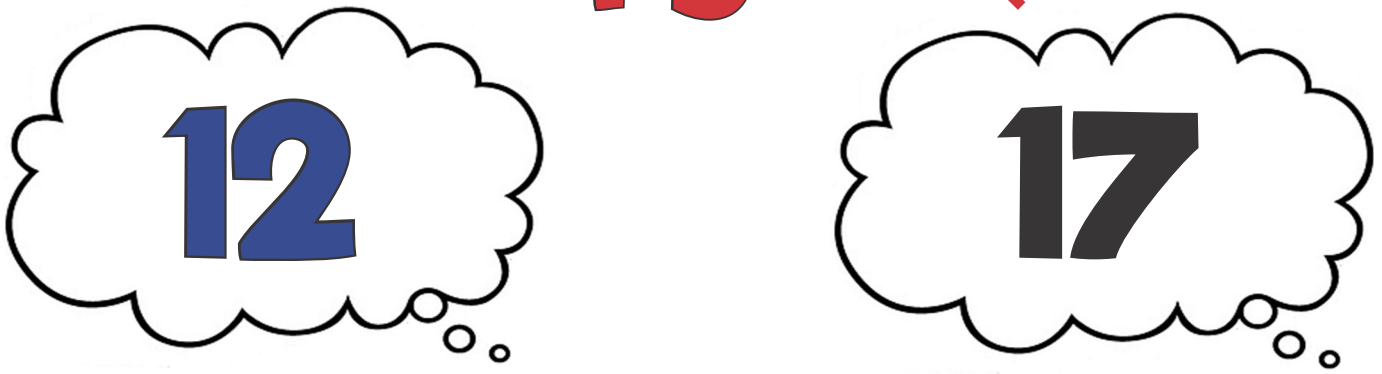

45 55 65

# MA4a: Counting On

MC RaPa CoDa Numbo 1

Ones

$$12 + 5 = 17$$



# MA4b: Counting On

MC RaPa CoDa Numbo 1

Tens

$$57 + 10 = 67$$

+10


# MA4a: Counting On

MC RaPa CoDa Numbo 2

Ones

$$78 + 7 = 85$$

+7

78

85

# MA4b: Counting On

MC RaPa CoDa Numbo 2

Tens

$$58 + 40 = 98$$

+40

58

98

# MA4a: Counting On

MC RaPa CoDa Numbo 3

Tens

85 + 50 = 135

+50

85

135

# MA4b: Counting On

MC RaPa CoDa Numbo 3

Hundreds

$$534 + 300 = 834$$

+300

534

834

# MA4a: Counting On

MC RaPa CoDa Numbo 4

Tens

## 784 + 60 = 844

+60

784

844

# MA4b: Counting On

MC RaPa CoDa Numbo 4

## Hundreds

**4837 + 3000 = 7837**

**+3000**

**4837**

**7837**

# MA4a: Counting On

MC RaPa CoDa Numbo 5

Hundreds

## 837 + 500 = 1337

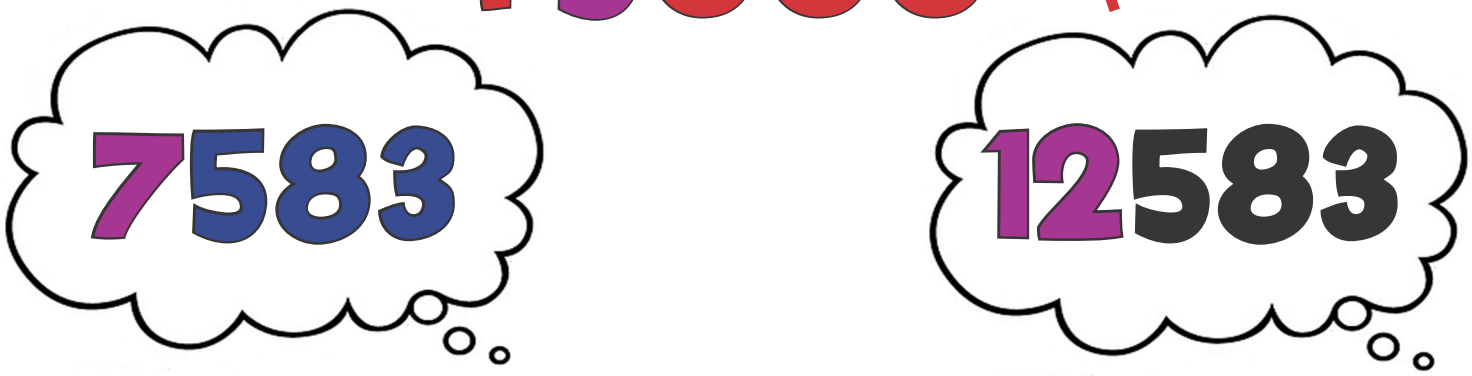
+500


# MA4b: Counting On

MC RaPa CoDa Numbo 5

## Thousands

$$7583 + 5000 = 12583$$



# MA4a: Counting On

MC RaPa CoDa Numbo 6

## Ten Thousands

43,826 + 30,000 = 73,826

+30,000

43,826

73,826

# MA4b: Counting On

MC RaPa CoDa Numbo 6

Millions

5,763,947 + 4,000,000 = 9,763,947

+4,000,000


# MA5: Double & Adjust

MC RaPa CoDa Numbo

45 + 46 = 91

45

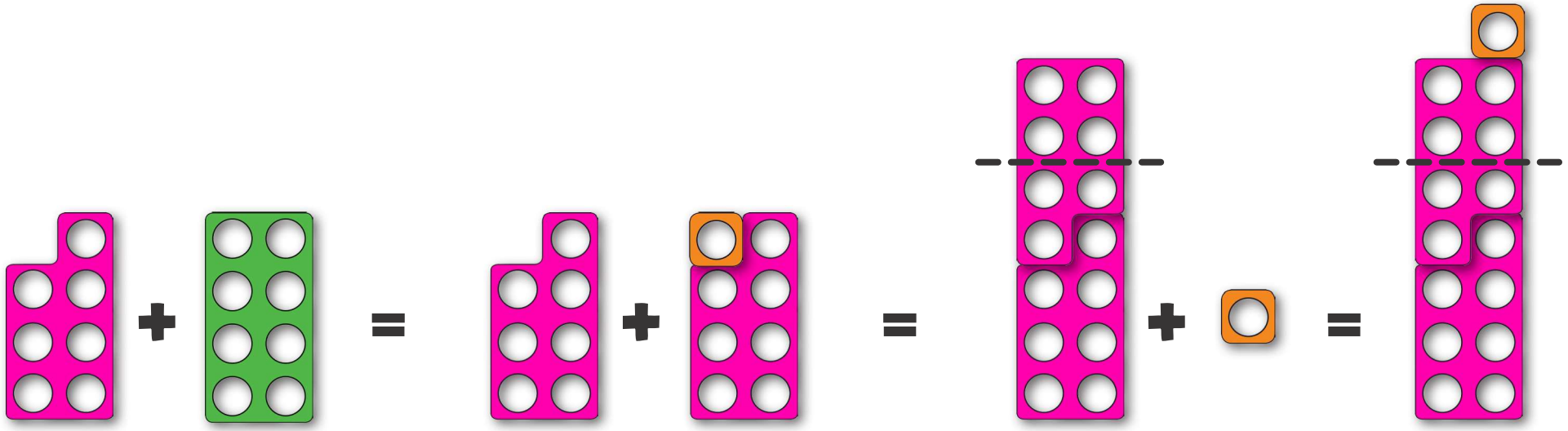
1

90 + 1 = 91

# MA5: Double & Adjust

MC RaPa CoDa Numbo
Visualisation

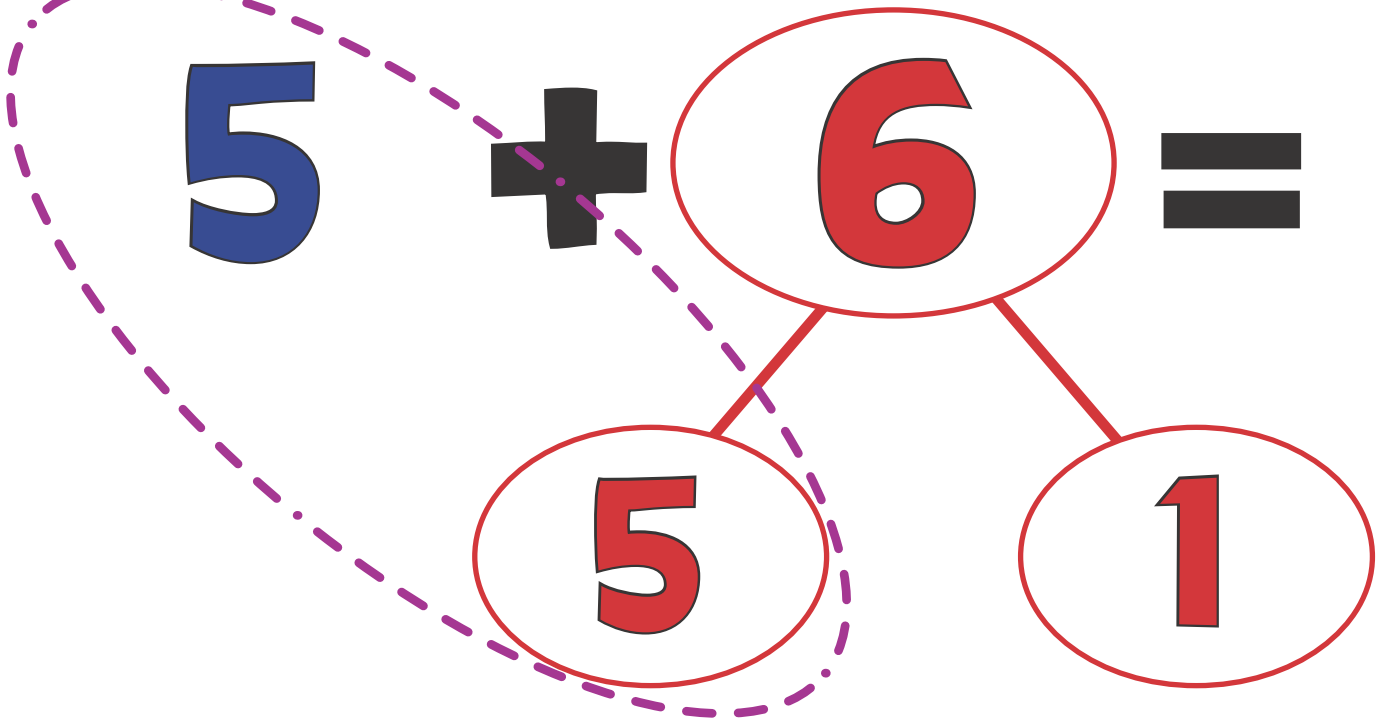
## 7 + 8 = 15



## 7 + 8 = 7 + 7 + 1 = 14 + 1 = 15

# MA5: Double & Adjust

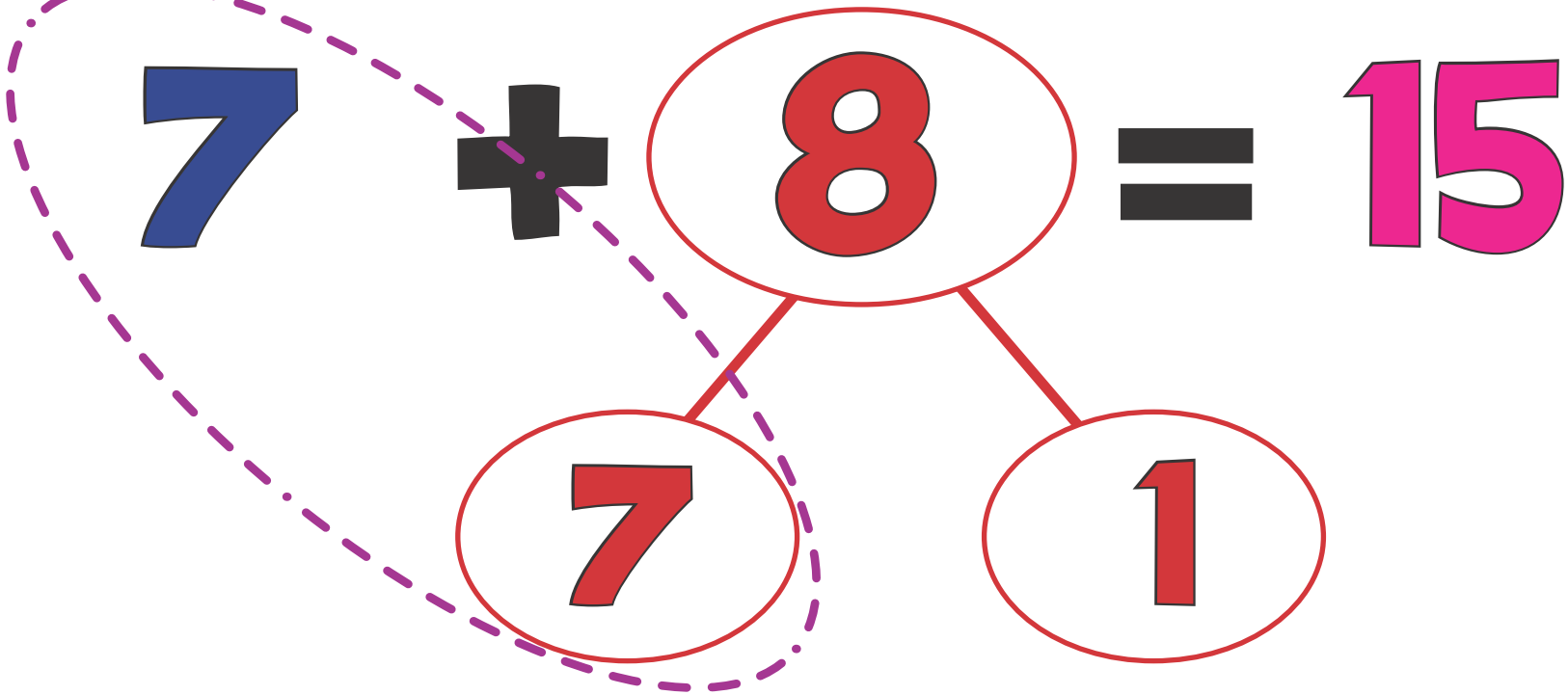
MC RaPa CoDa Numbo 1




10 + 1 = 11

# MA5: Double & Adjust

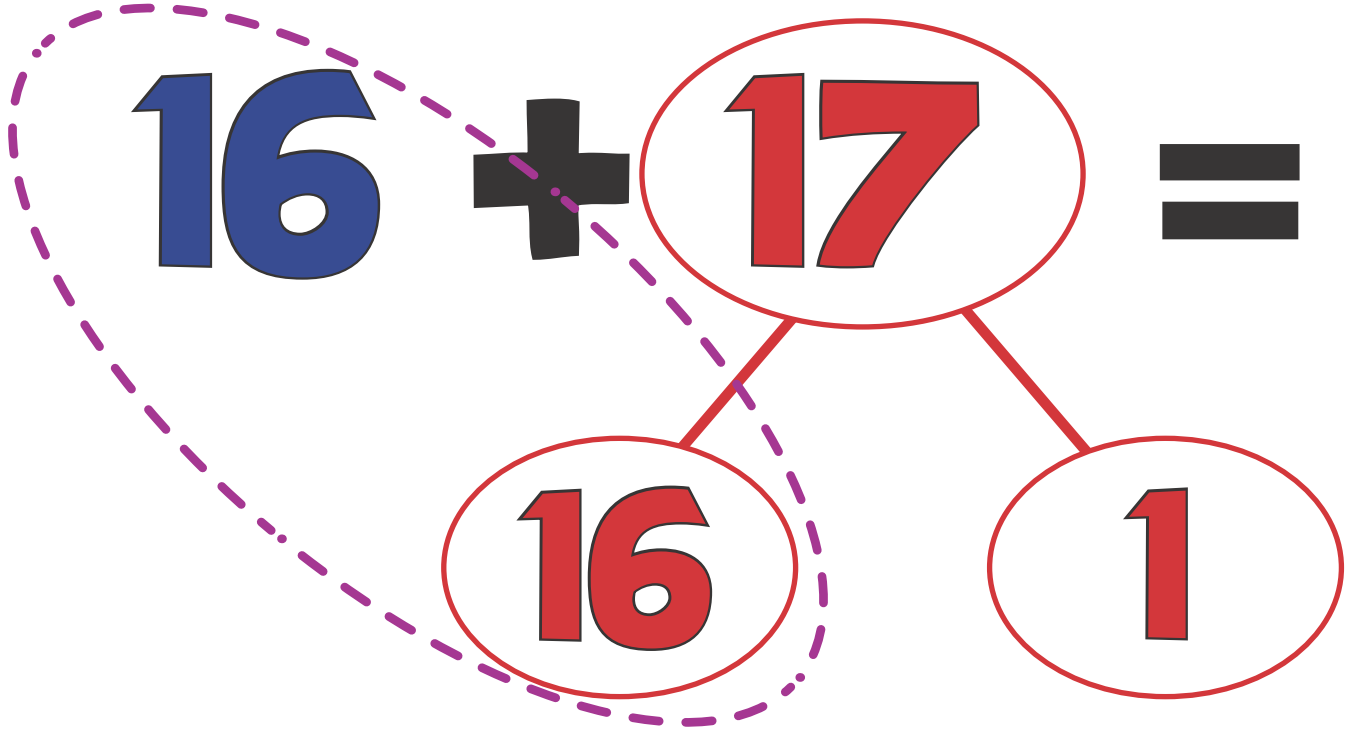
MC RaPa CoDa Numbo 2




14 + 1 = 15

# MA5: Double & Adjust

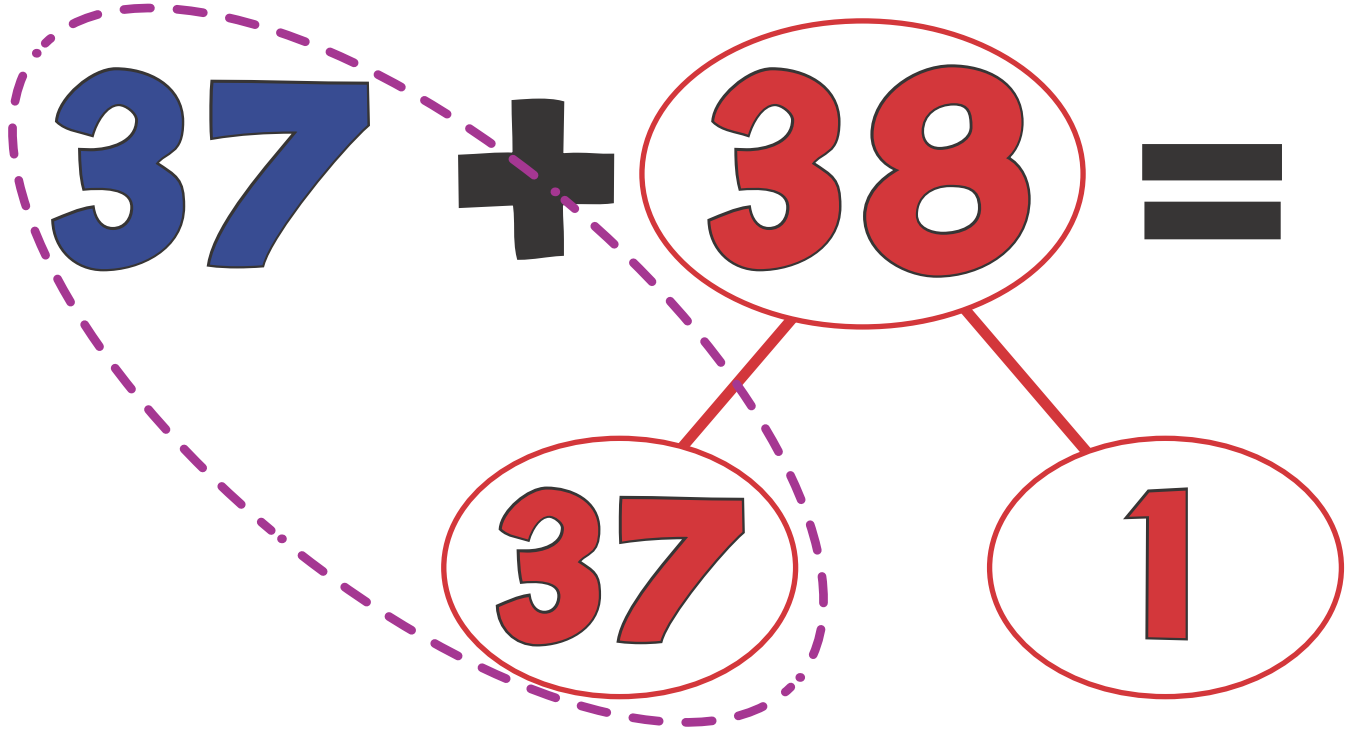
MC RaPa CoDa Numbo 3




32 + 1 = 33

# MA5: Double & Adjust

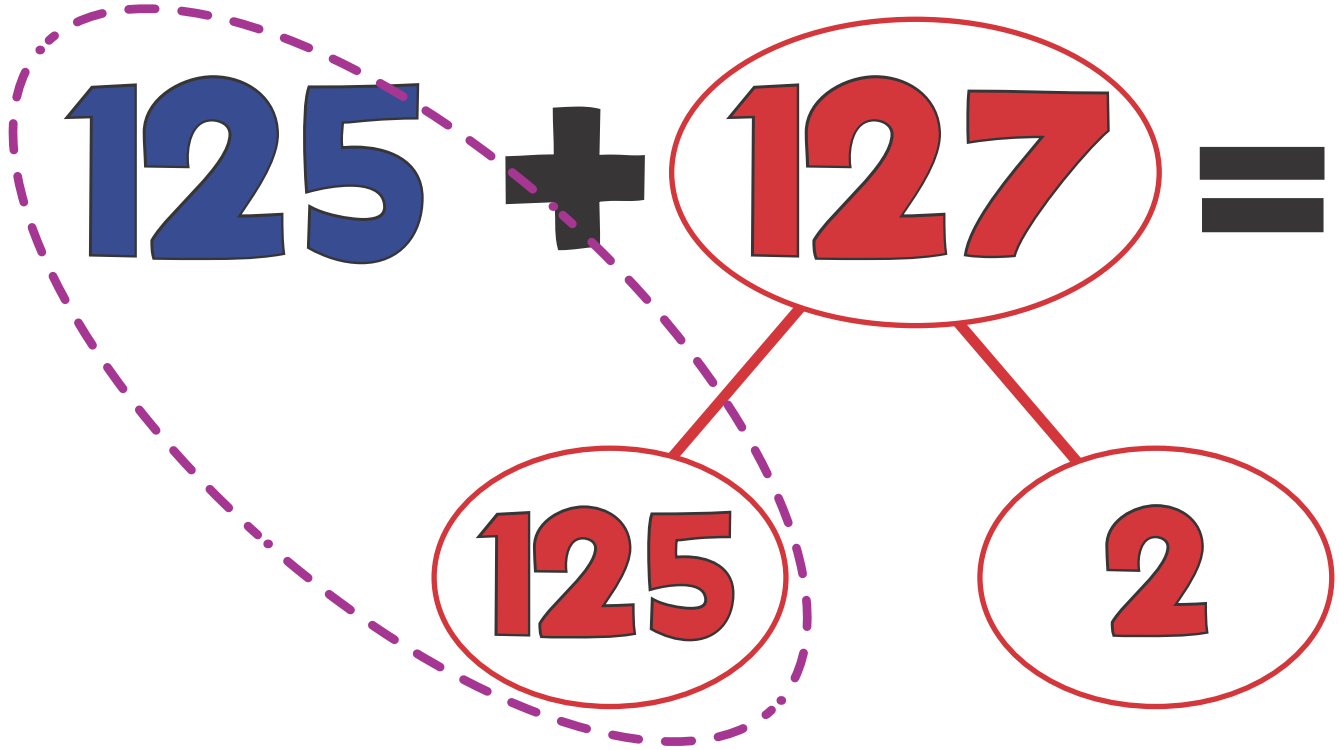
MC RaPa CoDa Numbo 4




74 + 1 = 75

# MA5: Double & Adjust

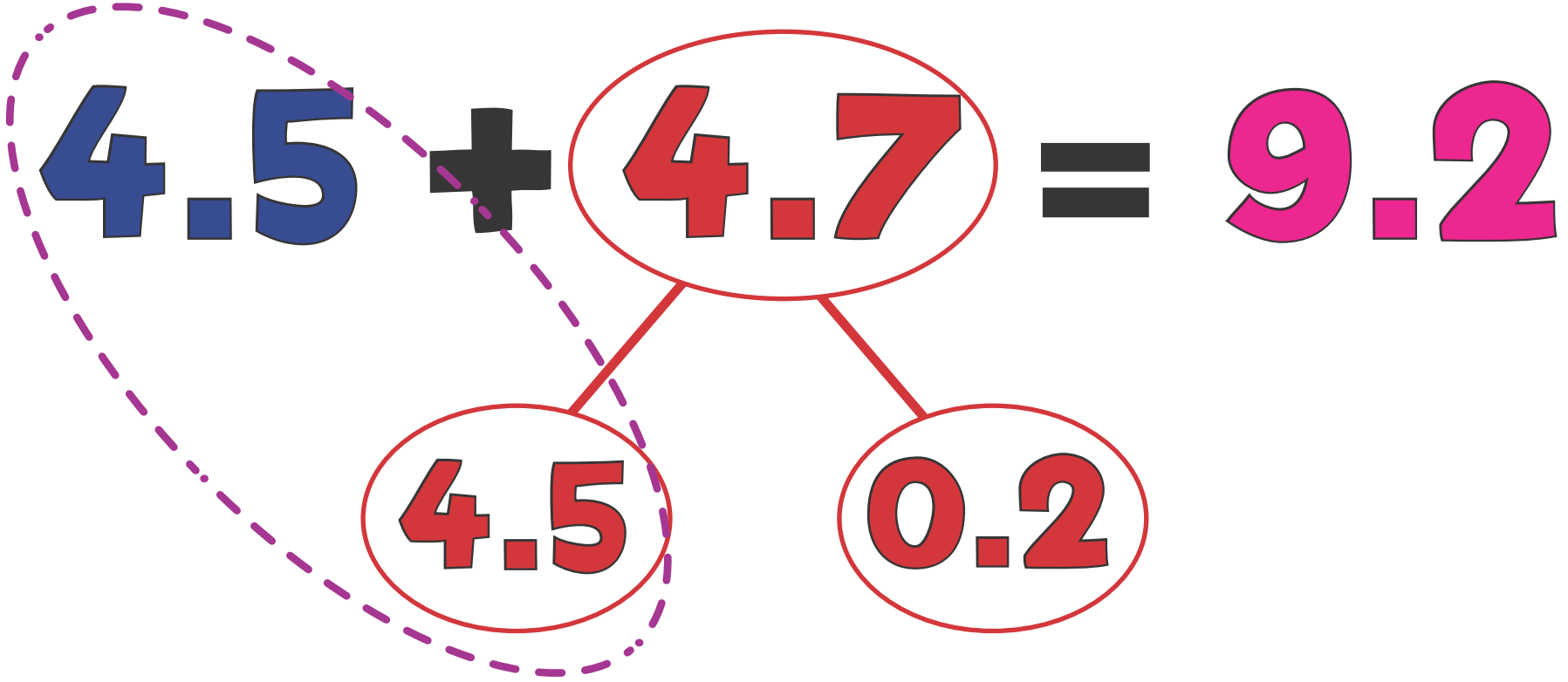
MC RaPa CoDa Numbo 5




250 + 2 = 252

# MA5: Double & Adjust

MC RaPa CoDa Numbo 6




9 + 0.2 = 9.2

# MA6: Number Bonds

MC RaPa CoDa Numbo

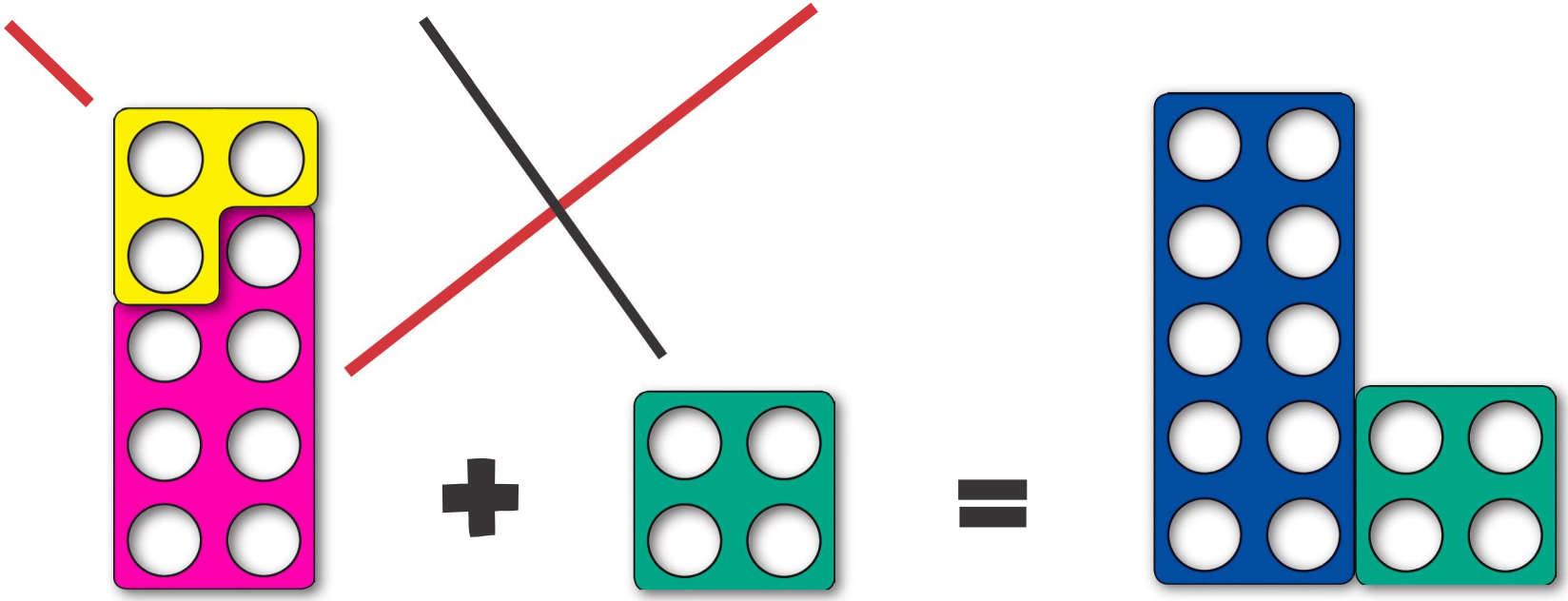
45 + 95 = 140

40 + 100 = 140

# MA6: Number Bonds

MC RaPa CoDa Numbo
Visualisation

$3 + 4 + 7 = 14$



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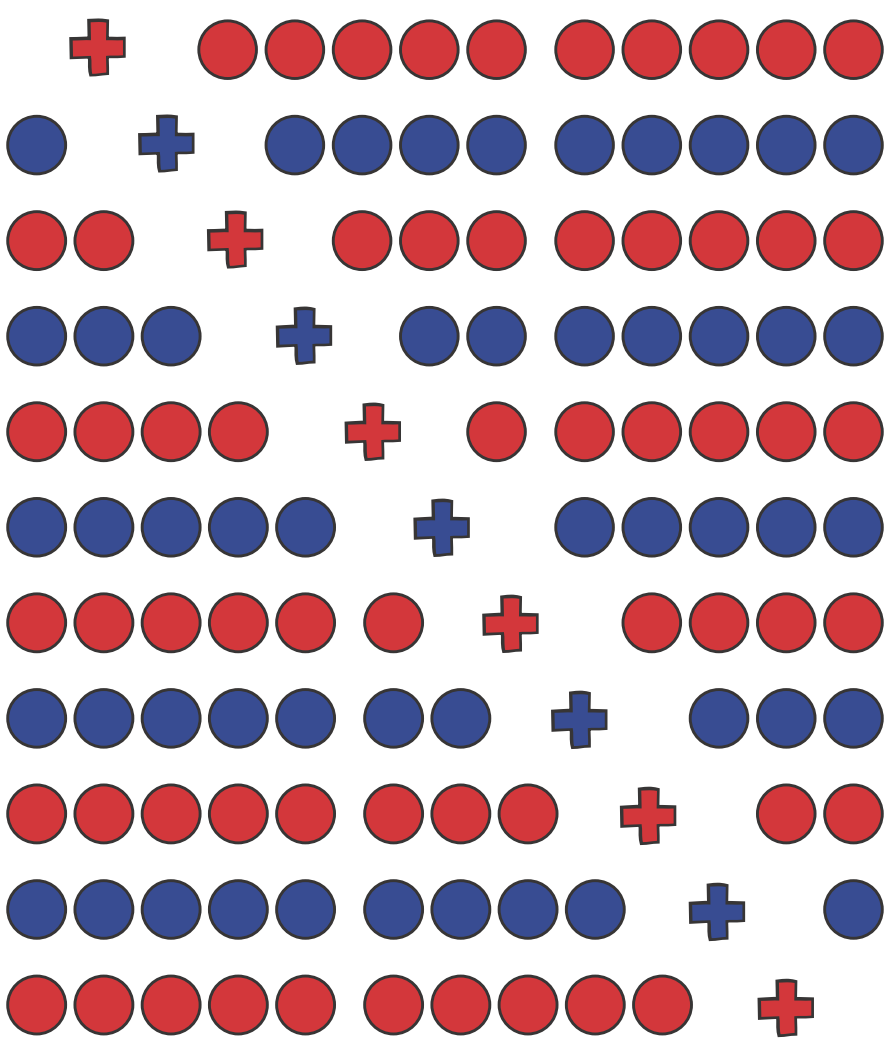
# MA6: Number Bonds

MC RaPa CoDa Numbo 1

## Learn Bonds




0 + 10 = 10
1 + 9 = 10
2 + 8 = 10
3 + 7 = 10
4 + 6 = 10
5 + 5 = 10
6 + 4 = 10
7 + 3 = 10
8 + 2 = 10
9 + 1 = 10
10 + 0 = 10

# MA6: Number Bonds

MC RaPa CoDa Numbo 2

$$3 + 4 + 7 = 14$$

10 4

# MA6: Number Bonds

MC RaPa CoDa Numbo 3

$$43 + 9 + 7 + 21 = 80$$

50 30

# MA6: Number Bonds

MC RaPa CoDa Numbo 4

$$42 + 16 + 28 + 54 = 140$$

70 70

# MA6: Number Bonds

MC RaPa CoDa Numbo 5

£4.56 + £3.27 + £1.44 = £9.27

£6.00 £3.27

# MA6: Number Bonds

MC RaPa CoDa Numbo 6

$$24.25 + 31.63 + 21.75 = 77.63$$

46

31.63