Year 4 Mental Methods

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+	**Using place value**
	Count in 1000s
	  e.g. Know 3475 + 2000 as 3475, 4475, 5475
	Partitioning
	  e.g. 746 + 40
	  e.g. 746 + 203 as 700 + 200 and 40 and 6 + 3
	  e.g. 134 + 707 as 100 + 700 and 30 and 4 + 7
	
	Counting on
	Add 2-digit numbers to 2-, 3- and 4-digit numbers by adding the multiple of 10 then the 1s
	  e.g. 167 + 55 as 167 + 50 (217) + 5 = 222
	Add near multiples of 10, 100 and 1000
	  e.g. 467 + 199
	  e.g. 3462 + 2999
	
	Count on to add 3-digit numbers and money
	  e.g. 463 + 124 as 463 + 100 (563) + 20 (583) + 4 = 587
	  e.g. £4·67 + £5·30 as £9·67 + 30p
		Using number facts
		Number bonds to 100 and to the next multiple of 100
		  e.g. 288 + 12 = 300
		  e.g. 1353 + 47 = 1400
		  e.g. 463 + 37 = 500
		
		Number bonds to £1 and to the next whole pound
		  e.g. 63p + 37p = £1
		  e.g. £3·45 + 55p = £4
		Add to the next whole number
		  e.g. 4·6 + 0·4
		  e.g. 7·2 + 0·8
			• Add any two 2-digit numbers by partitioning or counting on
			• Know by heart/quickly derive number bonds to 100 and to £1
			• Add to the next 100, £1 and whole number
			  e.g. 234 + 66 = 300
			  e.g. 3·4 + 0·6 = 4
			• Perform place-value additions without a struggle
			  e.g. 300 + 8 + 50 + 4000 = 4358
			• Add multiples and near multiples of 10, 100 and 1000
			• Add £1, 10p, 1p to amounts of money
			• Use place value and number facts to add 1-, 2-, 3- and 4-digit numbers where a mental calculation is appropriate
			  e.g. 4004 + 156 by knowing that 6 + 4 = 10 and that 4004 + 150 = 4154 so the total is 4160

−	**Taking away**
	Use place value to subtract
	  e.g. 4748 − 4000
	Take away multiples of 10, 100, 1000, £1, 10p or 0·1
	  e.g. 8392 − 50
	  e.g. 6723 − 3000
	  e.g. £3·74 − 30p
	  e.g. 5·6 − 0·2
	Partitioning
	  e.g. £5·87 − £3·04 as £5 − £3 and 7p − 4p
	  e.g. 7493 − 2020 as 7000 − 2000 and 90 − 20
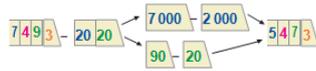	
	Count back
	  e.g. 6482 − 1301 as 6482 − 1000 (5482) − 300 (5182) − 1 = 5181
	Subtract near multiples of 10, 100, 1000 or £1
	  e.g. 3522 − 1999
	  e.g. £34·86 − £19·99
		Counting up
		Find a difference between two numbers by counting up from the smaller to the larger
		  e.g. 506 − 387
		  e.g. 4000 − 2693
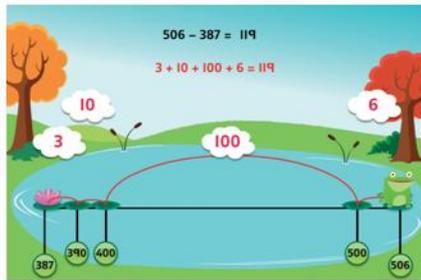		
		506 − 387 = 119
		3 + 10 + 100 + 6 = 119
			• Subtract any two 2-digit numbers
			• Know by heart/quickly derive number bonds to 100
			• Perform place-value subtractions without a struggle
			  e.g. 4736 − 706 = 4030
			• Subtract multiples and near multiples of 10, 100, 1000, £1 and 10p
			• Subtract multiples of 0·1
			• Subtract by counting up
			  e.g. 503 − 368 is done by adding 368 + 2 + 30 + 100 + 3 (so we added 135)
			• Subtract, when appropriate, by counting back or taking away, using place value and number facts
			• Subtract £1, 10p, 1p from amounts of money
			• Find change from £10, £20 and £50

X	**Counting in steps (sequences)**
	Count in 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s, 11s, 12s, 25s, 50s, 100s and 1000s
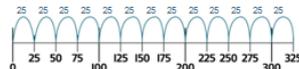	
	Doubling and halving
	Find doubles to double 100 and beyond using partitioning
	  e.g. double 126
	
	126
	200 52
	252
	
	Begin to double amounts of money
	  e.g. £3·50 doubled is £7
	
	Use doubling as a strategy in multiplying by 2, 4 and 8
	  e.g. 34 × 4 is double 34 (68) doubled again = 136
		Grouping
		Use partitioning to multiply 2-digit numbers by 1-digit numbers
		  e.g. 24 × 5
		
		Multiply multiples of 100 and 1000 by 1-digit numbers using tables facts
		  e.g. 400 × 8 = 3200
		Multiply near multiples by rounding e.g.
		  24 × 19 as (24 × 20) − 24 = 456
		
		Using number facts
		Know times-tables up to 12 × 12
			• Know by heart all the multiplication facts up to 12 × 12
			• Recognise factors up to 12 of 2-digit numbers
			• Multiply whole numbers and 1-place decimals by 10, 100, 1000
			• Multiply multiples of 10, 100 and 1000 by 1-digit numbers
			  e.g. 300 × 6
			• Use understanding of place value and number facts in mental multiplication
			  e.g. 36 × 5 is half of 36 × 10
			• Partition 2-digit numbers to multiply by a 1-digit number mentally
			  e.g. 4 × 24 as 4 × 20 and 4 × 4
			• Multiply near multiples by rounding
			  e.g. 33 × 19 as (33 × 20) − 33
			• Find doubles to double 100 and beyond using partitioning
			• Begin to double amounts of money

Chandos Calculation Policy

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Doubling and halving
Find half of even numbers to 200 and beyond using partitioning
e.g. find half of 258

$$258$$
$$100 \quad 29$$
$$129$$

Begin to halve amounts of money
e.g. £9 halved is £4·50

Use halving as a strategy in dividing by 2, 4 and 8
e.g. 164 ÷ 4 is half of 164 (82) halved again = 41

Grouping
Use multiples of 10 times the divisor to divide by 1-digit numbers above the tables facts
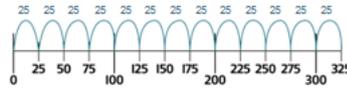*e.g. 45 ÷ 3 as 10 × 3 (30) and 5 × 3 (15)*

$$45 ÷ 3 = \square$$

$$\square × 3 = 45 \qquad 45 ÷ 3 = 15$$
$$10 × 3 = 30$$
$$15$$
$$5 × 3 = 15$$
$$0$$
$$15$$

Divide multiples of 100 by 1-digit numbers using division facts
e.g. 3200 ÷ 8 = 400

Counting in steps (sequences)
Count in 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s, 11s, 12s, 25s, 50s, 100s and 1000s

Using number facts
Know times-tables up to 12 × 12 and all related division facts

- Know by heart all the division facts up to 144 ÷ 12
- Divide whole numbers by 10, 100, to give whole number answers or answers with 1 decimal place
- Divide multiples of 100 by 1-digit numbers using division facts
   e.g. *3200 ÷ 8 = 400*
- Use place value and number facts in mental division
   e.g. *245 ÷ 20 is half of 245 ÷ 10*
- Divide larger numbers mentally by subtracting the 10th or 20th multiple as appropriate
   e.g. *156 ÷ 6 is 20 + 6 as 20 × 6 = 120 and 6 × 6 = 36*
- Find halves of even numbers to 200 and beyond using partitioning
- Begin to halve amounts of money
e.g. *half of £52·40 is £26·20*

Chandos Calculation Policy