Year 3 Addition and Subtraction

Prior Knowledge
Represent and use number bonds and related subtraction facts within 20 (Y1) Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: -a two-digit number and 1s -a two-digit number and 10s -2 two-digit numbers -adding 3 one-digit numbers (Y1&2) Show that addition of 2 numbers can be done in any order (commutative) and subtraction of one number from another cannot (Y2) Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (Y1&2)

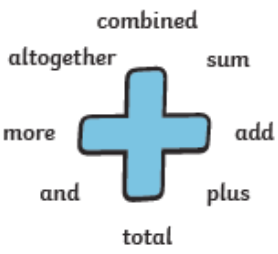
addition and subtraction		Working Towards	Within	Expected	Above
+ −	Add and subtract numbers mentally, including: • a three-digit number and 1s • a three-digit number and 10s • a three-digit number and 100s				
	Add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction				
	Estimate the answer to a calculation and use inverse operations to check answers				
	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.				

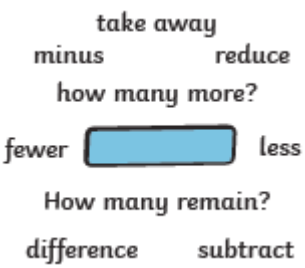
Highlights: _____

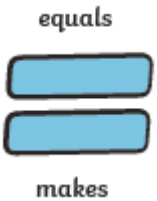
_____

Glossary

vocabulary	word class	definition
addition +	noun	the process of calculating the total of two or more numbers or amounts
add +	verb	put together (two or more numbers or amounts) to calculate their total value
subtraction -	noun	the process of taking a matrix, vector, or other quantity away from another under specific rules to obtain the difference
subtract -	verb	take away (a number or amount) from another to calculate the difference
equal (to) =	adjective	being the same in quantity, size, degree, or value
commutative	adjective	involving the condition that a group of quantities connected by operators gives the same result whatever the order of the quantities involved, e.g. a × b = b × a
inverse	noun	a reciprocal quantity, mathematical expression, geometric figure, etc. which is the result of inversion
calculation	noun	a mathematical determination of the amount or number of something
columnar	*adjective*	*resembling an upright pillar or column*







Resources

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
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
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Addition and Subtraction Methods

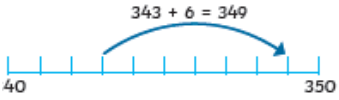
3-digit and 1-digit numbers

Not crossing 10s

268 – 4 = 264

Hundred	Ten	Ones
●●	●●●	●●●●

343 + 6 = 349



Crossing 10s (Exchanging)

324		
300	20	4
300	10	14

316 + 8 = 324

316	8

324 - 8 = 316

3-digit and 2-digit numbers

Add and subtract tens

Hundred	Ten	Ones
●●	●●●	●

451 + 3 tens = 481 (5 + 3 = 8)

451 – 4 tens = 411 (5 – 4 = 1)

Crossing 10s (Exchanging)

258 + 80 = 338

- Column method
- Count in 10s mentally
- Add 100, subtract 20

Crossing 10 and 100

368	368	368
+73	+73	+73
1	41	441
1	11	11

441	441	441
−73	−73	−73
8	68	368

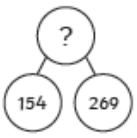
3-digit numbers

Not crossing

679 – 351 = 328

Hundred	Ten	Ones
●●●	●●●●	●●●●●

Crossing 10s (Exchanging)



269
+154
423
11

514	
268	?

4 10 1
5 1 4
- 268
246

Add and Subtract 100s

284 + 300 = 584

Hundred	Ten	Ones
■■	■	■
■■■		

Estimate

Estimate by dividing the hundred into 250 and 225.

Estimate 10s (330, 340) between 325 and 350.

Estimate 167 – 89

Use near numbers 170 – 90 = 80

Near numbers:

413	279	521	782
↓	↓	↓	↓
400	300	500	800

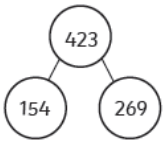
Check Answers

347	
273	74

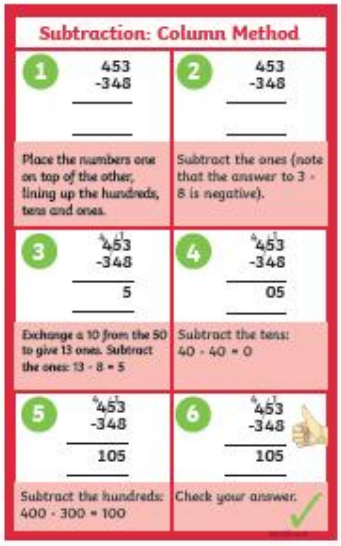
347 – 74 = 273 can be checked using

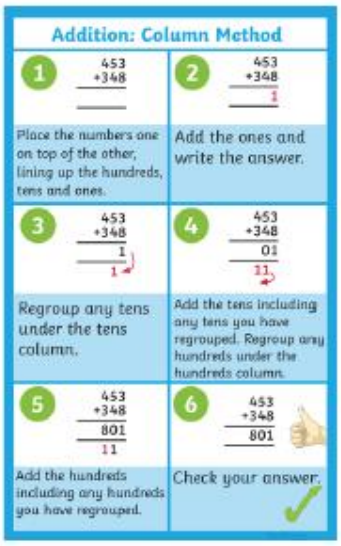
273 + 74 = 347

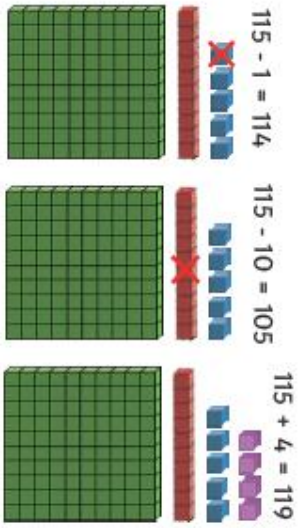
This part whole shows the inverse calculations using these three numbers.

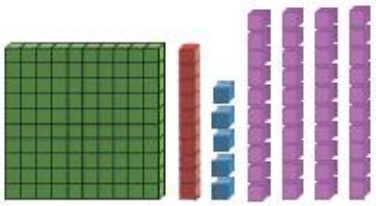


154 + 269 = 423	269 + 154 = 423
423 – 154 = 269	423 – 269 = 154

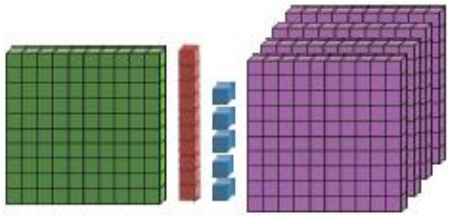




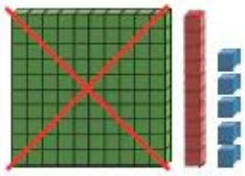




115 + 40 = 155



115 + 400 = 515



115 - 100 = 15

Future Learning

Year 4
• Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate • Estimate and use inverse operations to check answers to a calculation • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Year 6
• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why