Subtraction

Pupils read, write and interpret mathematical statements involving subtraction(–) and equals (=) signs.
They represent and use number bonds and related subtraction facts within 20. Pupils memorise and reason with number bonds to 10 and 20 in several forms (for example, 9 + 7 = 16; 16 – 7 = 9; 7 = 16 – 9). They should realise the effect of subtracting zero.
Pupils discuss and solve problems in familiar practical contexts, including using quantities. Problems should include the terms:
Children are shown that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
Pupils recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Key vocabulary

subtraction subtract minus take away equals difference minuend subtrahend

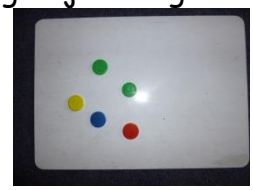
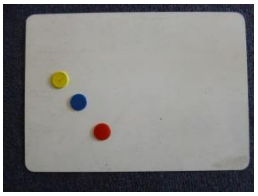
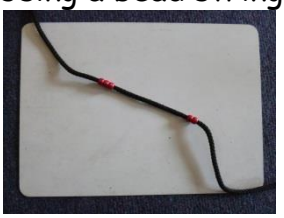
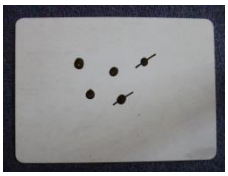
Key stem sentences

Minuend subtract subtrahend equals difference.

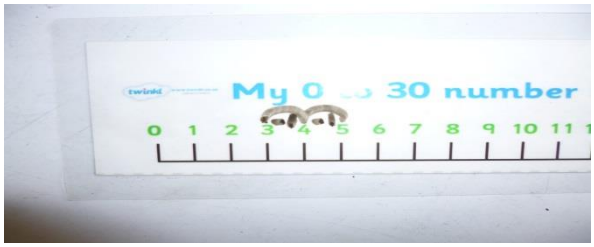
Subtraction is not commutative.

- <u>Subtract a 1-digit number from a 1-digit number</u>

  Eg 5-2

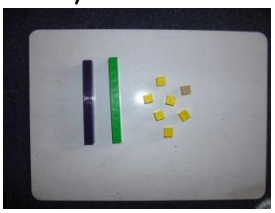
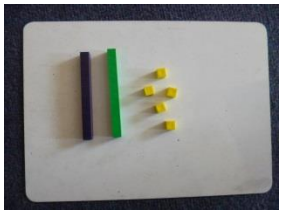
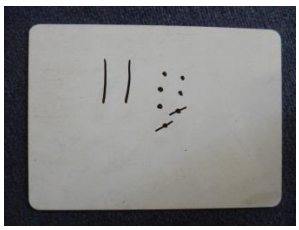
concrete	pictorial	abstract
Using objects eg counters   Using a bead string 	Drawing objects or dots 	5-2=3 3=5-2

Numbered number line: start at 5 and jump back 2 ones.

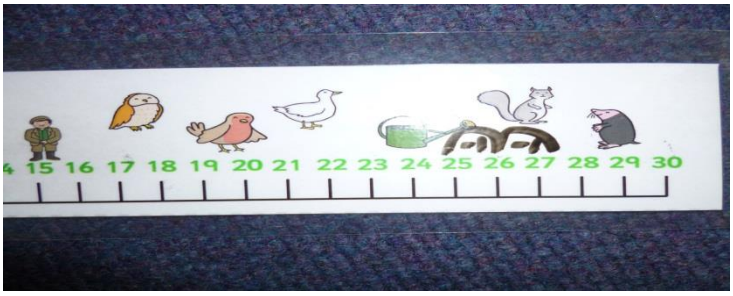


Children are taught to solve one-step problems that involve subtraction of a 1-digit number from a 1-digit number, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ – 9.

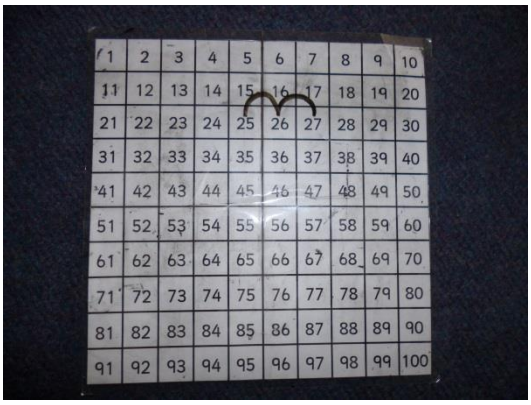
- <u>Subtract a 1-digit number from a 2-digit number, including 0, initially up to 20, where no re-grouping is required.</u>
  Eg27-2

concrete	pictorial	abstract
Use apparatus to use knowledge of place value to make 27, then subtract 2   	Draw two sticks of 10 (2 tens), and 7 dots to represent 7 ones. Cross out 2 ones. 	27-2=25 25=27-2

Numbered number line: start at 27 and jump back two ones.

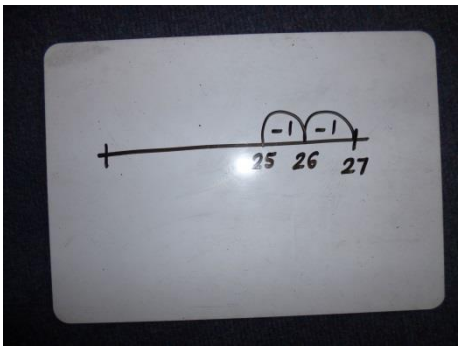


Number square: start at 27 and jump back two ones.



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

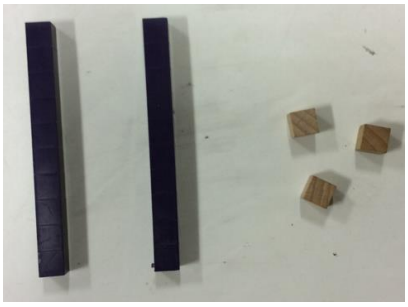
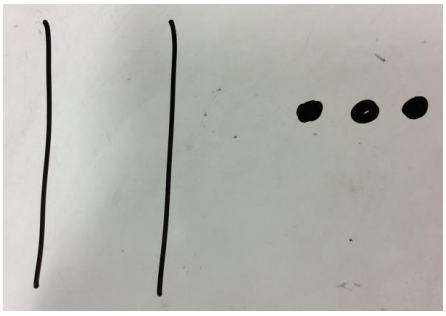
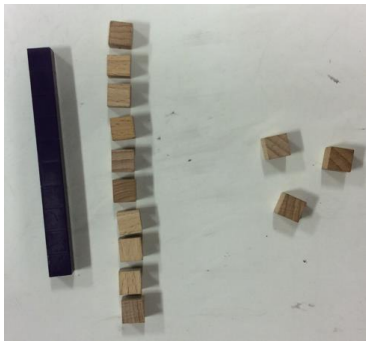
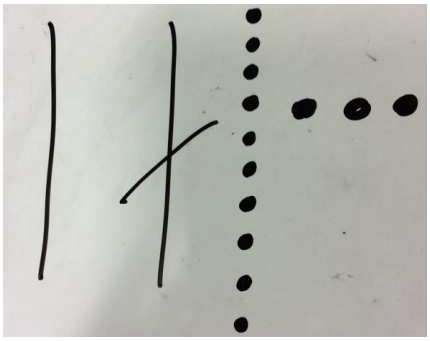
Empty number line: start at 27 and jump back two ones.

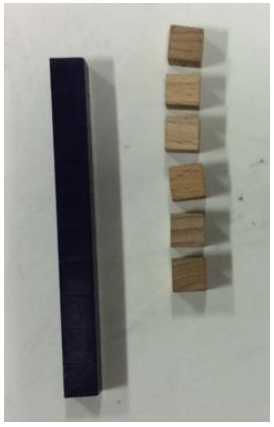
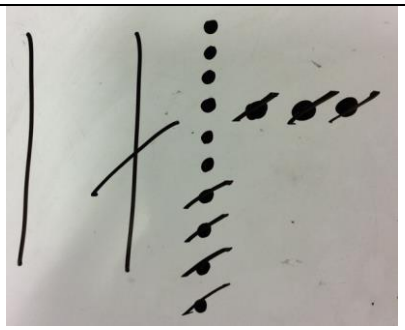


The children will be taught to use number bonds and related subtraction facts within 20
(e.g. 17 = 9 + ☐ 14 = 6 + ☐).

- Subtract a 1-digit number from a 2-digit number, including 0, initially up to 20, where re-grouping is required.

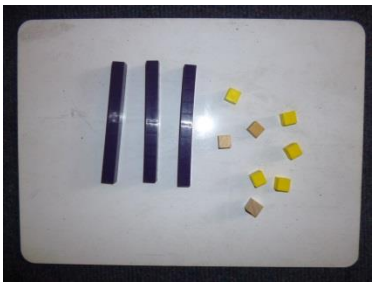
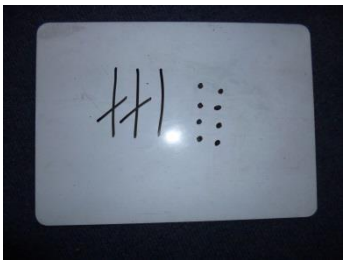
Eg 23 - 7

concrete	pictorial	abstract
Use tens and ones to make the 23 	Draw tens and ones to show 23 	23 – 7 = 16 16 = 23 - 7
Exchange 1 ten into 10 ones. 	Cross out 1 ten and exchange by drawing 10 ones. 	
Subtract 7 ones.	Cross out 7 ones.	

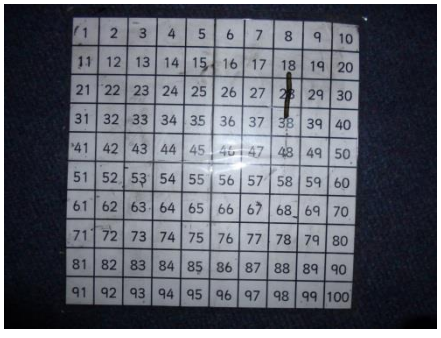
		

- <u>Subtract tens from a 2-digit number</u>

  Eg 38 - 20

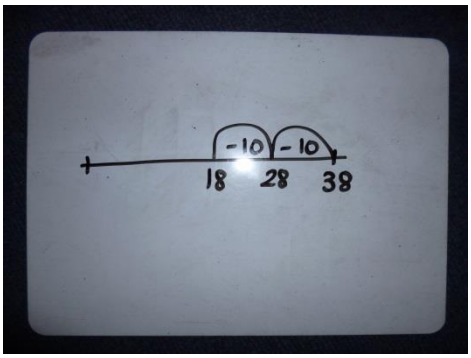
concrete	pictorial	abstract
Use tens and ones to make the 38. Subtract the tens. 	Draw tens and ones and cross out the tens. 	38-20=18 18=38-20

Number square: subtract tens by moving up a row vertically to encourage mental addition. Ensure children understand this is subtracting tens, not ones.



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

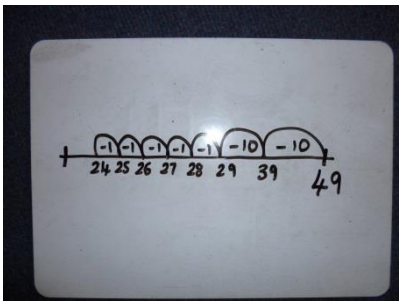
Empty number line: Start at 38. Subtract1 ten, then subtract another 10. Eventually children will subtract the 20 in one jump.



- <u>Subtract a 2-digit number from a 2-digit number mentally, where no re-grouping is required</u>
  Eg 49 - 25

  Pupils should be encouraged to explain verbally their mental calculation. An empty number line can be used to demonstrate this.

  Empty number line: Start at 49. Subtract 1 ten, then subtract another 10 (or 20 in one jump). Then subtract 5 ones.

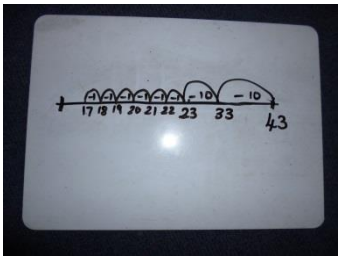


  Recognise the inverse relationships between addition and subtraction and use this to check calculations and work out missing number problems
  (e.g. $\square$ – 13 = 26).

- <u>Work out mental calculations where regrouping is required</u>
  Eg 43 – 26

Pupils should be encouraged to explain verbally their mental calculation. An empty number line can be used to demonstrate this.

Empty number line: Start at 43. Subtract 1 ten, then subtract another 10 (or 20 in one jump). Then subtract 6 ones.



Pupils will be taught to use estimation to check that their answers to a calculation are reasonable.

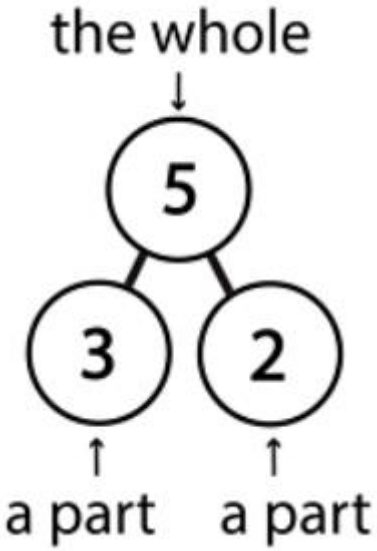
Pupils will be taught to solve more complex missing number problems

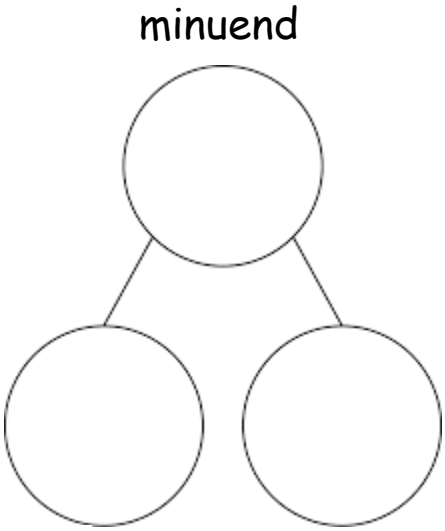
14 + ☐ = 15 + 27

(15 + 27 = 42, 42 – 14 = 28, 14 + 28 = 15 + 27)

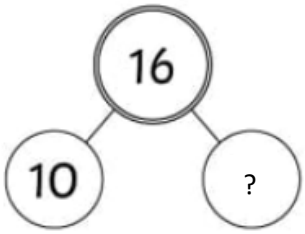
Key models and representations for subtraction:

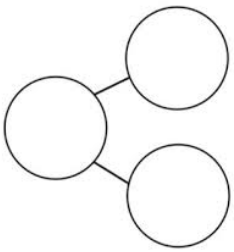
part / whole model

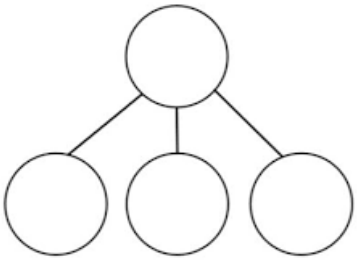




difference ⟷ subtrahend







bar models (especially for fact families)

Whole	
Part	Part

20	
?	8