Year 3

Add numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds.
Add numbers with up to three digits, using formal written methods of columnar addition.
Add fractions with the same denominator within 1 whole.
Calculate the time taken by particular events or tasks.

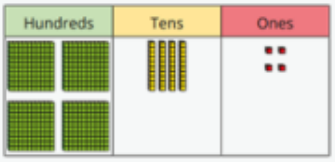
Progression of skills

Representations

Add 1s, 10s or 100s to a 3-digit number

Emphasis on mental strategies including number bonds and related facts.
Prompt children to notice which digit changes.

The ones/tens/hundreds column will increase by ...



444 + 5 =
444 + 50 =
444 + 500 =

777 + 2 =
777 + 20 =
777 + 200 =

What patterns do you notice?

235 + 3 =
235 + 30 =
235 + 300 =

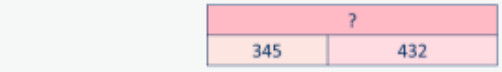
604 + 20 =
604 + 50 =
604 + 90 =

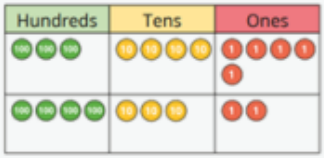
111 + ☐ = 118
111 + ☐ = 181
111 + ☐ = 811

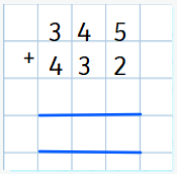
Add two numbers (no exchange)

Mental strategies and introduction of formal written method.

... ones + ... ones = ... ones
... tens + ... tens = ... tens
... hundreds + ... hundreds = ... hundreds



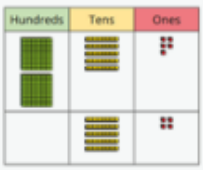


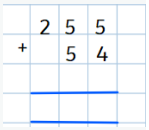


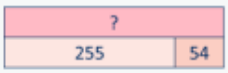
Add two numbers across a 10 or 100

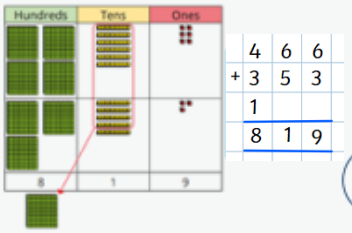
Formal written method involving up to 2 exchanges including 3-digit plus 2-digit numbers.

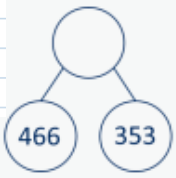
There are ... ones, so I do/do not need to make an exchange.
There are ... tens, so I do/do not need to make an exchange.
... ones = ... ten and ... ones.
... tens = ... hundred and ... tens.

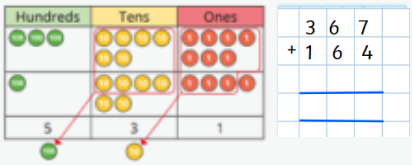








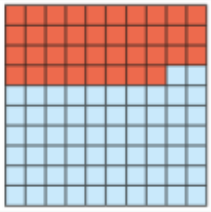


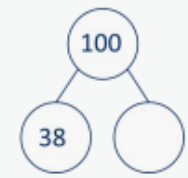


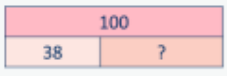
Complements to 100

Pairs of numbers which total 100

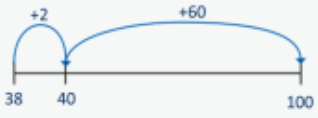
... plus ... is equal to 100







I add ... to get to the next 10, then ... to get to 100



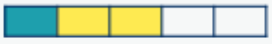
38 + 62 = 100
62 + 38 = 100
100 = 38 + 62
100 = 62 + 38

Add fractions with the same denominator within 1 whole

Make links with known facts.

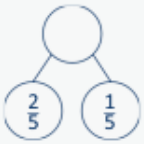
When adding fractions with the same denominator, I only add the numerator.
... fifths + ... fifths = ... fifths

$\frac{1}{5} + \frac{1}{5}$



$\frac{1}{5} + \frac{2}{5}$

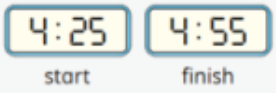
$\frac{1}{5} + \frac{3}{5}$

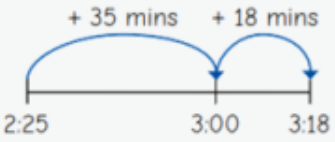


Calculate the duration of events

Find durations of time between a given start and end point. Children will need to calculate complements to 60

From ... to ... o'clock is ... minutes.
From ... o'clock to ... is ... minutes.
The total time taken is ... minutes.





Year 3

Subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds.
Subtract numbers with up to three digits, using formal written methods.
Subtract fractions with the same denominator within 1 whole.

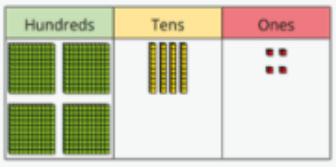
Progression of Skills

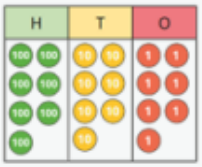
Representations

Subtract 1s, 10s and 100s from a 3-digit number

Emphasis on mental strategies including number bonds and related facts. Prompt children to notice which digit changes.

The ones/tens/hundreds column will decrease by ...





444 − 2 =
444 − 20 =
444 − 200 =

777 − 4 =
777 − 40 =
777 − 400 =

What patterns do you notice?

235 − 3 =
235 − 30 =
235 − 300 =

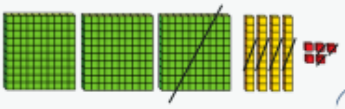
624 − 20 =
654 − 50 =
694 − 90 =

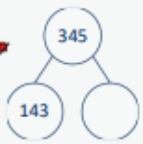
118 − ☐ = 111
181 − ☐ = 111
811 − ☐ = 111

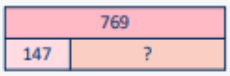
Subtract two numbers (no exchange)

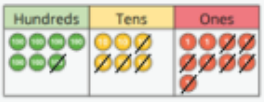
Mental strategies and introduction of formal written method.

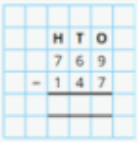
... ones − ... ones = ... ones
... tens − ... tens = ... tens
... hundreds − ... hundreds = ... hundreds







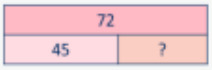


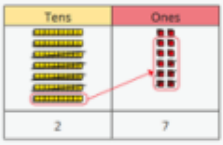


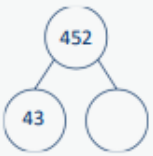
Subtract two numbers across a 10 or 100

Formal written method involving up to 2 exchanges including 3-digit subtract 2-digit numbers.

I need to subtract ... ones. I do/do not need to make an exchange.
I need to subtract ... tens. I do/do not need to make an exchange.
I can exchange 1 ... for 10 ...





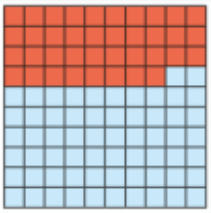


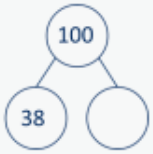
Complements to 100

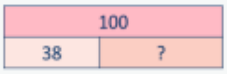
Focus on subtraction facts.

Encourage children to notice patterns.

100 minus ... is equal to ...

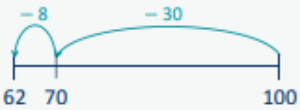






I subtract ... tens, then I subtract ... ones.

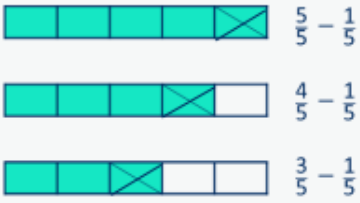
100 − 38 = 62
100 − 62 = 38
62 = 100 − 38
38 = 100 − 62

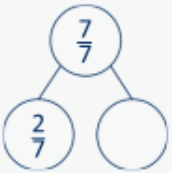


Subtract fractions with the same denominator within 1 whole

Make links with known facts.

When subtracting fractions with the same denominator, I only subtract the numerator.
... fifths − ... fifths = ... fifths



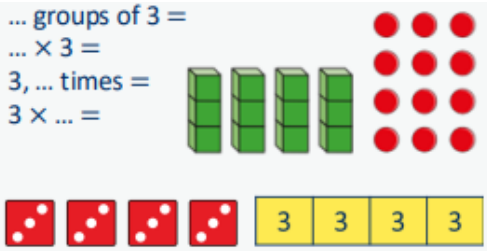


Year 3	Recall and use multiplication facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. Solve problems, including missing number problems, involving multiplication, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.
Progression of Skills	Representations

The 3 times-table

Encourage daily counting in multiples both forwards and back.

... groups of 3 =
... × 3 =
3, ... times =
3 × ... =



... times 3 is equal to ...

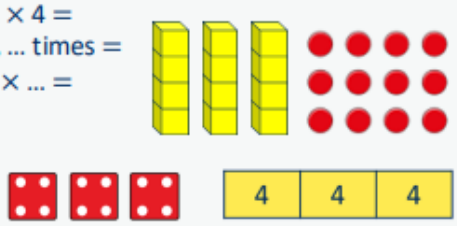
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

4 × 3 = 12 12 = 4 × 3

The 4 times-table

Encourage daily counting in multiples both forwards and back. Encourage children to notice links between the 2 and 4 times-tables.

... groups of 4 =
... × 4 =
4, ... times =
4 × ... =



... times 4 is equal to ...

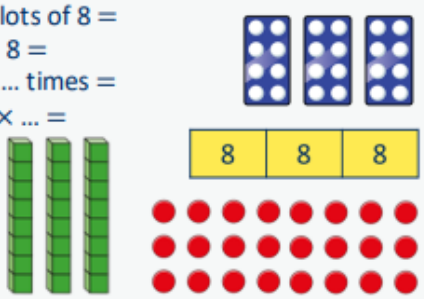
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

3 × 4 = 12 12 = 3 × 4

The 8 times-table

Encourage daily counting in multiples both forwards and back. Encourage children to notice links between the 2, 4 and 8 times-tables.

... lots of 8 =
× 8 =
8, ... times =
8 × ... =



... times 8 is equal to ...

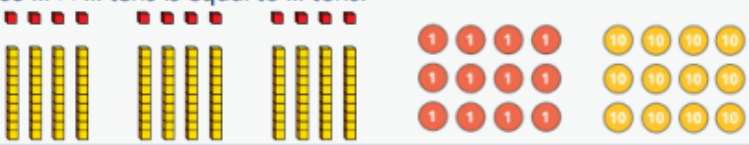
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

3 × 8 = 24 24 = 3 × 8

Related facts

Use knowledge of multiplying by 10 to scale times-table facts.

... × ... ones is equal to ... ones
so ... × ... tens is equal to ... tens.



3 × 4 = 12
3 × 40 = 120

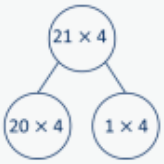
Multiply a 2-digit number by a 1-digit number - no exchange

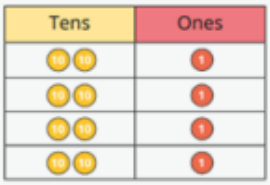
Children apply their understanding of partitioning to represent and solve calculations using the expanded method.

... tens multiplied by ... is equal to ... tens.
...ones multiplied by ... is equal to ... ones.

30 × 2 = 60
2 × 2 = 4

32 × 2 = 64





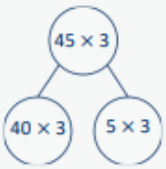
Multiply a 2-digit number by a 1-digit number - with exchange

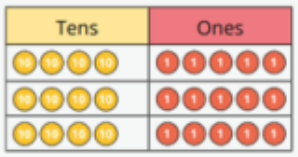
Children apply their understanding of partitioning to represent and solve calculations using the expanded method.

... tens multiplied by ... is equal to ... tens.
... ones multiplied by ... is equal to ... ones.

$20 \times 4 = 80$
$4 \times 4 = 16$

$24 \times 4 = 96$





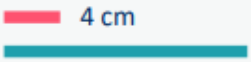
Scaling

Children focus on multiplication as scaling (.... times the size) as opposed to repeated addition.

There are .... times as many ... as ...

There are 3 times as many triangles as circles.

... is ... times the size of ...
... is ... times the length/height of ...



Miss Smith is twice the height of Jo.

Correspondence problems (How many ways?)

Encourage children to work systematically to find all the different possible combinations.

For every ... , there are ... possible ...
There are ... × ... possibilities altogether.

For every hat, there are two possible scarves.
$3 \times 2 = 6$

There are 6 possibilities altogether.

Year 3

Recall and use division facts for the 3, 4 and 8 multiplication tables.
Write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.
Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.

Divide by 3

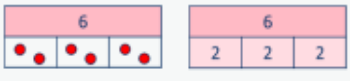
Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.

There are ... groups of 3 in ...
... ÷ 3 =

$2 \times 3 = 6$
$6 \div 3 = 2$

... has been shared equally into 3 equal groups.
... ÷ 3 =

$2 \times 3 = 6$
$6 \div 3 = 2$



Divide by 4

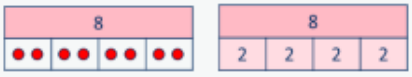
Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.

There are ... groups of 4 in ...
... ÷ 4 =

$2 \times 4 = 8$
$8 \div 4 = 2$

... has been shared equally into 4 equal groups.
... ÷ 4 =

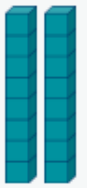
$2 \times 4 = 8$
$8 \div 4 = 2$



Divide by 8

Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.

There are ... groups of 8 in ...
... ÷ 8 =



$2 \times 8 = 16$
$16 \div 8 = 2$

... has been shared equally into 8 equal groups.
... ÷ 8 =

$2 \times 8 = 16$
$16 \div 8 = 2$

Related facts

Link to known times-table facts.

... ÷ ... is equal to ...,
so ... tens ÷ ... is equal to ... tens.

$12 \div 3 = 4$
$120 \div 3 = 40$

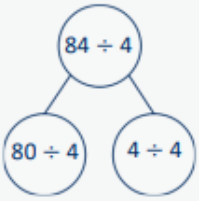
Divide a 2-digit number by a 1-digit number - no exchange

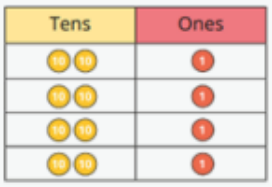
Partition into tens and ones to divide and then recombine.

... tens divided by ... is equal to ... tens.
... ones divided by ... is equal to ... ones.

$60 \div 2 = 30$
$4 \div 2 = 2$

$64 \div 2 = 32$

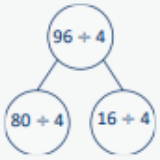




Divide a 2-digit number by a 1-digit number - with remainders

Encourage children to partition numbers flexibly to help them to divide more efficiently.

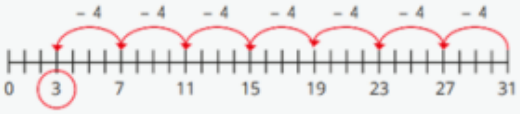
... tens divided by ... is equal to ... tens.
... ones divided by ... is equal to ... ones.



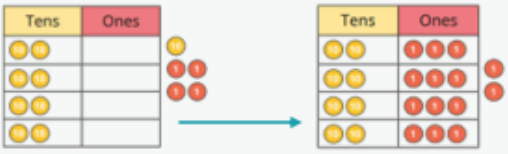
$80 \div 4 = 20$
$16 \div 4 = 4$
$96 \div 4 = 24$

There are ... groups of ...
There are ... remaining.

$31 \div 4 = 7$ r3



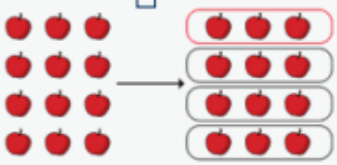
$94 \div 4 = 23$ r2



Unit fractions of a set of objects

Bar models are useful to show the link between division and fractions, for example, dividing by 3 and finding a third.

The whole is divided into ... equal parts.
Each part is $\frac{1}{\square}$ of the whole.



$\frac{1}{4}$ of 12 apples is 3 apples.

One ... of ... is ...

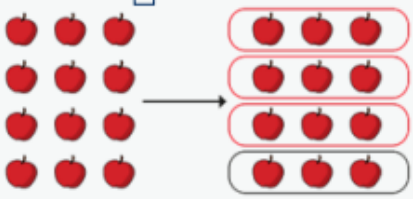
$\frac{1}{4}$ of 12 is 3

$\frac{1}{3}$ of 36 is 12

Non-unit fractions of a set of objects

Bar models are a useful representation and show the links with division and multiplication.

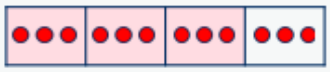
The whole is divided into ... equal parts.
Each part is $\frac{1}{\square}$ of the whole.



$\frac{3}{4}$ of 12 apples is 9 apples.

$\frac{1}{\square}$ of ... is ..., so $\frac{\square}{\square}$ of ... is ...

$\frac{3}{4}$ of 12 is 9



$\frac{2}{3}$ of 36 is 24