

# Number Facts: Year 3

## Number and place value

Pupils should be taught to:

- count from 0 in multiples of 4, 8, 50 and 100
- find 10 or 100 more or less than a given number up to 1000

## Addition and subtraction

Pupils should be taught to:

- derive complements to 100
- add and subtract numbers mentally, including:
  - a three-digit number and ones
  - a three-digit number and tens
  - a three-digit number and hundreds

## Multiplication and division

Pupils should be taught to:

- recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- write and calculate mathematical statements for multiplication and 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

## Fractions

Pupils should be taught to:

- count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
- recognise and show, using diagrams, equivalent fractions with small denominators
- add and subtract fractions with the same denominator within one whole (e.g.  $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$ )

## Measurement

Pupils should be taught to:

- measure, compare, add and subtract lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- know the number of seconds in a minute and the number of days in each month, year, and leap year

### Number Facts: Number and place value

- Know the sequence of counting in 50's.
- Know the sequence of counting in 100's

### Number Facts: Measure

- 60 seconds = 1 minute
- How many days in each month / year / leap year.
- Find complements to 60.
- 50p x 2 = £1.00      £50 x 2 = £100
- 25 p x 4 = £1.00      £25 x 4 = £100
- 20p x 5 = £1.00      £20 x 5 = £100
- 1000 g = 1kg      1000ml = 1l
- 1000 m = 1km
- 1000 ÷ 2 = 500      1000 ÷ 4 = 250
- $\frac{1}{2}$  l/kg/km = 500
- $\frac{1}{4}$  l/kg/km = 250
- $\frac{3}{4}$  l/kg/km = 750

### Number Facts: Fractions

- $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10}$
- $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{5}{5} = 1$  whole
- $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{6}{6} = 1$  whole
- $\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{7}{7} = 1$  whole
- $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{8}{8} = 1$  whole
- $\frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} = \frac{9}{9} = 1$  whole
- $\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \frac{10}{10} = 1$  whole
- Understand fraction facts related to whole number facts  
 $1 + 5 = 6$  (Year 1) linked to  $\frac{1}{6} + \frac{5}{6} = \frac{6}{6}$  (Year 3)

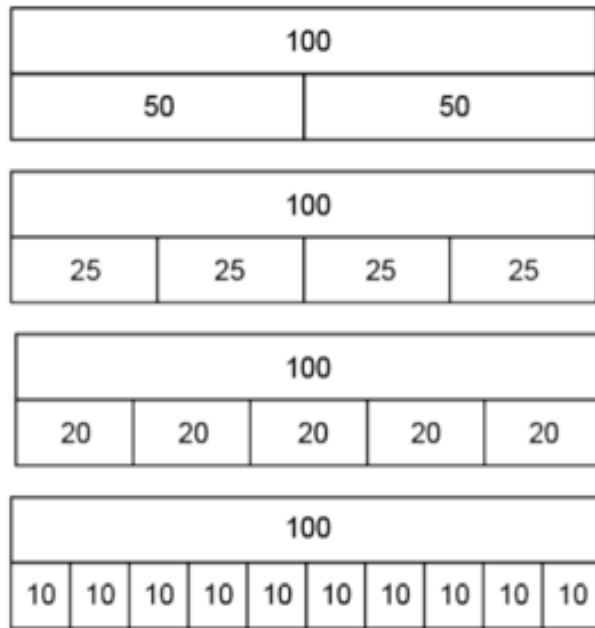
### Number facts: Addition and subtraction

- Know or derive all the complements to 100  
 $x + y = 100$  ;  $x = ?$  and  $y = ?$
- Know pairs of multiples of 100 that total 1000  
 $1 + 9 = 10$  (Year 1)  
 $10 + 90 = 100$  (Year 2)  
 $100 + 900 = 1000$  (Year 3)
- Add and subtract numbers with up to 3 digits (e.g.  $253 + 75 = 328$ )

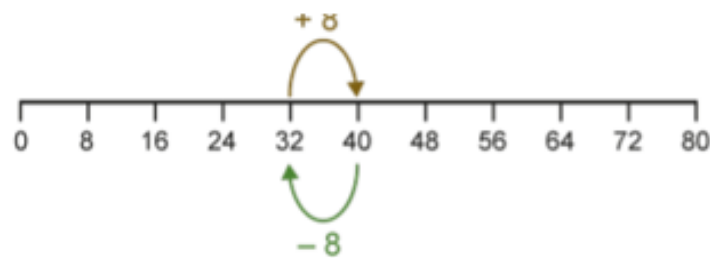
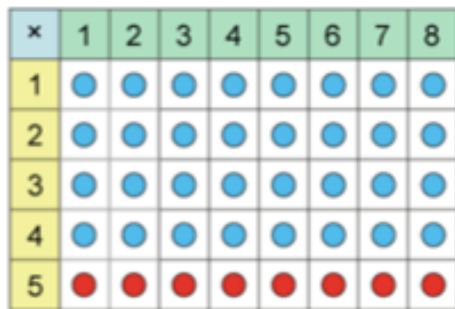
### Number Facts: Multiplication and division

- Know the 3x, 4x and 8x table and the related division facts
- Understand that doubling means x 2
- Understand that halving means ÷ 2
- Know that...  
 $50 \times 2 = 100$  ;  $25 \times 4 = 100$  ;  $20 \times 5 = 100$

Mathematical models and images to support conceptual understanding underpinning key facts in Year 3



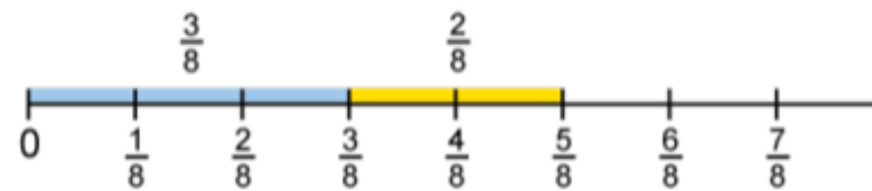
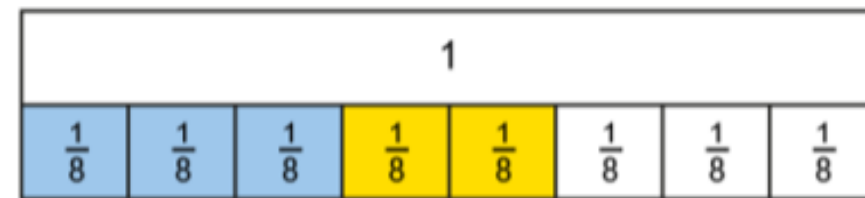
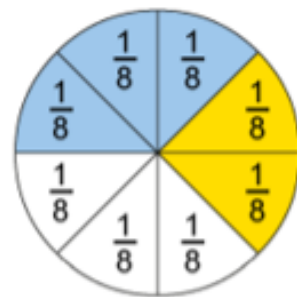
Bar models showing 100 partitioned into 2, 4, 5 and 10 equal parts.



Number line and array showing that adjacent multiples of 8 (32 and 40) have a difference of 8

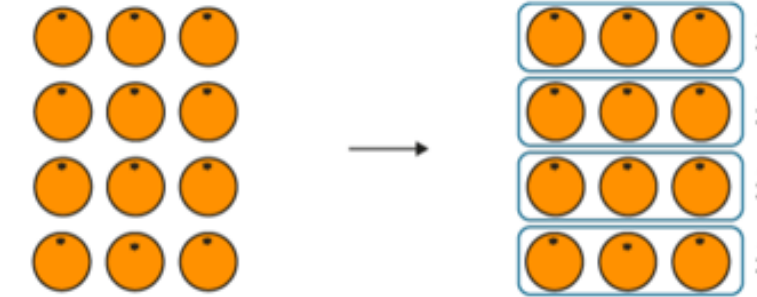


Number line to identify previous and next multiples of 100

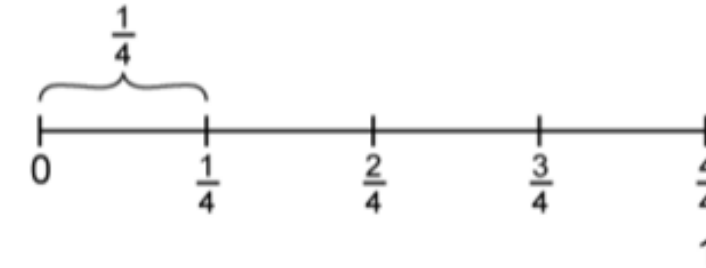


$\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$

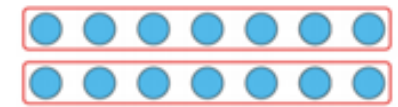
$\frac{5}{8} - \frac{2}{8} = \frac{3}{8}$



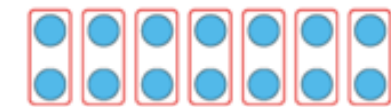
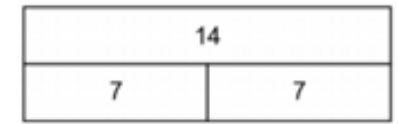
12 oranges divided into four equal parts



10-value place value counters in a 3-by-5 array to show  $3 \times 50 = 30 \times 5 = 150$



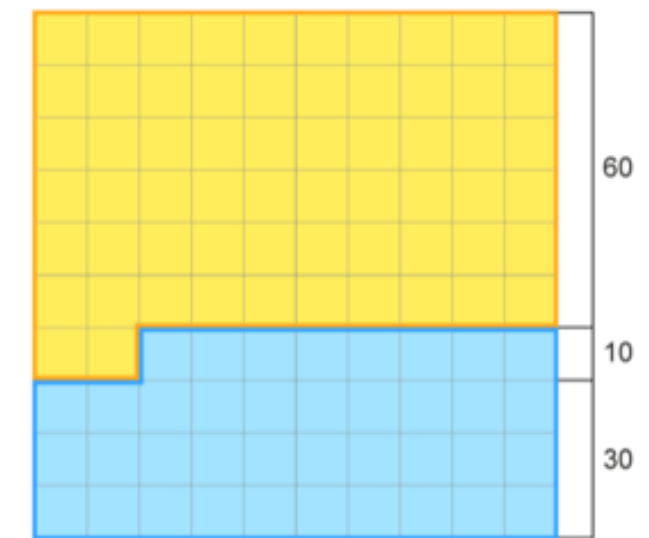
$14 + 2 = 7$



$14 + 2 = 7$



$7 \times 2 = 2 \times 7$



100-grid to show the complement  $62 + 38 = 100$