

MATH · Y4-Y6

# Decimals

Knowledge Organiser — Y4 to Y6

## Key vocabulary

1

**Decimal**

A number with digits after the point. 3.7 has 7 tenths.

2

**Decimal point**

The dot that separates whole numbers from fractions of a whole. 3.7 reads 'three point seven'.

3

**Tenths**

First place after the decimal point.  $0.1 = 1/10$ .

4

**Hundredths**

Second place after the decimal point.  $0.01 = 1/100$ .

5

**Thousandths**

Third place after the decimal point.  $0.001 = 1/1000$ .

6

**Decimal place (dp)**

How many digits after the point. 3.5 has 1dp; 3.567 has 3dp.

## Comparing decimals

Be careful — more digits  $\neq$  bigger

■

$0.6 = 0.60 = 0.600$  (zeros at the end don't change the value)

●

0.6 is BIGGER than 0.59 (compare tenths first:  $6 > 5$ )



- 0.41 is BIGGER than 0.4 (because  $0.41 = 0.41$ ,  $0.4 = 0.40$ , and  $41 > 40$ )
- Reading:  $3.567 =$  'three point five six seven' (NOT 'five hundred sixty-seven')
- Reading another way:  $3.567 = 3$  ones + 5 tenths + 6 hundredths + 7 thousandths
- When comparing, line up the decimal points. Add zeros at the end to match decimal places.

## Decimal operations

How to add, subtract, multiply,

- ADD or SUBTRACT: line up the decimal points. Add zeros at the end if needed.  $3.4 + 1.27$ : write  $3.40 + 1.27 = 4.67$ .
- MULTIPLY: ignore the points first, then count total decimal places in both numbers.  $0.3 \times 0.4 = 12/100 = 0.12$  (2dp total).
- MULTIPLY BY 10/100/1000: digits move LEFT one/two/three places.  $3.45 \times 100 = 345$ .
- DIVIDE BY 10/100/1000: digits move RIGHT.  $345 \div 100 = 3.45$ .
- DIVIDE A DECIMAL BY A WHOLE NUMBER: standard short division, with the decimal point in the same place in the answer.

## Common conversions to remember

Common equivalents

- $1/2 = 0.5 = 50\%$
- $1/4 = 0.25 = 25\%$
- $3/4 = 0.75 = 75\%$
- $1/5 = 0.2 = 20\%$
- $2/5 = 0.4 = 40\%$
- $3/5 = 0.6 = 60\%$
- $4/5 = 0.8 = 80\%$



- $1/10 = 0.1 = 10\%$
- $1/8 = 0.125 = 12.5\%$
- $1/3 \approx 0.333\dots$  (it's a recurring decimal)
- $2/3 \approx 0.666\dots$
- These are worth memorising — they save lots of time on SATs.

