

Y8 Number Sense

What do I need to be able to do?

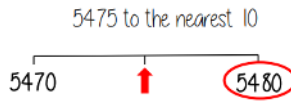
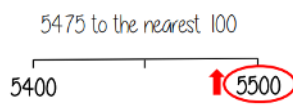
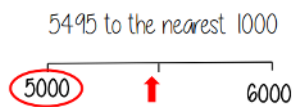
By the end of this unit you should be able to:

- Round numbers to powers of 10 and 1 sf
- Round numbers to any dp
- Estimate solutions
- Calculate using order of operations
- Calculate with money, units of measurement and time

Keywords

- Significant:** Place value of importance
- Round:** Making a number simpler but keeping its value close to what it was
- Decimal:** Place holders after the decimal point
- Overestimate:** Rounding up – gives a solution higher than the actual value
- Underestimate:** Rounding down – gives a solution lower than the actual value
- Metric:** A system of measurement
- Balance:** The amount of money in a bank account
- Deposit:** Putting money into a bank account

Round to powers of 10 and 1 sig. figure R If the number is halfway between we "round up"



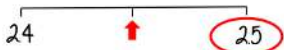
- 370 to 1 significant figure is 400
- 37 to 1 significant figure is 40
- 3.7 to 1 significant figure is 4
- 0.37 to 1 significant figure is 0.4
- 0.00037 to 1 significant figure is 0.0004

Round to the first non-zero number

Round to decimal places

"To 1dp" – to one number after the decimal
 "To 2dp" – to two numbers after the decimal

2.46192 (to 1dp) - Is this closer to 2.4 or 2.5



2.46192 (to 2dp) - Is this closer to 2.46 or 2.47



2.46192 This shows the number is closer to 2.5

2.46192 This shows the number is closer to 2.46

Focus on the numbers after the decimal point

Estimate the calculation

Round to 1 significant figure to estimate

$$4.2 + 6.7 \approx 4 + 7 \approx 11$$

This is an **overestimate** because the 6.7 was rounded up more

$$21.4 \times 3.1 \approx 20 \times 3 \approx 60$$

This is an **underestimate** because both values were rounded down

It is good to check all calculations with an estimate in all aspects of maths – it helps you identify calculation errors

Order of operations R

Brackets Operations in brackets are calculated first

Other operations e.g. powers, roots,

Multiplication/ Division

They are carried out in the order from left to right in the question

Addition/ Subtraction

They are carried out in the order from left to right in the question

Calculations with money

Debit - You have £0 or more in an account

Credit - You have less than £0 in an account



Using a calculator – ensure you are working in the correct units

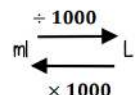
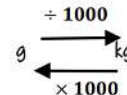
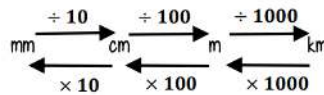
$$\begin{aligned} \text{£ } 1.30 + 50\text{p} &= 1.30 + 0.50 \text{ (in pence)} \\ &= 1.30 + 0.50 \text{ (in pounds)} \end{aligned}$$

Money calculations are to 2dp

$$\text{£ } 1 = 100\text{p}$$



Units are important: Useful Conversions



Metric measures of length

Kilo = 1000 x meter Centi = $\frac{1}{100}$ x meter

Milli = $\frac{1}{1000}$ x meter

Time and the calendar



1 Year – the amount of time it takes Earth to go around the sun **365** (and a quarter) **days**

Leap Year – **366 days** (every 4 years)



12 Months – one year – 52 weeks

31 days – Jan, March, May, July

Aug, Oct, Dec

30 days – April, June, Sept, Nov

28 days – Feb (29 leap year)

1 week – 7 days

Monday, Tuesday, Wednesday,

Thursday, Friday, Saturday, Sunday

1 day – 24 hours

1 hour – 60 minutes

1 minute – 60 seconds

Use a number line for time calculations!

Units of weight/ capacity

Weight = g, kg, t

Capacity (volume of liquid) = ml, L

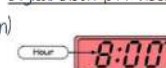
Analogue Clock



12-hour clock

- Use am (morning) and pm (afternoon)
- Only use hour times up to 12

Digital Clock (24-hour times)



24-hour clock

- 0-11 (morning hours)
- 12-23 (afternoon hours)