Rounding: fact sheet

Planner week 4 · Learn these facts

Nearest 10, 100, 1000

7 | 8 2 9 → 8000

8 is 5 or more: round up

Look at the **next digit**: 5 or more rounds up

7829 → 8000

Rounding down

6 | 3 2 4 → 6000

3 is less than 5: round down

Less than 5: the digit stays the same

6324 → 6000 (nearest 1000)

Decimal places

4 . 5 | 8 → 4.6

1 d.p. = 1 digit after the point

Count digits **after the point**

7.26451 → 7.265 (3 d.p.)

Significant figures

7 3 5 | 7 → 7360

keep the place value: fill with 0s

Count from the **first non-zero digit**

2530 → 2500 (2 s.f.)

Small numbers

0 . 0 8 | 7 4 → 0.09

zeros at the front don't count

Start counting at the first digit that isn't 0

0.0874 → 0.09 (1 s.f.)

Calculator answers

1.844977205

write ALL the figures

2 d.p. → 1.84

Copy the **whole display**, then round

Two marks for the display

Estimating

790 × 289 ÷ 49

800 × 300 ÷ 50

= 4800

Round every number to **1 s.f.** first

Show the rounded numbers

Check your answer

Size	about the same size as the start number?
0s	keep the place value (7360, not 736)
Units	£, cm … as asked

Which sheet do I need?

Rounding to the nearest 10, 100 or 1000 ▸
"to the nearest …"

Decimal places and significant figures ▸
"d.p." or "significant figures"

Estimating ▸
"estimate": round to 1 s.f. first

Key words

- **d.p.** decimal places
- **s.f.** significant figures
- **Estimate** round first, then work it out
- **Display** everything your calculator shows

Exam tips

- Draw a line after the last digit you keep, then look at the **next** digit.
- 5, 6, 7, 8, 9: round **up**. 0, 1, 2, 3, 4: stay the same.
- Rounding 19.49 to the nearest whole number gives 19, not 20.
- Estimates: round to 1 s.f. and **show** the rounded numbers.
- Use brackets or the fraction button on your calculator.
- "Is it an overestimate?" Did you round the numbers **up** or **down**?

Rounding to the nearest 10, 100 or 1000: fact sheet

Rounding · Planner week 4 · Learn the method

Worked example

QUESTION

Round 8375 to the nearest thousand.

ANSWER



next digit

The next digit is 3 (less than 5): the 8 stays

8375 → 8000

Fill the other places with zeros

Find the last digit you keep, then look at the next one.

How to do it

1. Find the digit in the place you are rounding to.
2. Look at the **next** digit to the right.
3. 5 or more: add 1 to your digit. Less than 5: leave it.
4. Replace the digits after it with **zeros** (whole numbers).
5. Nearest whole number: look at the tenths digit.

Model answer:

8375 → **8000** (nearest 1000)

Watch out

- Leaving off the zeros (8 instead of 8000).
- Rounding in two steps (19.49 → 19.5 → 20 ×).
- Looking at the wrong digit.

Decimal places and significant figures: fact sheet

Rounding · Planner week 4 · Learn the method

Worked example

QUESTION

Round 87 569 to 3 significant figures.

ANSWER

8 7 5 | 6 9

next digit

The next digit is 6 (5 or more): round the 5 up to 6

87 569 → 87 600

Fill the rest with zeros so it stays about 87 thousand

Count from the first digit that isn't zero.

How to do it

1. Decimal places: count the digits **after the point**.
2. Significant figures: start counting at the **first non-zero digit**.
3. Look at the next digit: 5 or more rounds up.
4. For big numbers, fill with zeros to keep the size (7357 → 7360).
5. Calculator questions: write **every** figure on the display, then round.

Model answer:

87 569 → 87 600

Watch out

- Counting the zeros at the front of 0.0874 as significant.
- Writing 736 instead of 7360.
- Only writing the rounded answer for "write down all the figures".

Estimating: fact sheet

Rounding · Planner week 4 · Learn the method

Worked example

QUESTION

Work out an estimate for the value of $\frac{5.7 \times 8.2}{0.26}$

ANSWER

1. Round every number to 1 significant figure: $5.7 \rightarrow 6$, $8.2 \rightarrow 8$, $0.26 \rightarrow 0.3$
2. $6 \times 8 = 48$
3. $48 \div 0.3 = 160$ $(48 \div 3 = 16$, then $\times 10)$

160

Round each number to 1 significant figure, then work it out.

How to do it

1. Round **every** number to 1 significant figure.
2. Write the rounded calculation down: this gets a mark.
3. Work it out without a calculator.
4. Overestimate or underestimate? Think about whether you rounded up or down.

Model answer:

160

Watch out

- Working out the exact answer instead.
- Rounding 0.26 to 0 (use 0.3).
- Not showing the rounded numbers.