



6 Word problems

Target

To solve word problems by:

- extracting key information;
- choosing the correct mathematical operation (+, −, ×, ÷);
- using an appropriate method of calculation.

Current understanding

Pupils should already be able to complete numerical calculations.

Common errors

- In a word problem, pupils may not recognise which numbers to use or which operation is needed.
- Pupils may mix units (for example, pence and pounds).
- Pupils may not link their answer back to the original problem.

What to do

Vocabulary

sum ($23.4 + 67$)
product (45×12)
total
more than
operation (+, −, ×, ÷)

What you need

Calculator
Word problems (sheet 6.1)
Springboard 7 (pp. 350–2)
has further questions.

Make sure that the pupil understands the target.

For each question on **sheet 6.1**, ask the pupil to:

- read the question out loud;
- tell you what they have to find out;
- decide which bits of information in the question will help them (ask them to circle this information or write it down);
- tell you how they are going to use the numbers to work out the answer;
- write down the calculation they need to do to work out the answer;
- tell you how they are going to do the calculation (in their head, using a written method or using a calculator);
- work out the answer;
- write down the answer;
- check whether the answer is sensible (ask them: 'Is this what you expected? Can you do an approximate calculation to check it?').

Hints for calculations on sheet 6.1

Make sure that the pupil writes down the answer to any intermediate steps.

1 Addition $342 + 129 = 471$

The pupil may be able to work this out mentally but may use a calculator.

Note: 27 is superfluous information.

- 2** Multiplication, using a calculator, followed by a subtraction
 $42 \times 63 = 2646$
 $2646 - 423 = 2223$ Answer: £2223
- 3** Take care with the units
 $2 \times 1.23 = 2.46$ (mentally) £2.46
 $6 \times 21 = 126$ 126p or £1.26
The total is $2.46 + 1.26 = 3.72$ Answer: £3.72
- 4** Division $960 \div 8 = 120$
The pupil may recognise that $12 \times 8 = 96$ but would probably want to use a calculator.
- 5** Many pupils try to add the two numbers; however, they should do a subtraction.
 $2319 - 1250 = 1069$

Try some further examples from *Springboard 7* pages 350 to 352.

At the end, use the key questions to check that the pupil has reached the target and is confident.

Key questions

Find the sum of two numbers, for example, the sum of 234 and 621.
What operation should you use? (addition)

480 pupils are split into four equal groups.
How many pupils are in each group?
How did you work out the answer? (division)

Anne travels 14 512 miles in a year. Raj travels 27 863 miles in the same year. How many more miles does Raj travel than Anne?
How did you work out the answer? (subtraction)

Find the product of 23 and 54.
What does 'product' mean? (multiplication)

Word problems

For each question:

- decide which numbers are important;
- decide which calculation you need to do;
- decide how you will work out the answer;
- work out the answer;
- check that the answer is sensible.

- 1** Mike, who is 27 years old, has 342 model cars and 129 model planes.
How many models does he have altogether?
- 2** Nasima works for 42 days and is paid £63 a day.
How much is she paid altogether?
If she pays £423 in tax, work out how much money she has left after paying tax.
- 3** Apples cost 68p a kilogram. Pears cost £1.23 a kilogram.
Oranges are 21p each.
Kathy buys 2 kg of pears and 6 oranges.
How much does she pay altogether?
- 4** Ravi has to pack chocolate eggs into boxes.
Each box contains 8 eggs and costs £1.25.
How many boxes can Ravi fill if he has 960 eggs?
- 5** Neville travels 1250 miles in March and 2319 miles in April.
How many more miles does he travel in April compared with March?