Solving word problems

National Curriculum attainment target

- Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

Lesson objective

- Solve problems and reason mathematically

Previous related lessons

Unit 2, Week 1, Lesson 4; Unit 4, Week 2, Lesson 4

Prerequisites for learning

Pupils need to:

- recall multiplication and division facts for 2, 3, 4, 5, 8 and 10 multiplication tables

Vocabulary

operation, multiplied by, multiplication, divided by, division, addition, subtraction

Future related lesson

Unit 8, Week 1, Lesson 4

Success criteria

Pupils can:

- recognise the operation needed to answer a word problem
- write the calculation necessary to answer the problem
- write the correct answer to the problem

ℹ **It is important that children do not see word problems as purely about the operation they are studying at the time. Many children tend to look at the numbers in a word problem without looking at the context of the problem. This can lead to mistakes choosing the correct operation or working out the answer to the calculation.**

Encourage children to visualise the situation whilst they are reading instead of focusing on the numbers involved in the word problem. It is often useful to draw a picture to help with the visualisation of the problem.

Getting Started

- Choose an activity from Number – Multiplication and division.
- Choose an activity from *Fluency in Number Facts: Y3/Y4* – Multiplication and division.

> **Collins**
> Connect
> **Year 3, Unit 6, Week 1**

Teach

Resources

mini whiteboard, pen and eraser (per child)

1–4
- Display: Slides 1–4.
- Say: **Today we will be looking at some word problems. Some will involve multiplication and division and others will involve addition and subtraction. We have to think carefully about the problem to work out which operation is needed.**
- Display word problem 1: A chocolate bar is 8 cm long. How long are four chocolate bars placed end to end?
- Read the problem out loud. Ask the children to picture the situation in their mind, decide which operation is needed and find the correct calculation from the options given on the board.
- Ask children to share with their partner what image/s they have visualised, what operation they would use and which calculation they would use.
- Ask children to share their suggestions with the class.
- Ask: **How do you know that the operation required is multiplication?** (there are four chocolate bars and each is 8 cm long so four groups of eight are needed)
- You may wish to draw an image on the board to help children visualise the situation. Find the correct calculation and drag it to beside the problem.
- Invite some suggestions of how to work out the problem from various children. Write the answer to the calculation on the board: $8 \times 4 = 32$.
- Write the answer to the problem on the whiteboard, for example, The length of eight chocolate bars is 32 cm.
- Repeat for each word problem.

Individualised Learning

Refer to Activity 2 and 4 from the Learning activities on pages 242–243.

Pupil Book 3B – Page 19: Solving word problems

Progress Guide 3 – Extension, Year 3, Unit 6, Week 1, Lesson 4: Solving word problems

Plenary

- Write a calculation on the board using numbers from one of the known multiplication and division facts, that is, 2, 3, 4, 5, 8, 10 multiplication tables, for example, $6 \times 4 = \square$. Ask: **Who can make up a problem to match this calculation?**
- In pairs, children discuss their word problems.
- Ask pairs to share one of their word problems with the class. Discuss whether the word problem matches the calculation. Ask for another word problem from a different pair of children.
- Ask: **How would the word problem change if the calculation was changed to $6 + 4 = \square$?** (answers will vary depending on the word problem originally suggested)
- Repeat the process with different calculations.