Fraction problems

National Curriculum attainment target

• Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number

Lesson objective

• Solve fraction problems to calculate quantities including non-unit fractions

Previous related lesson

None

Prerequisites for learning

Pupils need to:

• understand unit fractions of amounts

• solve word problems

Vocabulary

word problem, divide, fraction, answer

Future related lesson

Unit 10, Week 2, Lesson 4

Success criteria

Pupils can:

• recognise the operation needed to answer a word problem

• write the calculation necessary to answer the problem
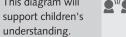
• write the correct answer to the problem

Getting Started

• Choose an activity from Number – Fractions.

Collins Connect

Year 4, Unit 6, Week 2

Teach

Draw a circle to represent Harry's total money. Divide it into sixths. Write £8 in each sixth. Shade four of the parts. This diagram will support children's understanding.

• Display: Slide 1. Read the problem together twice as a class.

• Ask: **What do we need to do first?** Share children's ideas. Establish that, to find a non-unit quantity first, the unit fraction needs to be found.

• Record it as a calculation on the board: £48 ÷ 6 = £8. $\frac{1}{6}$ of £48 is £8. Say: **We divide by six as the denominator is six.**

• Ask: **What do we need to do next?** Share children's ideas. Establish that, as one-sixth is £8, to find four-sixths, £8 is multiplied by four. Write £8 × 4 = £32. $\frac{4}{6}$ of £48 = £32 on the board.

• Say: **Now we know how much Harry needs to pay for his ticket. How much does he have left?**

• Display: Slide 2. Read the problem as a class.

• Ask: **How can we work this out? Share children's ideas.** Establish that the first step is to find one-tenth. Record the working out on the board.

• Say: **Now choose one of the sittings and find out how many children are in it.**

• Choose a child who has worked out the Foundation Stage sitting and ask them to talk through their working out. Other children who worked this out can contribute.

• Repeat for Key Stage 1 and 2.

Draw a rectangle to represent the school. Divide it into 10 sections. Label the appropriate number FS, KS1, KS2.

Individualised Learning

Refer to Activity 4 from the Learning activities on page 249.

Pupil Book 4B: – Page 23: Fraction problems

Progress Guide 4: – Extension: Year 4, Unit 6, Week 2, Lesson 4: How much water?

Plenary

- Display: Slide 3. Read the problem to the class.
- Ask: **How can you find out how much money was left?**
- Discuss children's suggestions. Ask children to start working out the problem. They can use their ideas or change to one of the suggestions that were shared with the class.
- Work through the problem as a class.

Overcoming Barriers

- Drawing a diagram is a good way to show how fractions relate to the problem. Children can then write the unit fraction in each section. This helps them to see how to work out the non-unit fraction.