Fractions and division

National Curriculum attainment targets

- Recognise, find and write fractions of a discrete set of objects: unit fractions
- Solve problems that include the above

Lesson objectives

- Recognise, find and write unit fractions of a set of objects
- Solve fraction problems and reason mathematically

Previous related lessons

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

Prerequisites for learning

Pupils need to:

- understand simple unit fractions
- understand division
- be confident with a division method

Vocabulary

half, quarter, third, fifth, sixth, divide, denominator

Future related lesson

Unit 10, Week 2, Lesson 1

Success criteria

Pupils can:

- use the denominator to know what to divide by
- write the division calculation
- know the answer to the division gives the unit fraction

Getting Started

- Choose an activity from Number – Fractions.

Collins Connect
Year 3, Unit 6, Week 2

Teach

Resources

mini whiteboard, pen and eraser (per child)

- Say: **Draw something on your whiteboard that shows a half.**
- Share some of the children's ideas. If possible, show a drawing that models half of a shape/object and one that shows half of a quantity.
- Ask: **What is the same about both of these drawings?** Establish that they both have divided something into two equal parts.
- Write $\frac{1}{2}$ on the board. Read the fraction together.
- Ask: **How do we know from the fraction that we need to divide into two equal parts?** Establish that as the denominator is 2, the whole needs to be divided into two equal parts.
- Say: **Finding half is the same as dividing by two.**
- Display: Slide 1. Count the cats together as a class. Write 8 on the board.
- Display: Slide 2. The paper has now been halved.
  Ask: **What operation can I write to show what has just happened to the paper?**
  Write after the 8: ÷ 2.
- Ask: **So what is half of eight?** Record the answer.
- Say: **Eight divided by 2 is 4. So half of 8 is 4.** Underneath the calculation write $\frac{1}{2}$ of 8 = 4.
- Display: Slide 3.
- Count the cats together.
- Say: **Watch what happens to the paper.** Display: Slide 4. **Say: Tell your partner and then write the division calculation.** Establish that the division is 24 ÷ 2 = 12.
- Say: **We can also write $\frac{1}{2}$ of 24 = 12.** Ensure all children have a method for dividing by two.
- Ask: **What is half of 28? Write the division calculation and work it out.**
- Display: Slide 5.
- Pointing to $\frac{1}{2}$ ask: **When we wanted to find half of a number we divided by two. What do you think we should divide by to find a quarter of a number?** Repeat for the other fractions, pointing to the relevant denominator as children answer.
- Say: **The denominator always tells us what to divide the whole by to find the fraction.**

- Display: Slide 6.
- Ask: **How many equal groups do we need for thirds? What is the division calculation to find a third of 15?** Record it on the board.
- Ask children to work it out on their whiteboards. Ensure all children have a division method they can use.
- Underneath write: $\frac{1}{3}$ of 15 = 5.
- Say: **If you understand how to find fractions of small numbers, you can use the same method to find fractions of higher numbers.**
- Ask: **What do we divide by to find a fifth of a number?**

Individualised Learning

Refer to Activity 1 from the Learning activities on page 252.

Pupil Book 3B – Page 20: Fractions and division

Progress Guide 3 – Support, Year 3, Unit 6, Week 2, Lesson 1: Finding quarters

Resources: 28 counters (per child)

Plenary

- Ask some children who worked on "Top tips for finding fractions of numbers" (Challenge 3, Pupil Book) to share them with the class.
- Ask: **Do you think these tips will help you with finding fractions?**
- Record the tips the class find most useful.
- Ask: **What do you divide by to find quarters? Sevenths? Tenths? Thirteenths?** Ask for whole-class responses.

Overcoming Barriers

- Children need to see the link between the denominator and the division calculation. However, they will only understand this if they have a secure understanding of fractions. Children who are not secure need to continue with practical resources.