GRADES 4–9

Fractions

MATHEMATICS PROGRESSION WORKBOOK



THIS BOOK BELONGS TO

Name _____

Class _____

School _____

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START HERE

How to use this book

Start with the **Diagnose** check to find your starting point. Grade 4 learners start with Concept 1. Grade 5 learners can stop after Concept 5, Grade 6 after Concept 6. Concepts 10 and 11 are for Grades 7–9.

Before you start

I know my times tables, I can find factors and common multiples, and I can read a number line. If not, ask for another example first.

In this book

1. Fractions of a whole
2. Understanding fractions
3. Equivalent fractions and simplifying
4. Improper fractions and mixed numbers
5. Comparing and ordering fractions
6. Adding and subtracting fractions
7. Calculating with mixed numbers
8. Multiplying fractions
9. Dividing fractions
10. Fractions, decimals and percentages
11. Negatives, powers, equations and multi-step problems

Every concept follows the same nine steps

1. **Diagnose** — Find your starting point
2. **Build** — Practise the skills you need first
3. **Teach** — Learn the idea, with a worked example
4. **Guide** — Try one with help
5. **Practise** — Work on your own
6. **Apply** — Use it in a real situation
7. **Assess** — Check yourself without looking back
8. **Remediate** — Find and fix a mistake
9. **Master** — Show you have mastered it

Tips

- Write your working in the book. Every step counts, not only the answer.
- Check your answers at the back only after you have tried. Each answer starts with the rule, then shows every step.
- Stuck? Read the worked example again, then try the next question.
- Parents and tutors: the **Tutor tip** on each concept gives a hands-on way to help.

STEP 1

Diagnose

Try these without help. Mark them with the answers at the back. The first question you get wrong is your starting point.

G4 A pizza is cut into 8 equal slices. Thabo eats 3 slices. What fraction did he eat?

WORKING

Fraction _____

1 What fraction of the bar is shaded?



WORKING

Fraction shaded _____

2 Simplify $\frac{6}{10}$.

WORKING

Answer _____

3 Write $\frac{7}{3}$ as a mixed number.

WORKING

Mixed number _____

CONCEPT 1 · GRADE 4

1 Fractions of a whole

Learning goal

I can name halves, thirds, quarters, fifths, sixths and eighths, and find a fraction of an amount.

3 Teach

A **fraction** shows equal parts of a whole. In $\frac{3}{4}$ the **denominator** 4 says the whole is cut into 4 equal parts. The **numerator** 3 says we take 3 of them. To find $\frac{1}{4}$ of 20, **divide** 20 by 4: 5. For $\frac{3}{4}$ of 20, take 3 of those parts: 3 × 5 = 15.

Worked example

Find $\frac{2}{3}$ of 12.

1. Divide by the denominator: 12 ÷ 3 = 4. So $\frac{1}{3}$ of 12 is 4.
2. Multiply by the numerator: 2 × 4 = 8.
3. $\frac{2}{3}$ of 12 = 8

Watch out

The parts must be equal. A shape cut into 4 unequal pieces does not show quarters.

Tutor tip

Let the learner fold paper strips into halves, quarters and eighths and label each part.

4 Guide

G4·1 A cake is cut into 4 equal pieces. What fraction is one piece?

WORKING

Fraction _____

5 Practise

Work on your own. Show your method.

G4·2 Find $\frac{1}{2}$ of 18.

WORKING

Answer _____

G4·3 Find $\frac{1}{4}$ of 24.

WORKING

Answer _____

G4·4 Find $\frac{3}{4}$ of 24.

WORKING

Answer _____

G4·5 Which fraction is bigger? Circle one.

Circle one

(A) $\frac{1}{3}$ (B) $\frac{1}{5}$

G4·6 How many eighths make one whole?

WORKING

Eighths _____

G4·7 Find $\frac{1}{5}$ of 35.

WORKING

Answer _____

G4·8 Calculate $\frac{2}{6} + \frac{3}{6}$.

WORKING

Answer _____

6 Apply

G4·9 There are 30 learners in a class. $\frac{1}{3}$ of them walk to school. How many walk?

WORKING

Learners _____

7 Assess

Try this without looking back.

G4·10 Find $\frac{2}{3}$ of 15.

WORKING

Answer _____

8 Remediate

Find the mistake, explain it and fix it.

G4·11 Ayesha says $\frac{1}{4}$ of 20 is 80, because 20 × 4 = 80. Explain her mistake and give the correct answer.

WORKING

Her mistake

Correct answer _____

9 Master

G4·12 Mom has R60. She gives $\frac{1}{2}$ to Sipho and $\frac{1}{4}$ to Lerato. How much money does she have left?

WORKING

Rand _____

How do I feel about this concept? ☐ Need support ☐ Practising ☐ Independent