Mathematics
Grade 8

TOPIC:
Decimal Fractions

Section A: Ordering, Comparing and Place Value

1. Write the place value of the underlined digit:

a) 34,5<u>7</u>8

b) 0,42<u>9</u>

c) 145,<u>3</u>62

2. Arrange the following decimal fractions in ascending order (smallest to largest):

5,407 ; 5,74, ; 5,047 ; 5,7 ; 5,4

3. Insert <, > or = to make the statements true:

a) 3,456 _____ 3,465

b) 0,8 _____ 0,800

c) 12,09 _____ 12,1

Section B: Rounding Off

4. Round off to 2 decimal places:

a) 7,8349

b) 15,675

c) 0,9951

5. Round off to 1 decimal place:

a) 23,456

b) 8,082

Section C: Calculations with Decimal Fractions

6. Calculate the following (show all working):

a) 14,653 + 8,347 + 2,8

b) 25,6 – 13,847

c) 4,25 × 3,6

d) 8,64 ÷ 4

7. Extended multiplication and division:

a) 5,8 × 2,4

b) 12,6 ÷ 0,3

c) 7,65 ÷ 1,5

8. Calculate:

a) $(2,5)^2$

b) $(0,4)^3$

c) $\sqrt{0,64}$

d) $\sqrt[3]{0,027}$

Section D: Estimation and Calculation Techniques

9. Before calculating, estimate the number of decimal places in the answer:

a) 3,45 × 2,6 (Estimate: _____ decimal places)

Now calculate

b) 12,8 ÷ 0,4 (Estimate: _____ decimal places)

Now calculate

10. Use rounding to estimate the answer, then calculate:

Estimate: 48,7 × 3,2 ≈ _____ × _____ = _____

Actual calculation

Section E: Problem Solving

11. A school is buying fabric for costumes. Each costume requires 2,75 metres of fabric. If they need 18 costumes, how many metres of fabric should they purchase?

12. A water tank contains 125,5 litres of water. If 3,75 litres is used each day, how many full days will the water last?

13. Maria bought 3,5 kg of apples at R18,60 per kilogram and 2,25 kg of oranges at R12,80 per kilogram. How much did she spend in total?

14. A rectangle has a length of 8,4 cm and a width of 5,5 cm. Calculate:

a) The perimeter of the rectangle

b) The area of the rectangle

Section F: Equivalent Forms

15. Complete the table:

Common Fraction	Decimal Fraction	Percentage
$\frac{3}{4}$		
	0,6	
		45%
$\frac{7}{20}$		
	0,125	

16. Convert the following:

    a) 0,85 to a common fraction in simplest form

    b) $\frac{3}{8}$ to a decimal fraction

    c) 0,36 to a percentage

    d) 72% to a decimal fraction

17. Which is larger: $\frac{7}{10}$ or 0,68? Show your reasoning.

Section G: Challenge Problems

18. Calculate: $(3.2)^2 + \sqrt{2.25} - (0,5)^3$

19. A car travels 156,8 km using 11,2 litres of petrol. How many kilometres can it travel per litre? Round your answer to 2 decimal places.

20. If 2,5 kg of sweets costs R87,50, what is the cost of 3,75 kg of the same sweets?

CAPS CLARIFICATION

Ordering and comparing decimal fractions

- **Revise**:
  - Ordering, comparing and place value of decimal fractions to at least 3 decimal places
  - Rounding off decimal fractions to at least 2 decimal place

Calculations with decimal fractions

- **Revise:**
  - addition, subtraction and multiplication of decimal fractions to at least 3 decimal places
  - division of decimal fractions by whole numbers
- Extend multiplication to 'multiplication by decimal fractions' not limited to one decimal place
- Extend division to 'division of decimal fractions by decimal fractions'
- Calculate the squares, cubes, square roots and cube roots of decimal fractions

Calculation techniques

- Use knowledge of place value to estimate the number of decimal places in the result before performing calculations
- Use rounding off and a calculator to check results where appropriate

Solving problems

- Solve problems in context involving decimal fractions

Equivalent forms

- **Revise** equivalent forms between:
  - common fraction and decimal fraction forms of the same number
  - common fraction, decimal fraction and percentage forms of the same number