MATHS FIELD GUIDE · GRADE 4

Decimals extend place value

OPENING PROBLEM

Compare 4.06 and 4.60.

Ones	Tenths	Hundredths
4	0	6
4	6	0

02 Use the place, including the zero
03 Rules and worked cases
04 Track two long jumps
05 Keep the decimal point tied to the unit
06 Check your reasoning

ILLUSTRATED PROBLEM SHEET

Use the place, including the zero

A digit one place to the left is worth ten times as much.

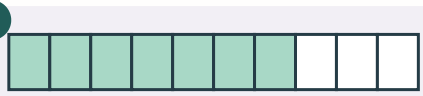
1

Ones	Tenths	Hundredths
4	0	6
4	6	0

Compare 4.06 and 4.60.

The ones match. Six tenths is more than zero tenths, so 4.60 is larger.

2



How many hundredths equal seven tenths?

Seventy. Splitting each tenth into ten parts makes 0.70.

3



What is halfway between 0.4 and 0.5?

0.45. From 0.40 to 0.50 there are ten equal steps of 0.01. Five steps from either end reach 0.45.

4

3.08 + 0.7
↓
3.08 + 0.70
↓
3.78

Why put the added seven under tenths?

It represents seven tenths. The eight hundredths stay unchanged.

0.4 and 0.40
same point.

0.04 and 0.4
tenfold difference.

CHAPTER PROBLEM

Why does 0.6 equal 0.60?

Six tenths can be regrouped as sixty hundredths.

MATHS REFERENCE · GRADE 4

Decimals extend place value

A decimal is a way to write numbers using place value beyond whole units. One tenth is one of ten equal parts of one. One hundredth is one of one hundred equal parts.

The decimal point separates whole units from fractional place-value units.

Four cases to recognise

Situation	What to do and why
0.8 and 0.80	Both represent eighty hundredths.
Compare 3.09 and 3.1	Write 3.10. Ten hundredths is greater than nine.
Halfway between 1.2 and 1.3	The gap is ten hundredths. Five more hundredths gives 1.25.
Change 2.98 by +0.05	Add five hundredths to 98 hundredths. One whole and three hundredths yield 3.03.

Read the model

Build the idea

Split one whole into ten equal strips. One strip is 0.1. Split each strip into ten equal smaller parts. One small part is 0.01.

A hundredth grid has one hundred equal cells. Thirty-seven shaded cells represent 37/100, written 0.37.



Why it works

Each unit to the right is one tenth as large as the previous unit. Ten hundredths make one tenth; ten tenths make one.

This continues the same grouping structure used for ones, tens and hundreds. The structure has not changed at the decimal point.

tenth One of ten equal parts of one.
hundredth One of one hundred equal parts of one.
decimal point The separator between whole and fractional places.



3 fifths

How much is shaded?

Three fifths. The five describes the pieces in the whole.

WORKED INVESTIGATION

Track two long jumps

Asha jumps 2.45 m and Ravi jumps 2.5 m. Write 2.5 m as 2.50 m to compare equal place values.

Look at this part	What it tells you
2.45 m	245 cm
2.50 m	250 cm
Difference	5 cm

Work it through

On a strip between 2.4 and 2.5, divide the distance into ten equal parts. The fifth small mark after 2.4 is 2.45.

Catch the mistake

Treating 45 as larger than 5 ignores place value. Compare tenths first: four tenths is less than five tenths here.

Compare the cases

Follow an example

0.37 has three tenths and seven hundredths. Three tenths equal thirty hundredths, giving thirty-seven hundredths altogether.

0.4 has forty hundredths, so it is greater than 0.37. Compare amounts in matching units.

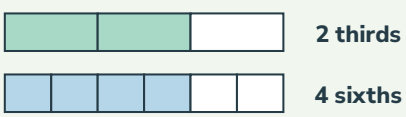
What changes? What stays true?

0.4 and 0.40 have equal value: four tenths equals forty hundredths. A final zero does not add an extra amount.

A longer decimal is not automatically larger. Identify each digit's place and compare from the largest place first.

Change one condition

A third jump measures 2.405 m. It passes 2.4 m but falls short of 2.45 m because 405 thousandths is less than 450.



Which strip has more shaded?

They cover the same length. Each third splits into two sixths.

ILLUSTRATED PROBLEM SHEET

Keep the decimal point tied to the unit

A rupee has one hundred paise. Estimate the size before calculating.

1

₹4.50 + ₹0.75
↓
450p + 75p
↓
₹5.25

Where does the extra rupee come from?

525 paise contains five complete hundreds and 25 paise.

2

Length	Cost
1 m	₹12
0.1 m	₹1.20
0.4 m	₹4.80

Why does the shorter piece cost less?

At the same rate four tenths of a metre costs four tenths of ₹12.

3

₹8.40 ÷ 7
↓
840p ÷ 7
↓
₹1.20

How can you check the share?

Seven shares of 120 paise give 840 paise.

4

₹2.50 × 0.6
↓
250p × 6/10
↓
₹1.50

Why does multiplication give a smaller amount?

The factor is six tenths. The product is six tenths of ₹2.50.

₹0.06
six paise.

₹0.60
sixty paise.

CHAPTER PROBLEM

Which is larger, 0.7 or 0.65? Compare them in hundredths.

0.7 is 70 hundredths. Since 70 > 65, 0.7 is larger.

QUESTION BANK · FOLD OR COVER THE RIGHT COLUMN

Check your reasoning

Try the problem	Solution and reasoning
01 What is 0.01 less than 2.00?	1.99. Exchange one whole for ten tenths and a tenth for ten hundredths.
02 ₹10 is shared among four children. Can every share be paid exactly in paise?	Yes. 1000 paise divided by four gives 250 paise each.
03 Which is closer to 3 m, 2.90 m or 2.95 m? Give both gaps.	The gaps are 0.10 m and 0.05 m. The second jump is closer.
04 What decimal lies halfway between 0.6 and 0.7?	The gap is ten hundredths. Five hundredths past 0.60 is 0.65.
05 Place 4.04, 4.4 and 4.14 in order.	4.04 < 4.14 < 4.40 after aligning the hundredths.



How far apart are the marks?

Two quarter-steps, or one half.

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