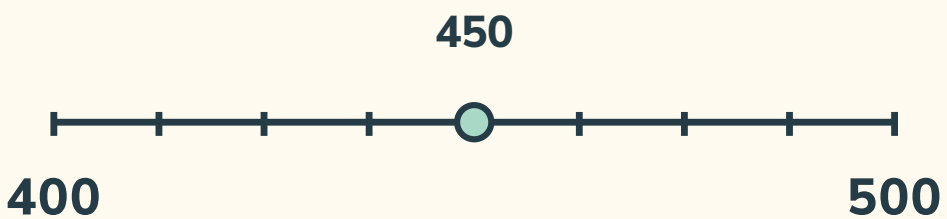
MATHS FIELD GUIDE · GRADE 3

Larger numbers and equal intervals

OPENING PROBLEM

What number is halfway from 400 to 500?



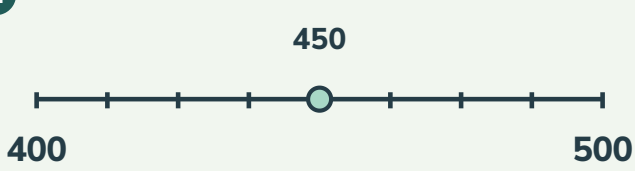
02 Zoom in on one interval
03 Rules and worked cases
04 The trail markers
05 Read a number path in either direction
06 Check your reasoning

ILLUSTRATED PROBLEM SHEET

Zoom in on one interval

Changing the size of an interval changes the value of a step between neighbouring marks.

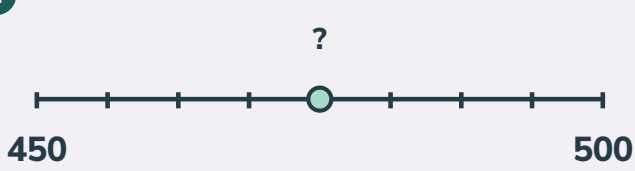
1



What number is halfway from 400 to 500?

The gap is 100. Half of it is 50, giving 450.

2



Now zoom in on 450 to 500. What is halfway?

Half the smaller gap is 25. Add it to 450 to get 475.

3

Step size	Start	After 3 steps
10	240	270
100	240	540

Why do three steps land on different numbers?

The value per step changes. Count the jumps and the value of each.

4

4 thousands
↓
0 hundreds, 3 tens, 6 ones
↓
4036

Why keep the zero?

It holds the hundreds place. The digit 3 represents thirty.

Halfway from 600 to 700
650.

Halfway from 650 to 700
675.

CHAPTER PROBLEM

A number line from 0 to 100 has five equal intervals. What does each interval represent?

Twenty, because five equal groups of twenty make one hundred.

MATHS REFERENCE · GRADE 3

Larger numbers and equal intervals

A larger number still uses the same place-value structure. Ten hundreds make one thousand. Each place represents a unit ten times as large as the place to its right.

A number line orders numbers by their positions. Equal numerical changes must be represented by equal distances.

Four cases to recognise

Situation	What to do and why
100 to 160 in three equal gaps	Each gap is 60 ÷ 3 = 20.
A mark two gaps beyond 100 on that line	Add 2 × 20 to reach 140.
Find 135 on a line marked in tens	It falls halfway between 130 and 140.
Five ticks between end marks, including both ends	Count the spaces: five ticks make four equal intervals.

Read the model

Build the idea

Build 2,406 as two thousands, four hundreds, zero tens and six ones. Write 2,000 + 400 + 6.

On a line from 2,000 to 3,000, mark equal hundred intervals. Find 2,400; 2,406 is six ones further along.

Place value chart



Why it works

The grouping structure lets us count larger quantities without drawing every one. Each thousand stands for a known amount.

A scale tells us what one interval represents. Counting marks without checking the scale can give the wrong value.

thousand Ten hundreds.
scale The numerical value represented by an interval.
expanded form A number written as its place-value parts.



2 tens



7 ones

What does the 2 in 27 count?

Two tens, worth twenty. Seven loose ones make twenty-seven.

WORKED INVESTIGATION

The trail markers

A trail has markers at 120 m and 160 m with four equal intervals between them. Each interval covers 40 ÷ 4 = 10 m.

Look at this part	What it tells you
One interval past 120	130 m
Two intervals	140 m
Three intervals	150 m

Work it through

On a second trail the endpoints are the same but there are eight equal intervals. Each new step covers only 5 m.

Catch the mistake

Five drawn tick marks make four gaps. Dividing 40 by five would put the last mark at the wrong distance.

Compare the cases

Follow an example

For a line from 100 to 200 divided into ten equal intervals, each interval is ten. The third interval ends at 130.

If the same span has five equal intervals, each is twenty. Its third interval ends at 160.

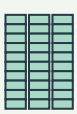
What changes? What stays true?

A zero place means there are no extra units of that size. It does not make the other places disappear.

When comparing numbers, start with the largest place. If that place matches, compare the next one.

Change one condition

Halfway is 140 m on either trail. Changing the scale changes the number of marks you pass.



3 tens 0 ones

Why does 30 need a zero?

There are three tens and no loose ones.

ILLUSTRATED PROBLEM SHEET

Read a number path in either direction

One step to the right adds one. A jump of ten changes the tens count.

1

27 28 ? 30

Which number comes just before thirty?

Twenty-nine. One more makes three whole tens.

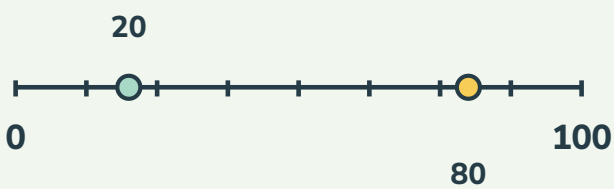
2

52 62 ? 82

The jumps are equal. Fill the gap.

Each jump adds ten. The missing number is 72.

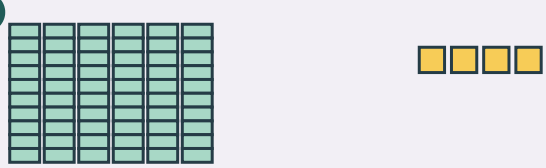
3



Which marked number lies nearer to one hundred?

Eighty. It needs twenty more, while twenty needs eighty more.

4



What numbers come one before and one after this picture?

Six tens and four ones is 64. Its neighbours are 63 and 65.

Ten before 80
70.

One before 80
79.

CHAPTER PROBLEM

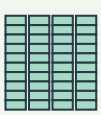
On a number line, 300 to 400 is split into five equal jumps. Where does the third jump land?

Each jump is 100 ÷ 5 = 20. Three jumps from 300 reach 360.

QUESTION BANK · FOLD OR COVER THE RIGHT COLUMN

Check your reasoning

Try the problem	Solution and reasoning
01 Is 498 nearer to 490 or 500?	It is 8 away from 490 and only 2 away from 500.
02 Move ten places back from 71. What stays the same?	You reach 61. The one in the ones place stays.
03 Four equal intervals run from 200 to 280. What does the third mark after 200 represent?	Each interval is 80 ÷ 4 = 20. Three intervals add 60, so the mark represents 260.
04 A number line goes from 30 to 90 in six equal gaps. Where is the fourth step after 30?	Each gap is ten. Four steps land at 70.
05 A point is halfway between 450 and 500. What value?	The gap is 50; half is 25. Add to 450 to get 475.



4 tens



3 ones

Which is larger, 43 or 34?

Four tens beat three tens before we compare the ones.

BANANALEARN LEARNING LIBRARY

Where will your maths take you next?

GRADE 3 MATHS

Choose your next problem.

Explore more illustrated guides and practise a related topic.

Browse Grade 3 guides →

Keep exploring

GRADE 3 · TOPIC GUIDE

Addition and subtraction are connected

Open guide →

GRADE 3 · TOPIC GUIDE

Division, equal groups and remainders

Open guide →

Visit bananalearn.com →