3.3.21
WALT Recognise Tenths on a Number Line

F
R
PS

Vocabulary

place value

place value grid

place value holder

number line

less than

more than

one

whole numbers

fractional numbers

separated

decimal point

tenths

fraction

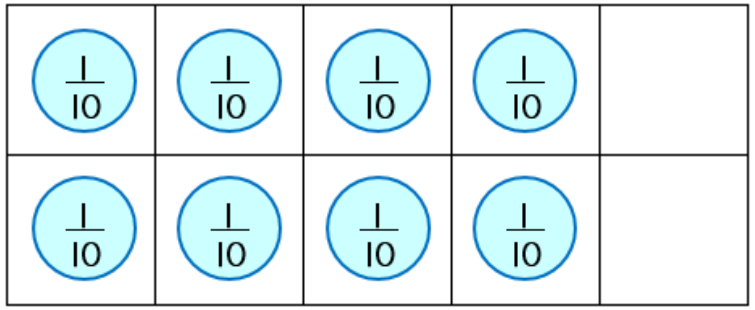
decimals

equivalent

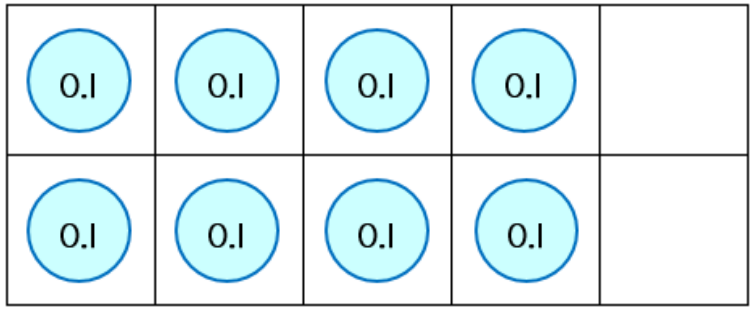
diagram

Tenths as Fractions and Decimals

What number is being shown in these two diagrams? Can you give your answer in two different ways: as a **fraction** and as a **decimal**?



$^{8}/_{10} = 0.8$

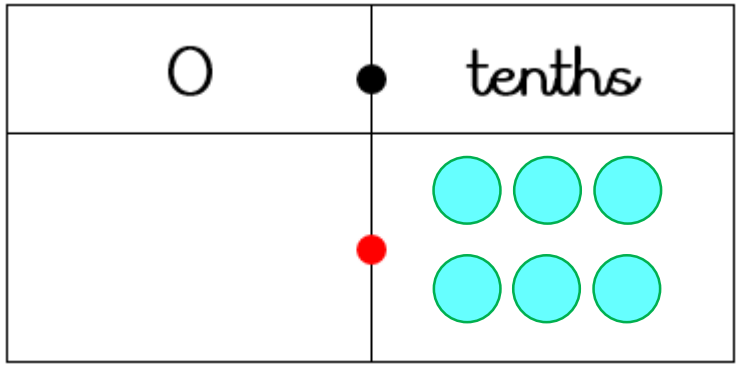


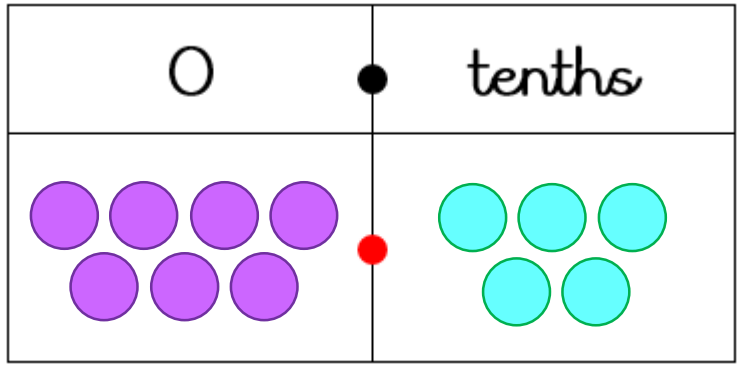
What is used to separate the whole number (ONES) from the fractional number (tenths)? the decimal point

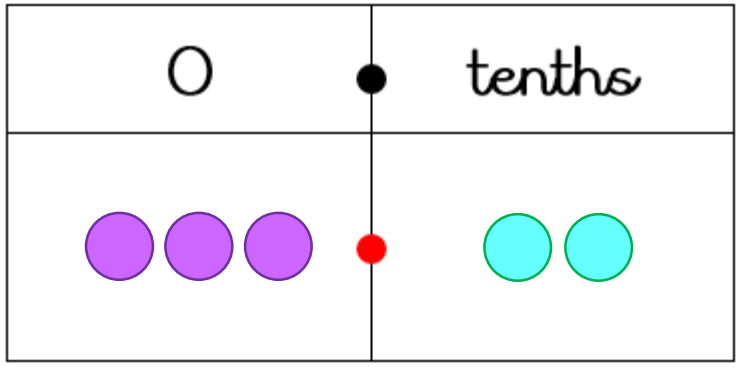
Why is there a zero when this number is written as a decimal?
It's a place value holder, to show that the ONES column is empty and to help people notice the decimal point in the number.

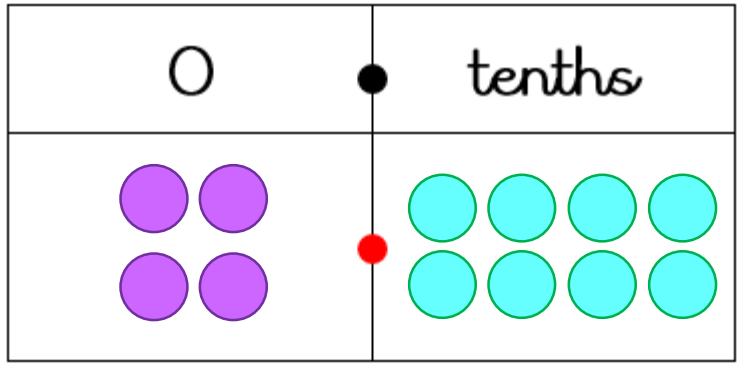
Showing Tenths on a Place Value Grid

Decimals can also be shown on a place value grid. Which **decimals** do these place value grids show?



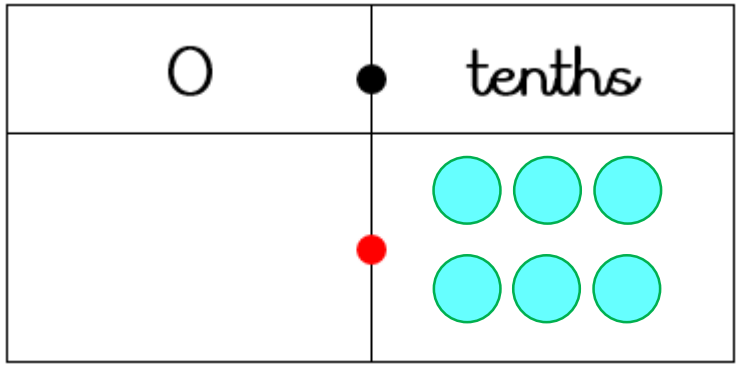




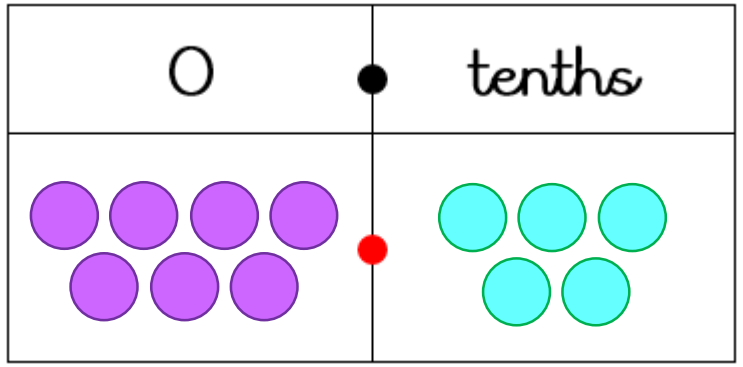


Showing Tenths on a Place Value Grid

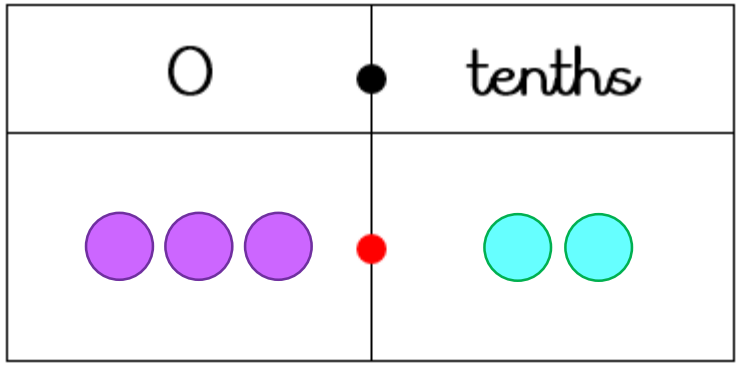
Decimals can also be shown on a place value grid. Which **decimals** do these place value grids show?



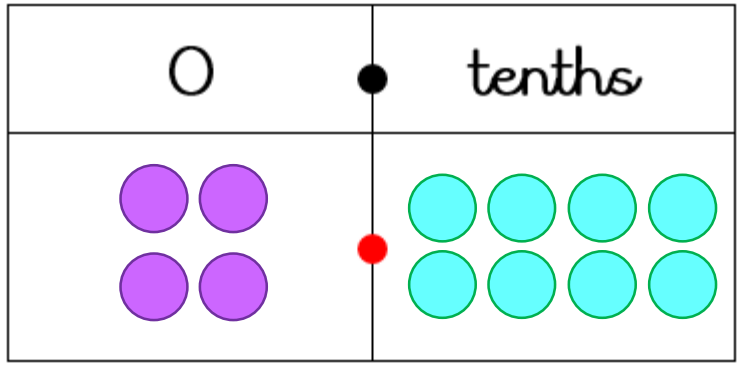
0.6



7.5



3.2



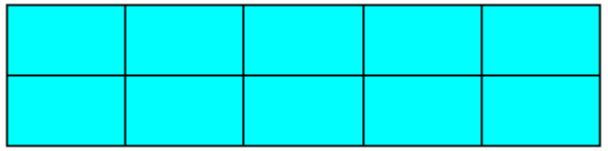
4.8

Counting Up in Tenths as Fractions

Last week, we looked at counting up in tenths as fractions:

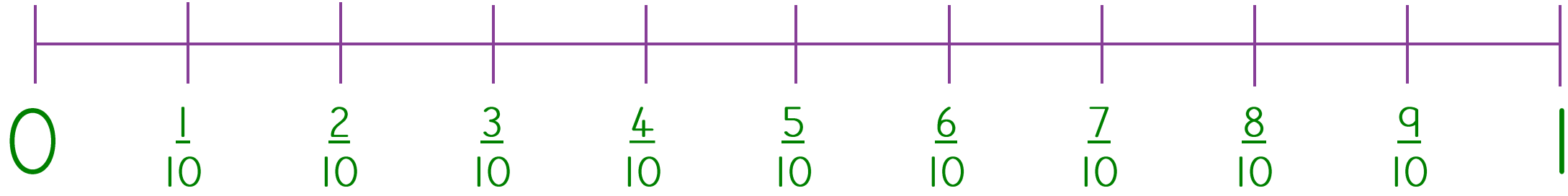
0 $\frac{1}{10}$ $\frac{2}{10}$ $\frac{3}{10}$ $\frac{4}{10}$ $\frac{5}{10}$ $\frac{6}{10}$ $\frac{7}{10}$ $\frac{8}{10}$ $\frac{9}{10}$ $\frac{10}{10}$

$\frac{11}{10}$ $\frac{12}{10}$ etc.



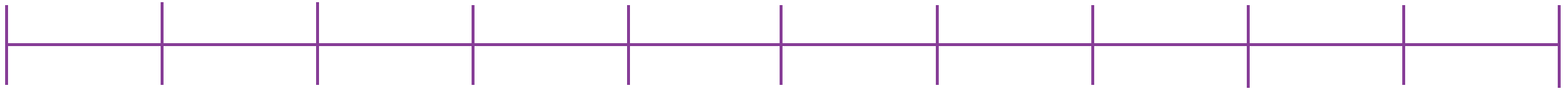
How could you say $^{10}/_{10}$ in a different way? $\frac{10}{10} = 1$ (whole)

Counting up in fractions can also be shown on a number line:



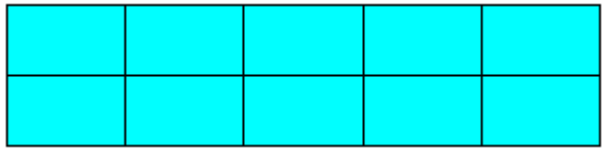
Counting Up in Tenths as Decimals

You can also count up in tenths using **decimals**. This can be shown on a number line, like this:



0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

What comes after 0.9? Look at this diagram to help you.



Why does 1 come after 0.9?

0.9 = $^{9}/_{10}$ $^{10}/_{10}$ comes after $^{9}/_{10}$ 1 whole is equivalent to $^{10}/_{10}$

Counting Up in Tenths as Decimals

You can count up in tenths from other whole numbers too. What would come after:

1 1.1 1.2 1.3 1.4 etc.

2 2.1 2.2 2.3 2.4 etc.

7 7.1 7.2 7.3 7.4 etc.

If 1 comes after 0.9, what number would comes after 1.9? 1.9 2

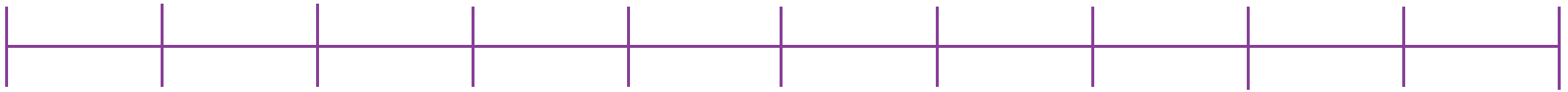
Why does 2 come after 1.9? $^{10}/_{10}$ comes after $^{9}/_{10}$ and $^{10}/_{10}$ is equal to 1 whole.

The ONES column gets 1 bigger.

What number would be after: 2.9? 3 7.9? 8

Counting Up in Tenths as Decimals

Sometimes, you might count up in groups of tenths, such as 2 tenths at a time:



1 1.2 1.4 1.6 1.8 2 2.2 2.4 2.6 2.8 3

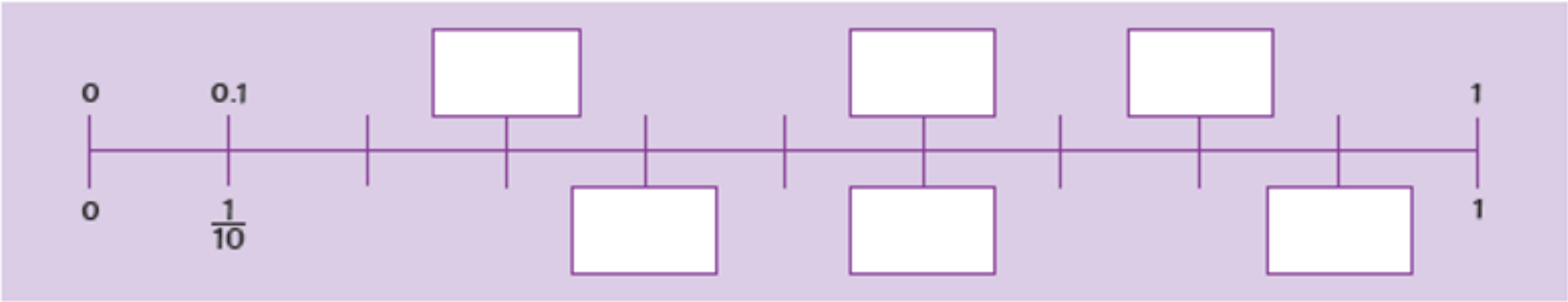
Remember, when you get to 10 tenths, make the ONES column 1 bigger.

You might count up in other groups of tenths too, such as 3 tenths at a time:

2 2.3 2.6 2.9 3.2 3.5 etc.

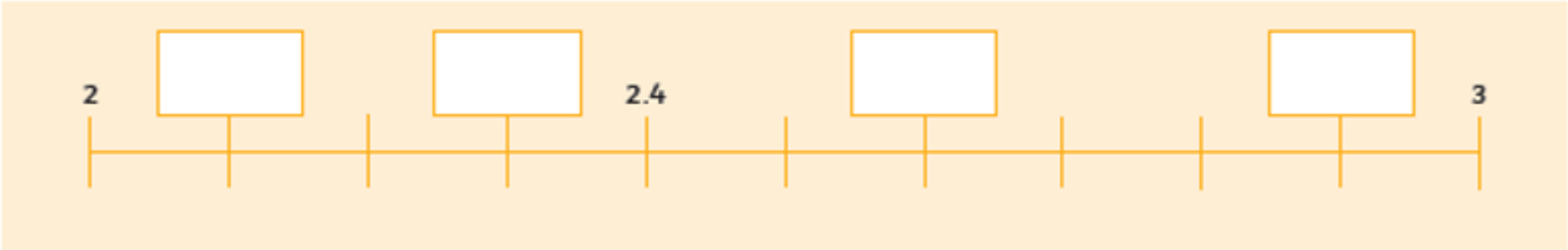
Fluency

1. Complete the number line by filling in the empty boxes. Write **decimals** in the boxes above the number line and **fractions** in the boxes underneath the number line.

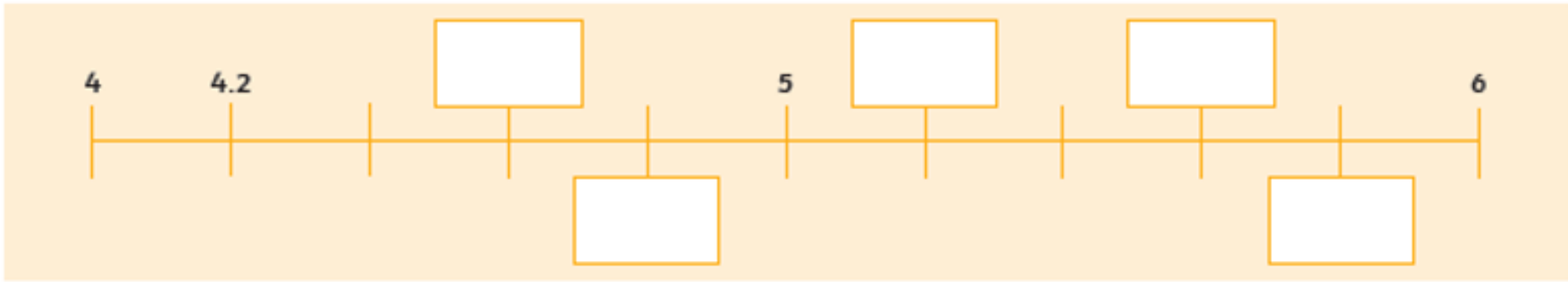


2. Write the missing decimals in the empty boxes to complete the number lines.

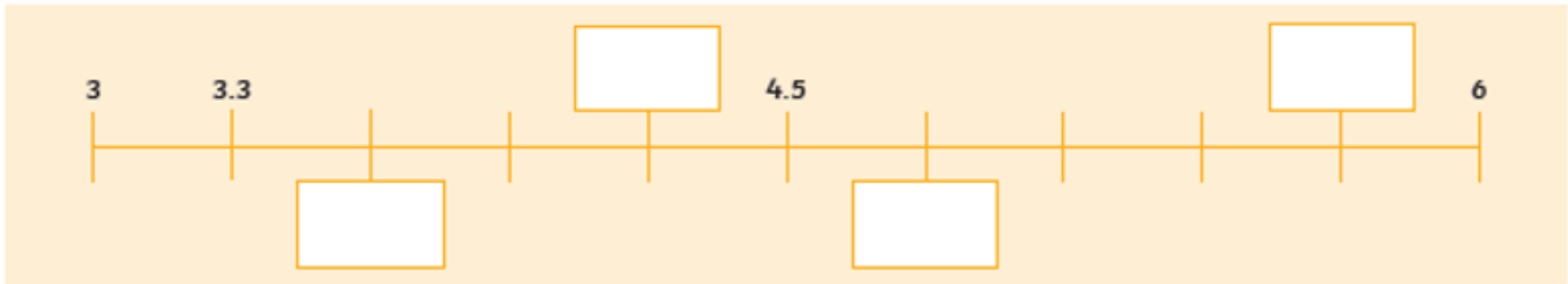
a)



b)

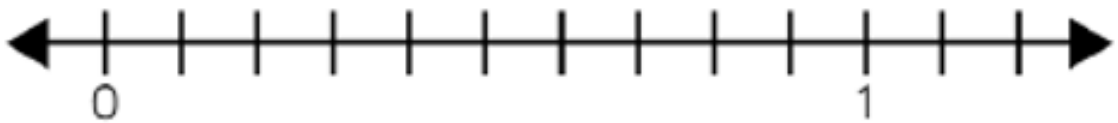


c)



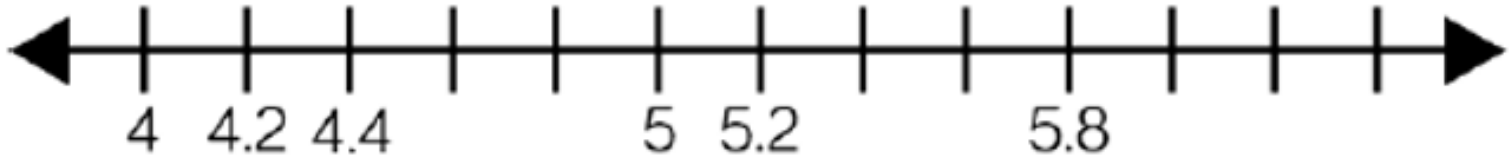
3. Place these decimals on the number line.

0.5	0.9	1.1

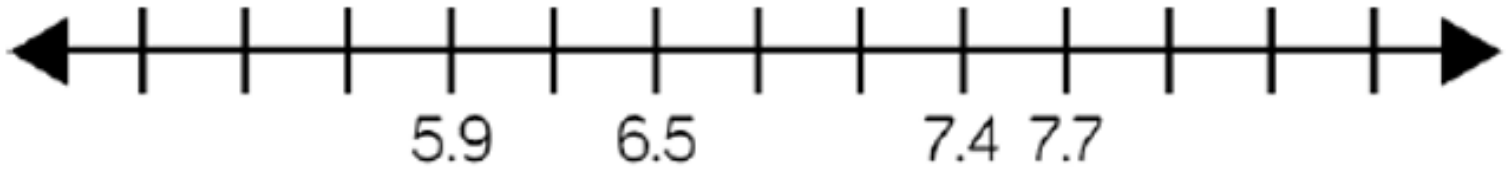


4. Complete the number lines.

a)



b)



5. The number line shows 1 metre. How long is the piece of ribbon?

Write your answer as a decimal.

The piece of ribbon is _____ metres long.

Reasoning 1

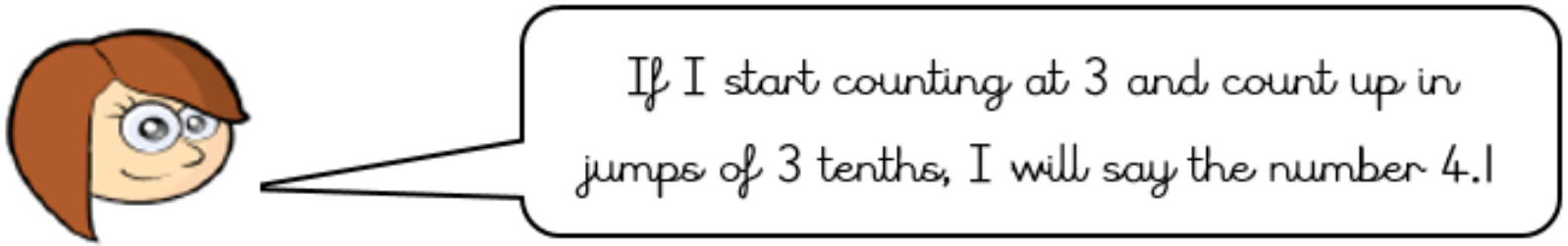
Eva has filled in a number line that starts at 2.1 and counts up in tenths.

Is Eva's number line correct? Explain your reasoning.

If Eva has made any mistakes, fill in this number line correctly.

Reasoning 2

Rosie is practising counting up in jumps of tenths.



Draw jumps on this number line to help you explain your reasoning.

Problem Solving 1

Which of these number lines will each number fit on? Write **A**, **B**, **C** or **none**.

3.1 _____

2.4 _____

2.7 _____

1.9 _____

2.1 _____

2.6 _____

A

B

C

Problem Solving 2

Draw arrows on each number line to estimate where the numbers should be placed.

a) 1.5

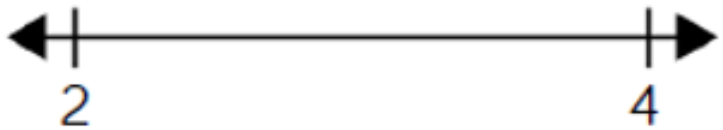
b) 2.9

c) 5.2 and 8.9

Problem Solving 3

Place these decimals on the number line.

2.7	2.3	1.9	2.5	2.9	3.2

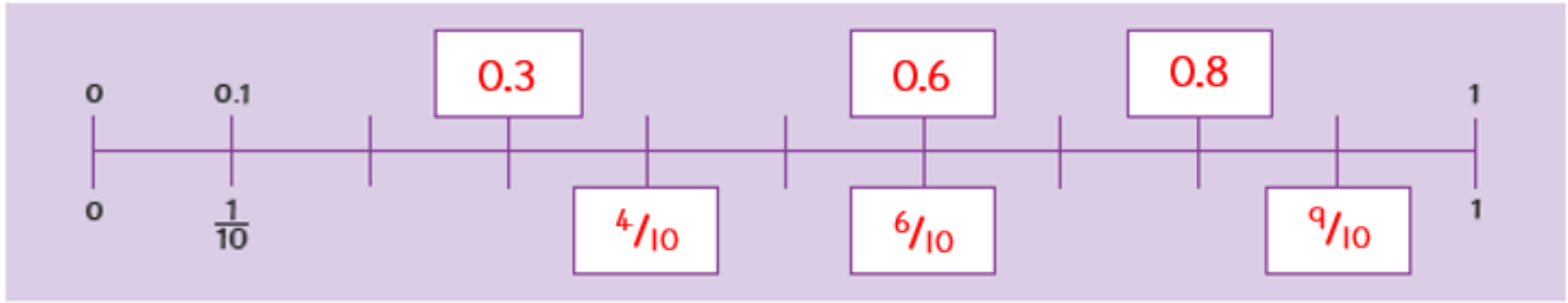


Write the order that you have placed the numbers in?

Fluency

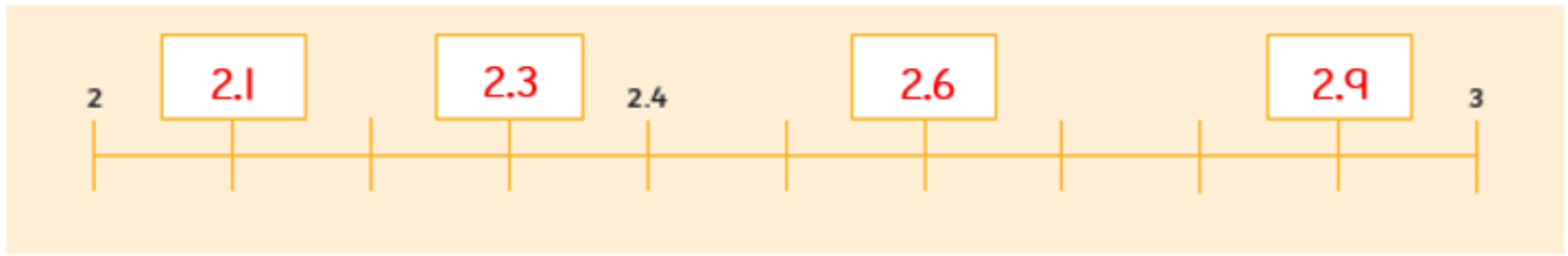
Answers

1.

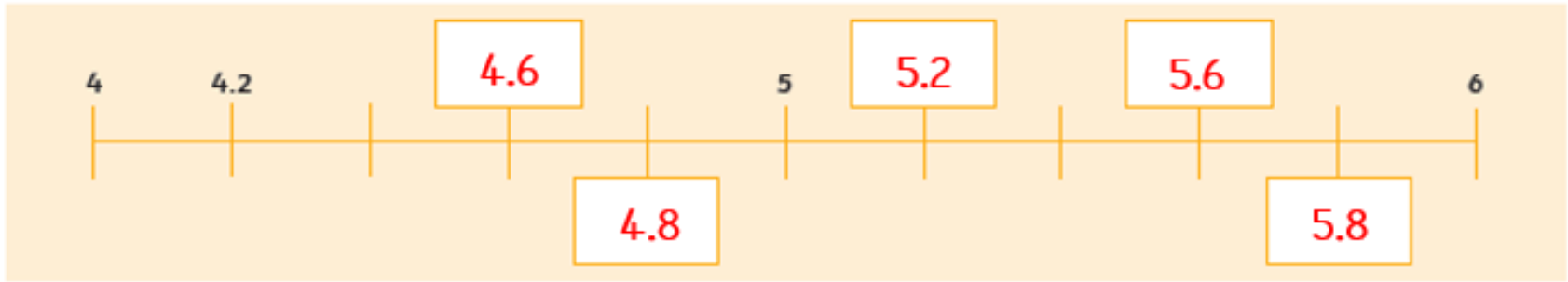


2.

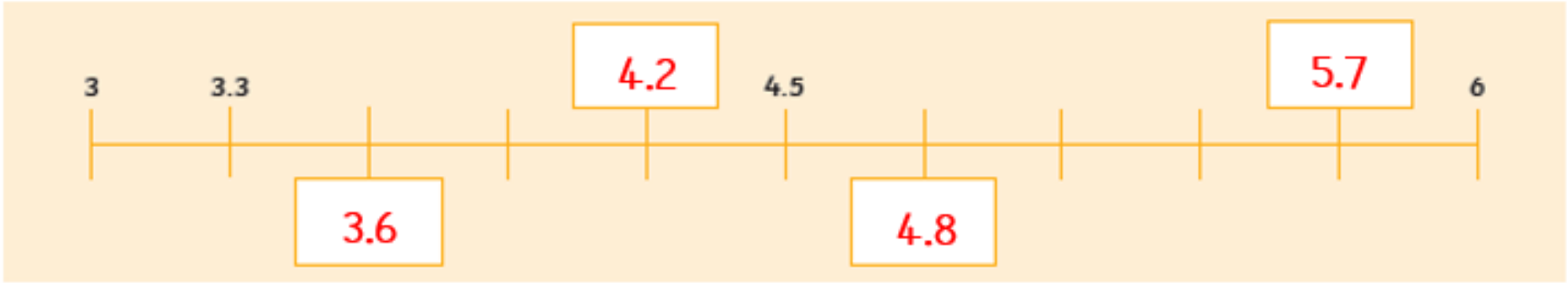
a)



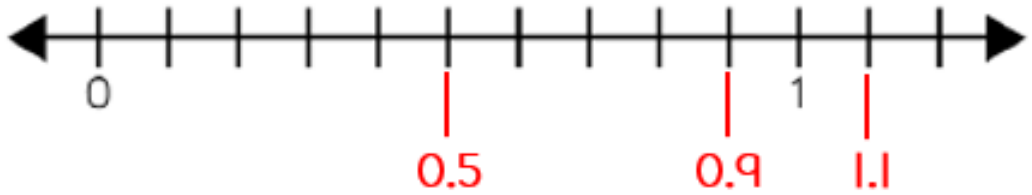
b)



c)


3
3.3
4.2
4.5
5.7
6
3.6
4.8

3.


0
1
0.5
0.9
1.1

4.

a)


4 4.2 4.4 4.6 4.8 5 5.2 5.4 5.6 5.8 6 6.2 6.4

b)


5 5.3 5.6 5.9 6.2 6.5 6.8 7.1 7.4 7.7 8 8.3 8.6

5.

The piece of ribbon is 0.8 metres long.

Reasoning 1

Eva is correct until 2.9, but then her counting is wrong for 2.10 and 2.11

Eva has forgotten that 10 tenths equals 1 whole. When she adds a tenth to 2.9, she will have 2 ones and 10 tenths. Eva can exchange her 10 tenths for another one so she will have 3 ones. This is written as 3 or 3.0 and the number after 3 will be 3.1

This is show in this correct number line.

Reasoning 2

Rosie is not correct. Here are Rosie's jumps shown on the number line:

Rosie does not jump to 4.1

Problem Solving 1

3.1 C

2.4 B

2.7 none

1.9 A

2.1 A

2.6 B

Problem Solving 2

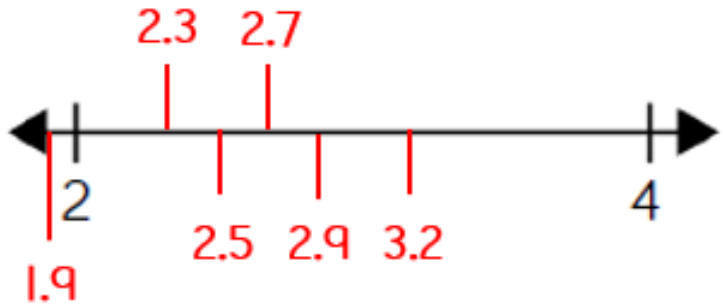
Draw arrows on each number line to estimate where the numbers should be placed.

a) 1.5

b) 2.9

c) 5.2 and 8.9

Problem Solving 3



The correct order for the numbers is:

1.9 2.3 2.5 2.7 2.9 3.2