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Maths

Entry Level 3, Book 6

GLH 3

Decimals and Money

Name	
Number	
Location	
Date Issued	

E3

Maths – Entry Level 3
Welcome to Book 6

Introduction

This booklet is part of your learning programme.

Remember to read carefully and try your best. Don't worry if you get stuck, make a note on the booklet and move on to the next task. Try coming back to it later, see if you can work it out then.

If you are still stuck, remember to make a note at the end of the booklet.

Throughout the booklet, you will see that some words have been printed **blue and bold**. You will find more detailed explanations of each of these words in the 'Glossary' at the back of the booklet.

Glossary is a list of often difficult or specialised words with their definitions, placed at the back of a book. You may also know this as a word bank.

By working through this booklet, you will become confident using the rules of decimals as well as using the correct notations when handling money. You will need to be competent with the four rules of number (+, -, x and ÷) and place value.

What Do the Symbols in this Booklet Mean?

Where you see this symbol, there is a skills practice or activity for you to complete.

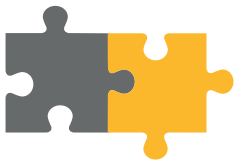
Information, explanations and case studies are shown with this icon.

This shows you there is a glossary or word bank with the meaning and correct spelling of key words.

This icon shows where to write comments for your tutor to read.

This symbol lets you know there are some key points to remember.

The Big Picture



You are studying Entry Level 3 Maths, which is taught over 55 Guided Learning Hours (GLH).

The programme covers the units listed below. The unit that you're working on today is ticked.

	Booklet	GLH	
1	Place Value		
2	Addition and Subtraction		
3	Multiplication		
4	Division		
5	Fractions		
6	**Decimals & Money**	**3**	✓
7	Rounding		
8	Time		
9	Shape & Space		
10	Measure		
11	Handling Data		
12	Recap and Summary		

Outcomes

These are the outcomes you can achieve by completing the learning activities in this booklet:

1. **Read, write and use decimals up to two decimal places.**
2. **Recognise and continue sequences that involve decimals.**
3. **Calculate with money.**

Recap

A **recap** is an effective way of helping you to remember and apply what you have learnt. If this is your first booklet, it may help you to think about what you know already about this subject. Can you answer the following questions?

What was the last booklet you completed?

Can you remember what you learnt about?

Can you remember three key points from the booklet?

1

2

3

Recap – Place Value

This is a useful reminder for you when working with decimals.

- **Place value** is the value of each digit (number) in a number.
- **10** is made up of 1 ten and 0 ones.
- **378** is made up of 3 hundreds, 7 tens and 8 ones.

H	T	O
	1	0
3	7	8

Have a look at this example:

H	T	O
		2
	2	2
2	2	2

The value of this digit is two (2 lots of 1)

The value of this digit is twenty (2 lots of 10)

The value of this digit is two hundred (2 lots of 100)

Even though each of these digits are the same, they all have different values due to their place. Place value means the value of the digit changes depending on where it appears in a number.

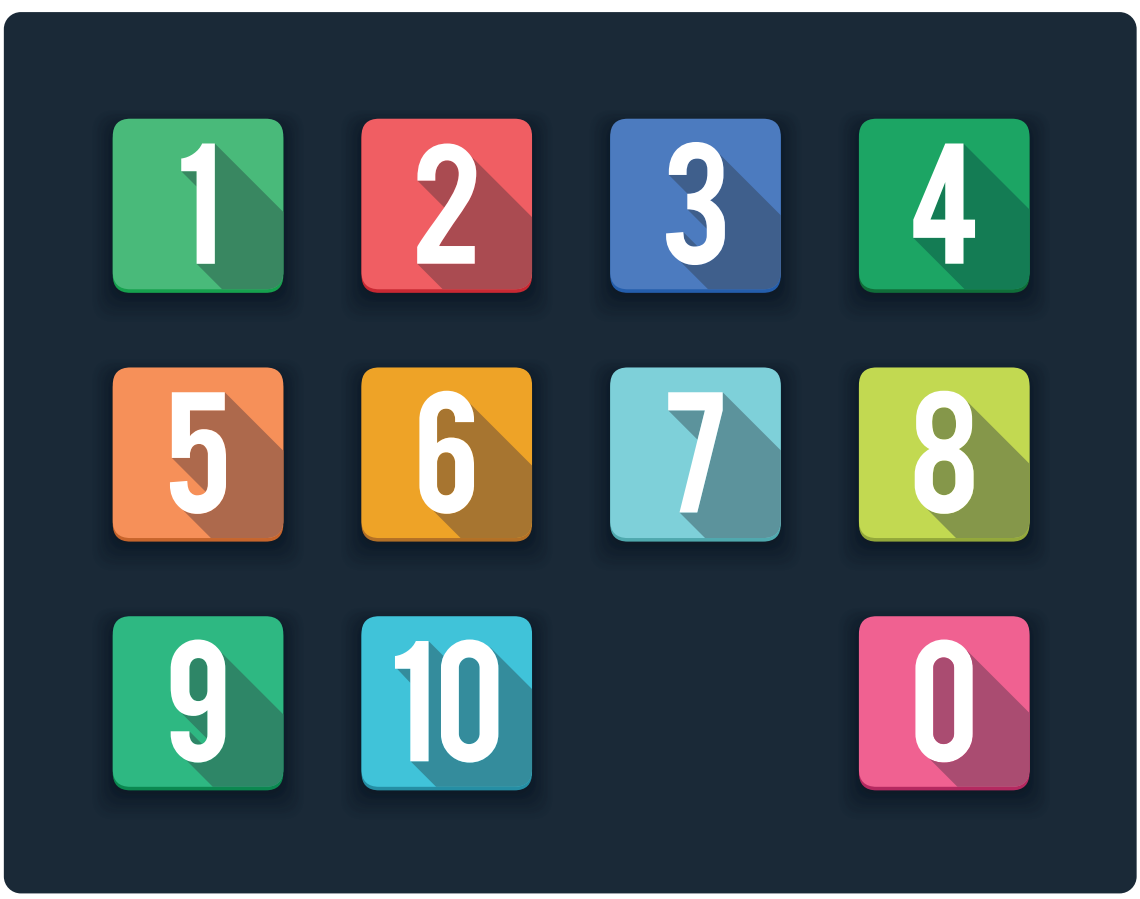
We can write down numbers beyond the millions, billions and trillions, but these are obviously very large numbers and not used in day-to-day life.

Recap – Place Value

Task 1

Put the following numbers into the correct places in the table below:

Number	H	T	O
1. Eighty-three			
2. One hundred and eighty			
3. Three hundred and twenty			
4. Fifty-four			
5. Seven			
6. Five hundred and fifty-five			
7. Ninety-nine			

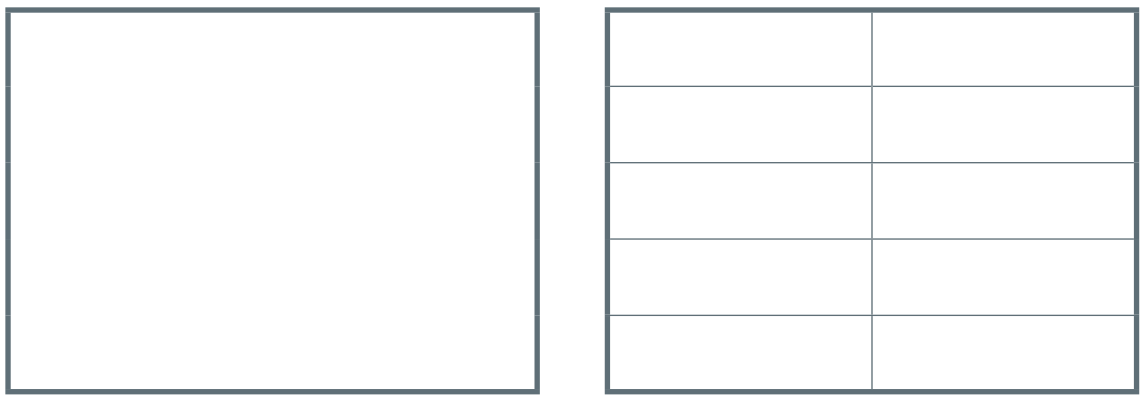


What is a Decimal?

Decimal comes from the Latin word **deci** meaning one part out of ten.

It can be seen in other words such as **decade** (10 years) and **decagon** (10-sided shape).

Look at the 2 shapes below.



They are both the same size. The first one is a whole (think of a £1 coin).

The second is the same but broken up into 10 **equal** pieces.

Look at this example with a £1 coin and 10p pieces.

What do you think the missing coin is worth?

If they all have the same value, it must be 10p.

We know that decimal numbers are numbers that are in between whole numbers.

But what does this mean?

Decimal Numbers

3.2 is a decimal number.

It is more than (**>**) 3 but less than (**<**) 4.

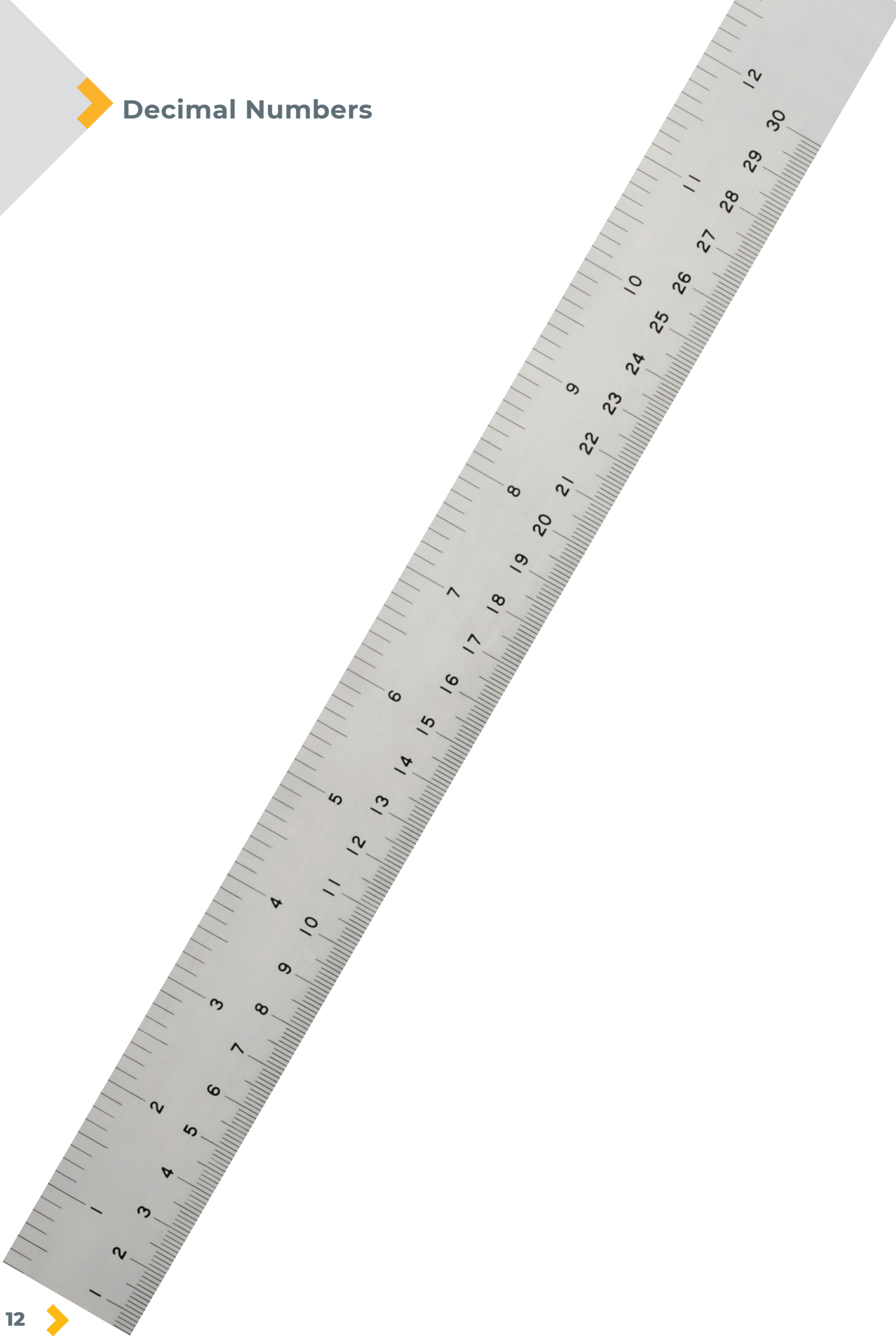
3.2

The black dot is called a **decimal point**.

Do you have a ruler? (There is a paper one you can use on the next page if you don't).

If you do, look at where 3cm and 4cm are on the ruler. Do you see all the small lines in between the 2 longer lines? These lines are split into equal parts. Each line marks one tenth (one part in ten) of a centimetre, (these are millimetres).

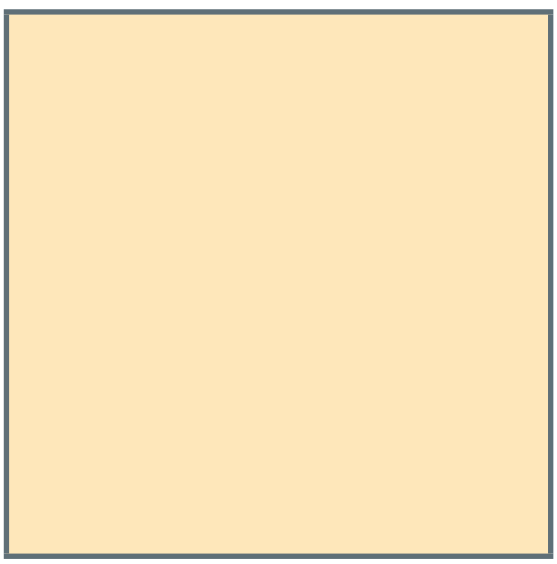
Decimal Numbers



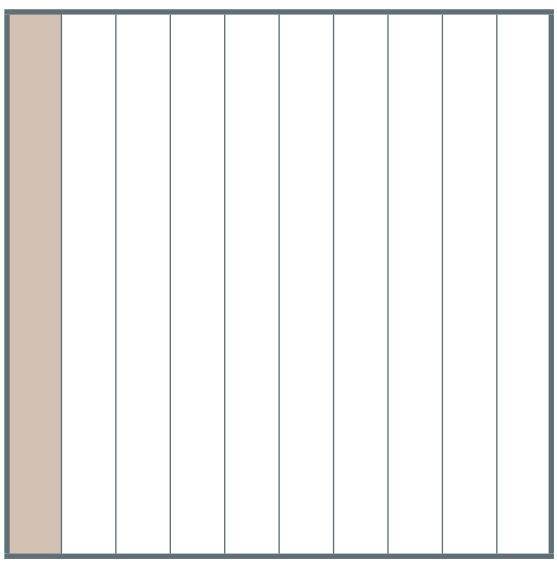
Decimal Numbers

As you can see, the gap between each whole number is split into 10 equal parts.

Ones (units)

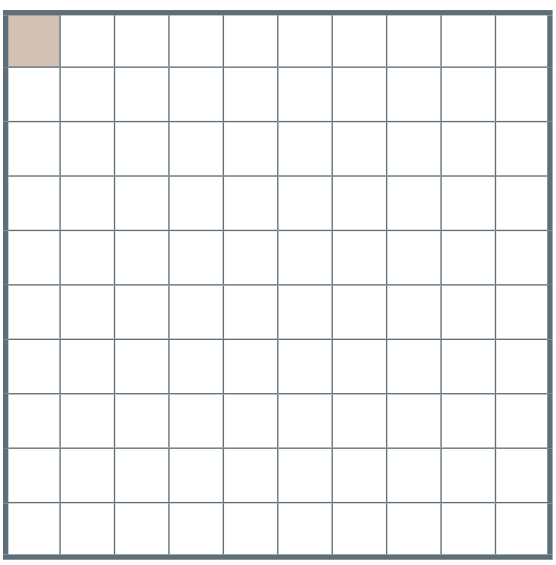


Tenths



One unit is split into ten parts to make ten tenths.

Hundredths

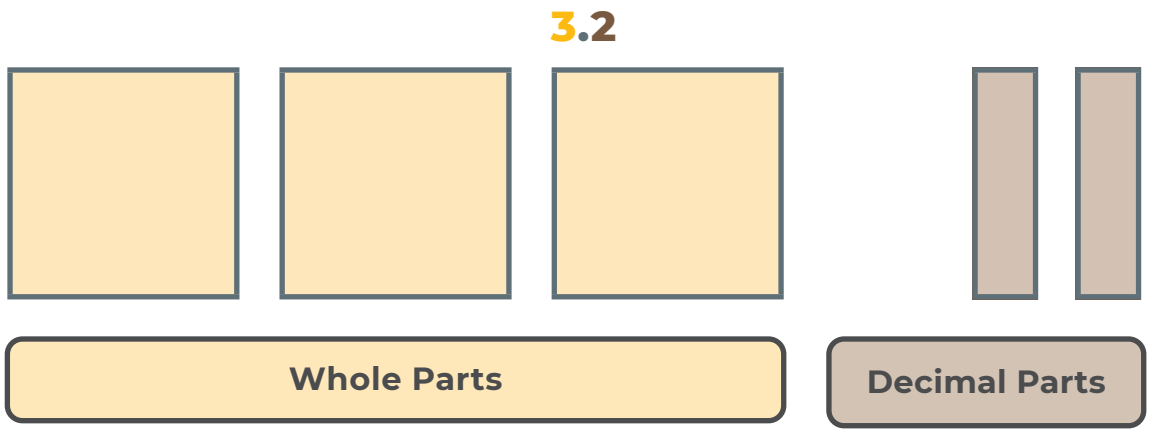


Each tenth is split into ten parts to make one hundred hundredths.

Each time, we have broken each piece into 10 equal pieces.

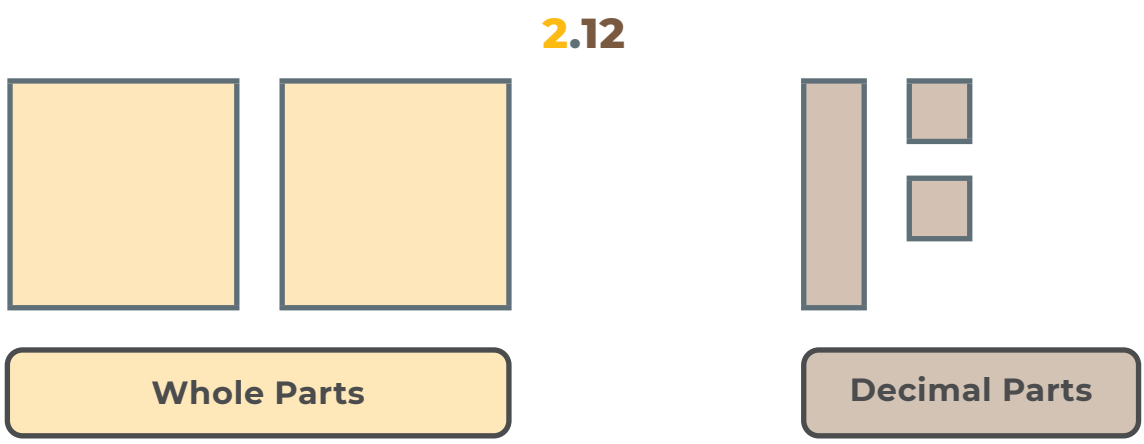
Decimal Numbers

Our 3.2 means we have...



After the decimal point there are two tenths.

Have a look at this example for breaking down 2.12:

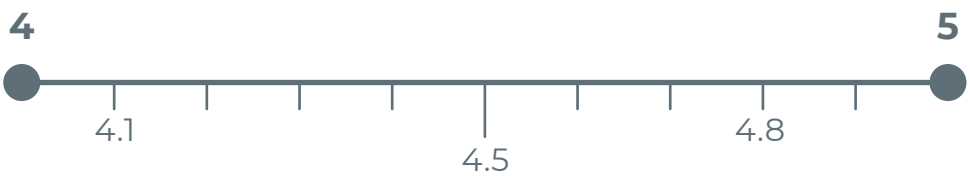


After the decimal point there is one tenth and two hundredths.

Decimal Numbers

Task 2

Fill in the missing values on the number lines below:



Decimal Places

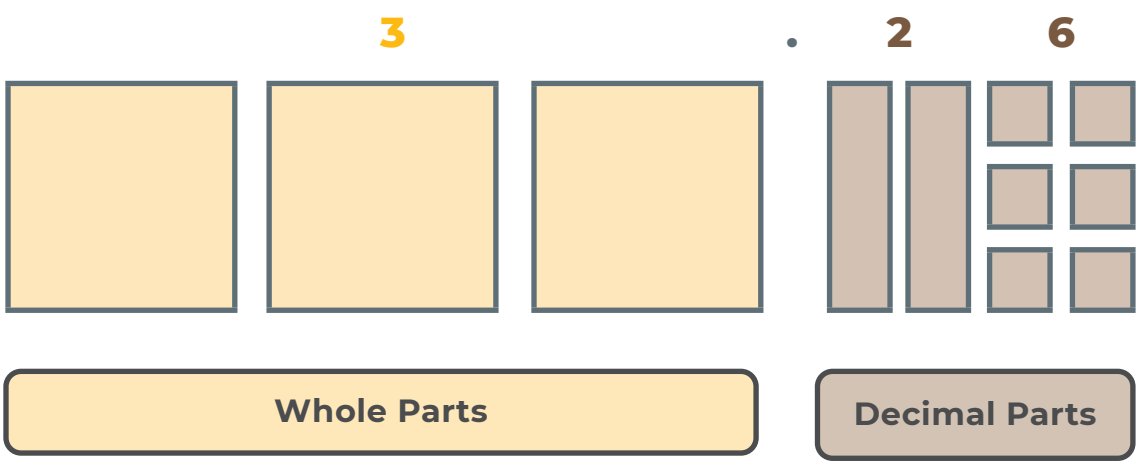
Sometimes numbers we are dealing with (often money) need us to be more accurate. This is when we use more than one decimal place.

Decimal places are how many numbers appear **after** (to the right of) the decimal point.

6.2 → **This has 1 decimal place**

6.21 → **This has 2 decimal places**

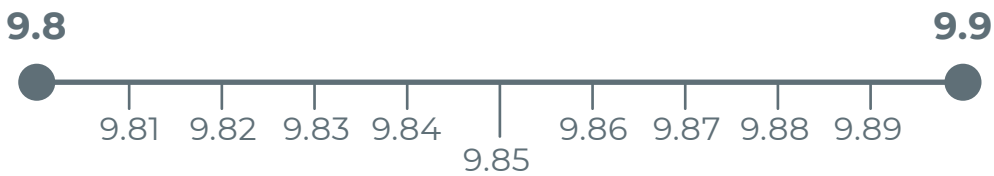
3.26 means we have...



This is said as three point two six.

Task 3

Fill in the missing values. The first one has been completed for you.



Comparing Decimals

When comparing decimals, it is important to line them up similarly to how we did in the Place Value booklet.

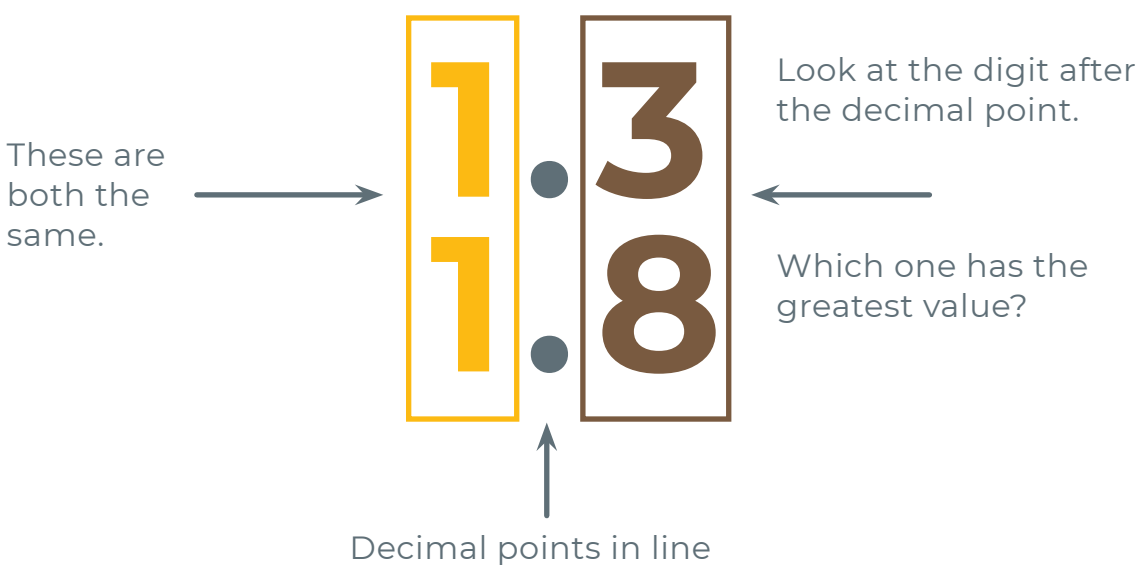
This ensures we are comparing tenths with tenths, and hundredths with hundredths.

The easiest way of ensuring your numbers are lined up properly is to make sure the decimal points are in line with each other.

Tens	Ones	Decimal Point	Tenths	Hundredths
	1	.	3	
	1	.	8	

We can then compare the digits from left to right. If both digits are the same, move to the next number to the right.

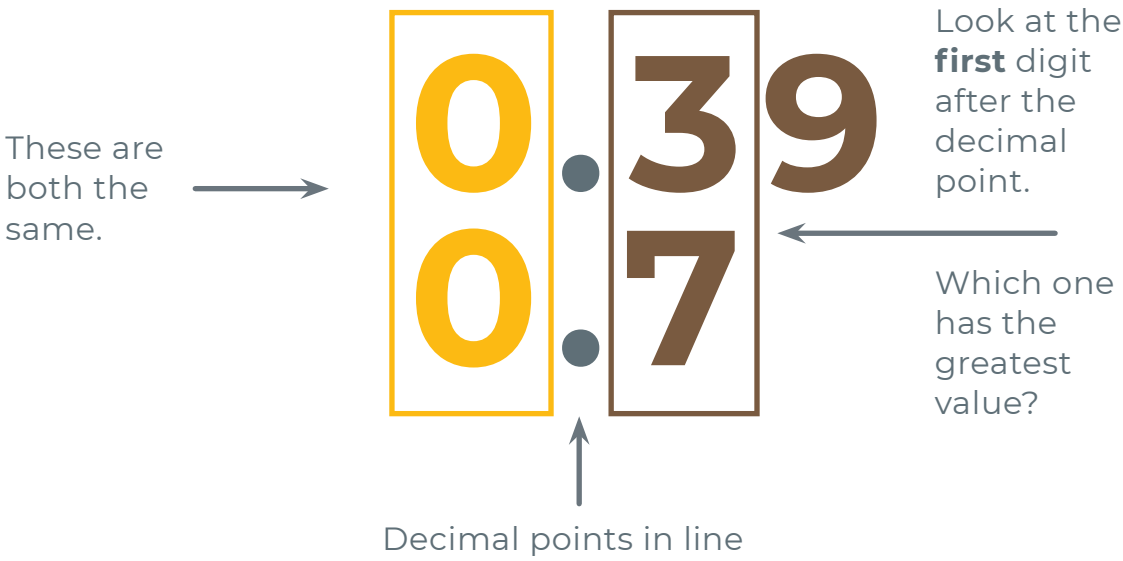
Which is greater: 1.3 or 1.8?



So, 1.8 is greater than 1.3.

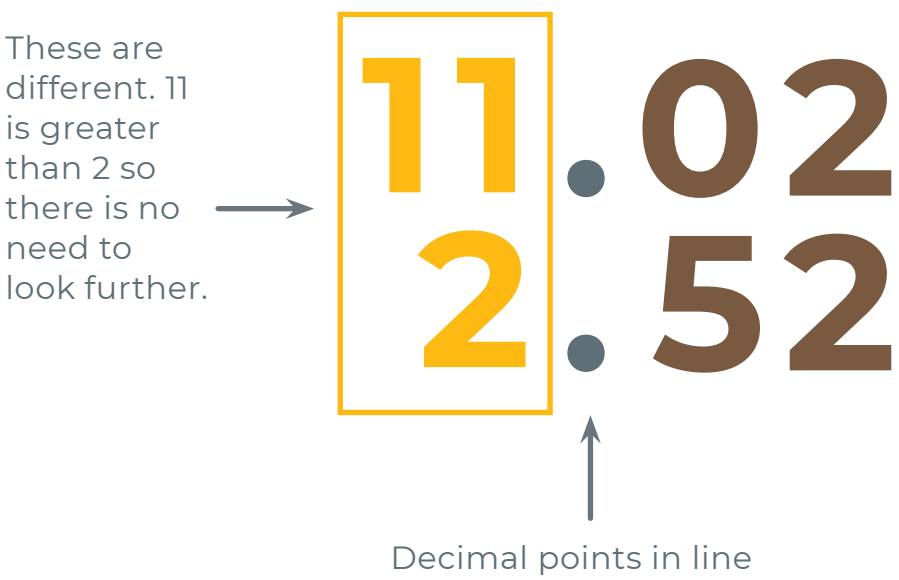
Comparing Decimals

What about 0.39 and 0.7?



The 7 has a greater value than the 3, so,0.7 is greater than 0.39.

What about 11.02 and 2.52?



11 has a greater value than 2, so 11.02 is greater than 2.52.

Comparing Decimals

Task 4

Have a go at this yourself, tick the bigger number:

1. ☐ **0.2** or **1.2** ☐
2. ☐ **0.9** or **0.8** ☐
3. ☐ **0.99** or **1** ☐
4. ☐ **2.42** or **2.5** ☐
5. ☐ **10.2** or **1.54** ☐
6. ☐ **9.92** or **2.99** ☐
7. ☐ **0.32** or **1.32** ☐
8. ☐ **0.59** or **0.6** ☐
9. ☐ **0.6** or **0.62** ☐
10. ☐ **0.01** or **0.009** ☐

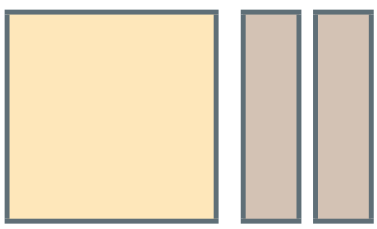
Missing Zeros

It can be difficult comparing decimals which don't have the same number of decimal places; however, it is possible to make them all the same.

1.2 is the same as **1.20**

If you think about it in terms of ones, tenths, and hundredths:

- We have 1 one
- We have 2 tenths
- We have 0 hundredths



Ones	Decimal Point	Tenths	Hundredths
1	.	2	0

You can add as many zeros to the end of a decimal as you want, it will still be the same.

Missing Zeros

What about 2.80 and 2.08? Are these numbers the same?

2.8 and **2.08**

What happens when we put a zero at the end of 2.8?

2.80 and **2.08**

These are both the same. →

2.80
2.08

Look at the first digit after the decimal point. Which one has the greatest value?

8 is greater than 0, so 2.8 is greater than 2.08.

Decimal Sequences

Sometimes we need to put a list of decimal numbers into order of size.

To do this we use the same method as when comparing 2 decimal numbers.

Compare the following decimal numbers. Put them in order from smallest to largest (**ascending order**).

1.3	**0.4**	**1.8**	**0.6**

Step 1:

- Look at the ones.
- Two of the numbers start with a 0, so these are smaller than the numbers that start with a 1.

Step 2:

- Look at the tenths for the numbers that start with 0.
  4 is less than 6 so 0.4 is smaller than 0.6

0.4	**0.6**	–	–

Step 3:

- Now compare the numbers that start with a 1.
- The ones are the same so look at the tenths. 3 is less than 8 so 1.3 is smaller than 1.8.
- So, 1.3 is next with 1.8 last.

0.4	**0.6**	**1.3**	**1.8**

Decimal Sequences

Task 5

Order each of these 5 sets of decimals from smallest to largest.

1.

0.5	1.4	0.2	0.7

2.

0.1	0.6	0.5	0.2

3.

1.1	0.8	1.5	0.1

4.

0.3	0.42	0.38	0.4

5.

0.04	0.1	0.2	0.09

Sequencing with Decimal Numbers

Sometimes we need to do more than put the numbers in order. Sometimes we need to find the missing number in the sequence.

1.25 1.3 **1.35** 1.4 – 1.5 **1.55**

How do we find the missing number?

We look at the change in values between the numbers. We can see that the numbers are increasing by 0.05.

So, the missing number is **1.45**

1.25 1.3 **1.35** 1.4 **1.35** 1.5 **1.55**

A jump of 0.05

1.25 1.3 **1.35** 1.4 **1.35** 1.5 **1.55**

A jump of 0.1

Sequencing with Decimal Numbers

Task 6

Fill in the missing numbers.

1.

0.1		**0.3**	**0.4**
A jump of 0.1	A jump of 0.1	A jump of 0.1	

2.

1.6	**1.8**		**2.2**	
A jump of 0.2				

3.

0.99		**1.01**	**1.02**	
		A jump of?		

4.

	1.4	**2.8**		**5.6**
		A jump of?		

5.

10.3		**30.5**	**40.6**
			A jump of?

Stretch and Challenge

Task 7

These are a bit trickier.

1.

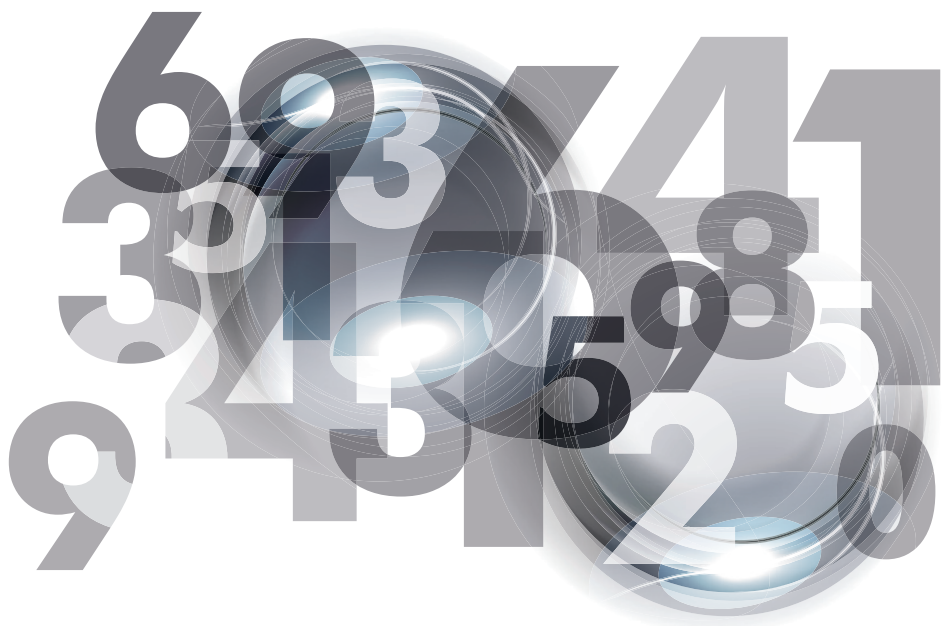
0.3			**0.15**	**0.1**
A jump of?				

2.

12.6		**71.4**	**100.8**	
A jump of?				

3.

		1.98	**0.99**	
A jump of?				



Recap

So far in this pack you have looked at:

Place values of digits.	✓
Decimal numbers (tenths and hundredths).	✓
Comparing decimals.	✓
Sequencing with decimal numbers.	✓

Notes

Notes

Notes

Let’s keep going

Feedback

WWW (What Went Well)

EBI (Even Better If)

Next steps

Learner feedback (Please provide some feedback for your tutor following the comments that you have just made on your work.)

Money

When writing down an amount of money, it is important you use the correct format.

Remember that 100p = £1

✓ **£1.20**

✓ **120p**

✗ **£1.20p**

You cannot use the pound sign (£) and pence sign (p) together.

If you had a 2 pound coin (£2), 40 pence (40p) and 7 pence (7p), how would you write this in the correct format?

£	.	10 Pence	Penny
2	.	4	7

£2.47

£ = 100p	.	10 Pence	Penny
2	.	4	7

£2 is 200p

200p + 40p + 7p = **247p**

So, it can be written as either £2.47 or 247p

Adding & Subtracting Money

This works exactly the same as adding and subtracting **integers**.

The most important thing is lining up your numbers with the correct place values. It's usually easiest to do this by lining up the decimal points.

Addition example: £1.23 + £3.68 = £4.91

```
  1.23
  3.68  +
------
 £4.91
```

8 + 3 = 11

2 + 6 + 1 = 9

1 + 3 = 4

- Remember to put in the pound (£) sign
- Remember to line up and put a decimal point in your answer
- Work from right to left

Subtraction example: £3.68 - £1.20 = £2.48

```
  3.68
  1.20  -
------
 £2.48
```

8 - 0 = 8

6 - 2 = 4

3 - 1 = 2

- Remember to put in the pound (£) sign
- Remember to line up and put a decimal point in your answer
- Work from right to left

Adding & Subtracting Money

Task 8

Add these decimals.

1.

	£	3	.	4	0
+	£	2	.	2	0

2.

	£	4	.	2	0
+	£	3	.	6	0

3.

	£	5	.	3	0
+	£	2	.	6	0

4.

	£	3	.	3	0
+	£	6	.	4	0

5.

	£	5	.	0	1
+	£	7	.	4	2

6.

	£	6	.	4	2
+	£	2	.	9	8

7.

	£	4	.	9	5
+	£	2	.	7	8

8.

	£	5	.	1	1
+	£	9	.	4	5

Adding & Subtracting Money

Task 9

Now try subtracting these decimals.

1.

	£	3	.	4	5
-	£	2	.	3	2

2.

	£	6	.	8	5
-	£	4	.	9	5

3.

	£	9	.	5	4
-	£	7	.	6	5

4.

	£	7	.	3	2
-	£	2	.	4	6

5.

	£	2	.	6	5
-	£	1	.	3	4

6.

	£	9	.	8	5
-	£	2	.	9	2

Skills Practice

Task 10

1. I have £17.50 in my pocket. I spent £13.64 in the shop. How much money do I have left? Show your working out.

2. My bill is £16.25. I pay with a £20 note. How much change should I get?

3a. I have £23.49 in my account. I get a tax refund of £59.03. I also get a refund of £64.28 from the electricity company. I pay £43.92 for my shopping and put £25.00 on my electricity meter. How much money do I have? Show your working out.

3b. How much money have I spent? How much money do I have left?

Skills Practice

Task 11

Now that you have completed the learning in this booklet, let's put your new skills into action.

1. Julie works in a **haberdashery**. She has been asked to sort the **reels** of ribbon into size order.

1a. Put these in ascending size order, from smallest to largest:

1.5cm	2.3cm	0.8cm	0.5cm

1b. Put these in **descending** size order, from largest to smallest:

0.6cm	1.8cm	0.95cm	1.75cm

2. Julie is doing a stock take. Knitting needles are sold in the following sizes. Which ones are missing from the inventory?

2.5mm		3mm	3.25mm	
	4mm	4.25mm		4.75mm

This task continues on the next page.

Skills Practice

Task 11

3. A customer asks for 1.4 metres of pink ribbon, 3.2 metres of floral ribbon and 2.25 metres of yellow ribbon. Altogether, how much ribbon does she need?

4. Julie sells 3 metres of red ribbon. It costs £1.95 per metre.

a. How much does she charge the customer?

b. If the customer pays with a £10 note, how much change should Julie give her?

5. A customer buys 2 metres of fabric at £7.50 per metre and 3 reels of thread at 78p per spool.

a. How much does she pay for the fabric?

b. How much change does she get if she pays with a £20 note?

Recap

After working through this booklet, you should now be able to:

Read, write and use decimals up to two decimal places.	✓
Recognise and continue sequences that involve decimals.	✓
Calculate with money.	✓

Glossary

Ascending	Increasing in size or importance.
Descending	Decreasing in size or importance.
Haberdashery	A shop in which fabric and accessories are sold.
Integers	A whole number, a number that is not a fraction.
Reels	A cylinder on which film, wire, thread, or other flexible materials can be wound.

Next Steps

Now you have completed Booklet 6, please return this to your tutor/trainer.

Your tutor/trainer will mark the work and provide you with some feedback showing what you have done well and suggestions on improvements.

The next booklet will be provided to you.

Have Your Say

We would be interested in your opinion of this booklet.

1. **Was there anything you found easy in this workbook?** Yes ☐ No ☐
   If you answered yes, what did you find easy?

2. **Was there anything you found hard?** Yes ☐ No ☐
   If you answered yes, what did you find hard?

3. **Is there anything that you would like your tutor to go over again?** Yes ☐ No ☐
   If you answered yes, what is this?

4. **If your tutor provided learning aids, did you use them?** Yes ☐ No ☐
   If you answered yes, how were they useful?

5. **Would you like more support?** Yes ☐ No ☐
   If you answered yes, one of our Support Staff will get in touch with you.

6. **Do you have any questions?**

7. **What have you learnt from this booklet?**

Notes

Notes