LO:To count in decimals up to 3 decimal places.

Success criteria:

- identify place values after the decimal point
- count in tenths
- count in hundredths
- count in thousandths

Starter game: Match the decimals, percentages and fractions?

25%

60%

1/4

13/20

3/8

40/100

37.5%

3/5

0.6

0.25

0.375

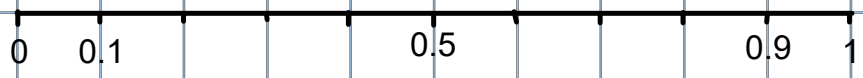
40%

0.4

0.65

65%

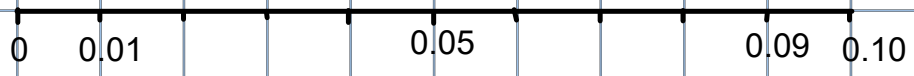
Today we will be counting in decimals. Remember decimals are used to represent part of a whole.



As you can see there are ten tenths between 0 and 1

c) 2 3/8 - 1 2/6

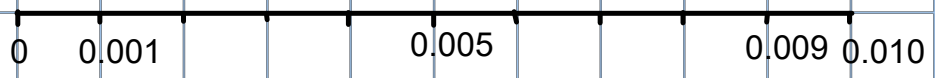
We can take this further. Between 0 and 0.1 we have ten hundredths.



As you can see there are ten hundredths between 0 and 0.1

c) 2 3/8 - 1 2/6

We can take this further again. Between 0 and 0.01 we have ten thousandths.



As you can see there are ten thousandths between 0 and 0.01

c) 2 3/8 - 1 2/6

Lets have a go at counting in tenths. Can you count 5 tenths on from these numbers?

3.5

4.1

5.8

Lets have a go at counting in tenths. Can you count 5 tenths on from these numbers?

3.5, 3.6, 3.7, 3.8, 3.9, 4

4.1, 4.2, 4.3, 4.4, 4.5, 4.6

5.8, 5.9, 6, 6.1, 6.2, 6.3

Lets have a go at counting in hundredths. Can you count 5 hundredths on from these numbers?

3.52

4.13

5.87

Lets have a go at counting in hundredths. Can you count 5 hundredths on from these numbers?

3.52, 3.53, 3.54, 3.55, 3.56, 3.57

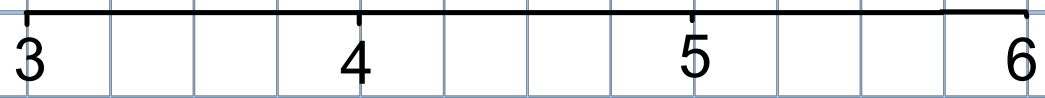
4.13, 4.14, 4.15, 4.16, 4.17, 4.18

5.87, 5.88, 5.89, 5.9, 5.91, 5.92

Today we will be rounding decimals.

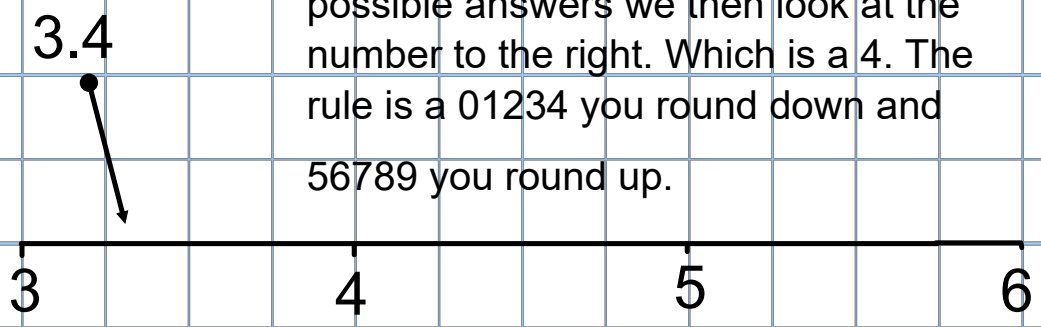
When rounding we need to identify the two possible answers.

Rounding 3.4 to the nearest whole number we need to identify the two possible answers.



As you can see 3.4 is between 3 and 4. These are our two possible answers.

Once we have identified the two possible answers we then look at the number to the right. Which is a 4. The rule is a 01234 you round down and 56789 you round up.



Rules for rounding

- Identify the two possible answers - what numbers does your number lie between
- Check the digit to the right of the place value you are rounding to, for example if rounding to the nearest ten you check the place value to the right (ones)
- Apply the rule - 0123 or 4 you round down. 5678 or 9 you round up.

Can you round these to the nearest whole number?

4.7

3.5

6.4

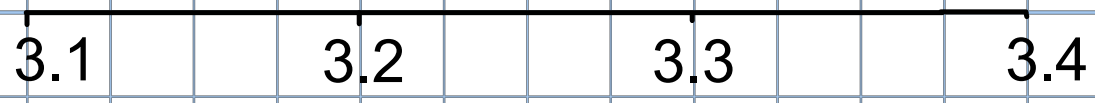
7.3

Can you round these to the nearest whole number?

4.7	5
3.5	5
6.4	6
7.3	7

This applies to when rounding to the nearest tenth.

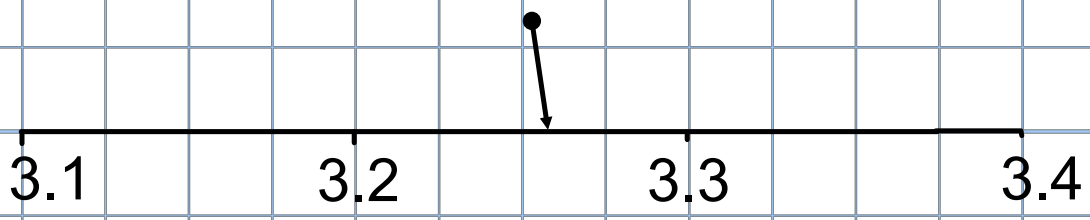
Rounding 3.26 to the nearest tenth we need to identify the two possible numbers. Where does 3.26 come in between?



This applies to when rounding to the nearest tenth.

As you can see 3.26 comes in between 3.2 and 3.3

Once this has been identified we look to the right number, which is a 6 this means we round up to 3.3.



Can you round these numbers to the nearest tenth.

5.64

3.17

4.89

7.45

Can you round these numbers to the nearest tenth.

5.64	5.6
3.17	3.2
4.89	4.9
7.45	7.5

LO: To order decimals up to and including 3 decimal places.

Success criteria

- To correctly lay out a place value grid
- To understand the value of each digit within a number
- Look carefully at the ordering rule, largest to smallest or smallest to largest

Starter activity: Countdown

Can you make the target number using only the numbers provided, you can only use the numbers once.

240	653
100, 10, 6, 4, 5, 2,	75, 9, 6, 3, 5, 8

Today we are going to order decimals. A great strategy is writing the decimals on top of each other.

2.02

20.2

2.12

21.02

2.202

Make sure you write the place value headings to help.

T U. $\frac{1}{10}$ $\frac{1}{100}$ $\frac{1}{1000}$

Make sure the decimals line up.

Lets work through this one together.

2.002, 2.2, 0.202, 20.002, 0.22

Step 1: lets write down our place value grid.

Step 2: lets write our numbers under each other - going down in columns.

Step 3: put in place value holders where necessary.

2.002, 2.2, 0.202, 20.002, 0.22

02.002

02.200

00.202

20.002

00.220

As you can see it is much clearer to order these smallest to largest and we have also put in our place value holders. Remember our decimam point must line up.

2.002, 2.2, 0.202, 20.002, 0.22

Smallest to largest

02.002

02.200

00.202

20.002

00.220

00.202

00.220

02.002

02.200

20.002

LO: I can multiply and divide decimal numbers by 10, 100 and 1000

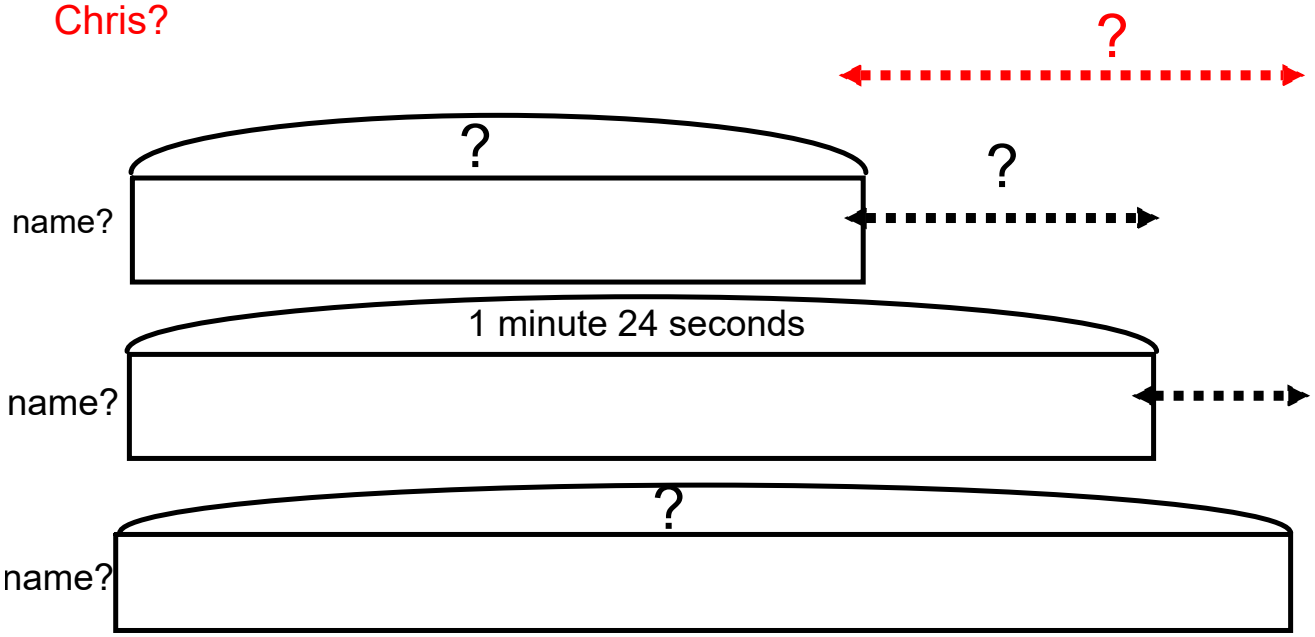
Success criteria

- I Know that when you multiply numbers they move left along the place value grid as they get larger
- I know that when you divide numbers move right along the place value grid as they get smaller
- I know that the amount of times numbers move along the place value is dependent on how many zeros there are in the calculation
- I can accurately use a place value grid to help me when moving numbers.

Starter activity: Bar modelling

Try and fill in and label the bar model provided using information from the word problem?

Mohammed runs the 800m in 1 minute and 24 seconds. Rob is 12 seconds quicker than Mohammed and Chris is 6 seconds slower than Mohammed. What is the difference in time between Rob and Chris?



My legs don't run

Use this saying to help understand the movement numbers along the place value grid.

My legs don't run

multiplication left division right

Millions			Thousands			Units				Decimals				
Hundreds of Millions 100 000 00	Tens of Millions 10 000 000	One Millions 1 000 000	Hundreds of Thousands 100 000	Tens of Thousands 10 000	One Thousands 1000	Hundreds 100	Tens 10	Units 1	Decimal Point	Tenths $\frac{1}{10}$ 0.1 or	Hundreths $\frac{1}{100}$ 0.01 or	Thousandths $\frac{1}{1000}$ 0.001	Tens of Thousandths $\frac{1}{10000}$ 0.0001	Hundreds of Thousandths $\frac{1}{100000}$ 0.00001
									•					
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When dividing by 10, 100 or 1000 the numbers move right along the place value because the numbers are getting smaller. The amount of times they move is dependent on how many zeros there are i.e. 10 is one jump, 100 is two jumps and 1000 is three jumps.

Millions			Thousands			Units				Decimals				
Hundreds of Millions 100 000 00	Tens of Millions 10 000 000	One Millions 1 000 000	Hundreds of Thousands 100 000	Tens of Thousands 10 000	One Thousands 1000	Hundreds 100	Tens 10	Units 1	Decimal Point	Tenths $\frac{1}{10}$ 0.1 or	Hundreths $\frac{1}{100}$ 0.01 or	Thousandths $\frac{1}{1000}$ 0.001	Tens of Thousandths $\frac{1}{10000}$ 0.0001	Hundreds of Thousandths $\frac{1}{100000}$ 0.00001
							3	0	•					
								3	•					
							3	0	•					
								0	•	3				
							3	0	•					
								0	•	0	3			

Let's do some together

30 ÷ 10 = 3

30 ÷ 100 = 0.3

30 ÷ 1000 = 0.03

Millions			Thousands			Units				Decimals				
Hundreds of Millions 100 000 00	Tens of Millions 10 000 000	One Millions 1 000 000	Hundreds of Thousands 100 000	Tens of Thousands 10 000	One Thousands 1000	Hundreds 100	Tens 10	Units 1	Decimal Point	Tenths $\frac{1}{10}$ 0.1 or	Hundreths $\frac{1}{100}$ 0.01 or	Thousandths $\frac{1}{1000}$ 0.001	Tens of Thousandths $\frac{1}{10000}$ 0.0001	Hundreds of Thousandths $\frac{1}{100000}$
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Complete these calculations independently using the place value grid.

70 ÷ 10 =

70 ÷ 100 =

70 ÷ 1000 =

Millions			Thousands			Units				Decimals				
Hundreds of Millions 100 000 00	Tens of Millions 10 000 000	One Millions 1 000 000	Hundreds of Thousands 100 000	Tens of Thousands 10 000	One Thousands 1000	Hundreds 100	Tens 10	Units 1	Decimal Point	Tenths $\frac{1}{10}$ 0.1 or	Hundreths $\frac{1}{100}$ 0.01 or	Thousandths $\frac{1}{1000}$ 0.001	Tens of Thousandths $\frac{1}{10000}$ 0.0001	Hundreds of Thousandths $\frac{1}{100000}$ 0.00001
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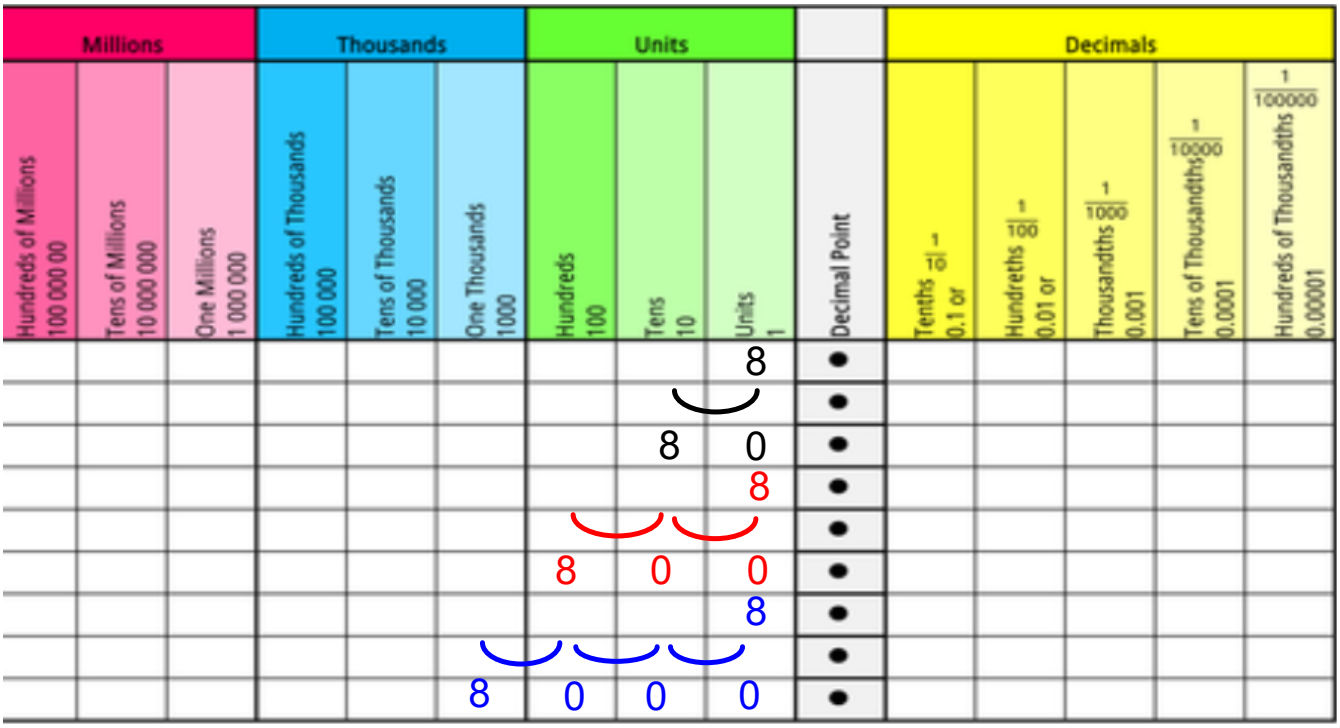
When multiplying by 10, 100 or 1000 the numbers move left along the place value because the numbers are getting larger. The amount of times they move is dependent on how many zeros there are i.e. 10 is one jump, 100 is two jumps and 1000 is three jumps.



Let's complete some together.

8 x 10 =

8 x 100 =

8 x 1000 =

Tip: remember to put in zeros as place value holders.

Millions			Thousands			Units				Decimals				
Hundreds of Millions 100 000 00	Tens of Millions 10 000 000	One Millions 1 000 000	Hundreds of Thousands 100 000	Tens of Thousands 10 000	One Thousands 1000	Hundreds 100	Tens 10	Units 1	Decimal Point	Tenths $\frac{1}{10}$ 0.1 or	Hundreths $\frac{1}{100}$ 0.01 or	Thousandths $\frac{1}{1000}$ 0.001	Tens of Thousandths $\frac{1}{10000}$ 0.0001	Hundreds of Thousandths $\frac{1}{100000}$ 0.00001
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Complete these question independently.

5 x 10 = 63 x 10 =

5 x 100 = 63 x 100 =

5 x 1000= 63 x 1000 =

LO: To use my knowledge of multiplication and division to solve decimal word problems

Success criteria

- To apply the RUCSAC method
- To understand and highlight the key information in a question
- To use the correct operation based on the words in the word problems

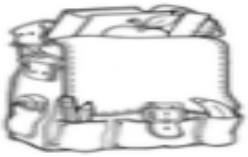
Starter activity: Odd one out

Can you use your mathematical knowledge to identify which number is the odd one out. There are no right or wrong answers as long as you can justify why one number is the odd one out.

1213 45

7

RUCSAC method



The RUCSAC Method for solving maths word problems

R	Read the question carefully	Find the important information – underline it!
U	Understand the question	What do you have to find out? Draw a 'picture' of the question, if it helps.
C	Choose the correct method of calculation	+ − x ÷ What method is best for you to use?
S	Solve the problem	Show every step and keep your working out neat.
A	Answer the question	Read the question again – have you answered it? Make the answer clear.
C	Check your answer	Does it make sense? Find a way to check – estimate or use the inverse.

Let's apply the RUCSAC method to this word problem.

Jasmine goes shopping. She buys 3 dvd's for £8.99 each. How much change does she get from £30.

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Jasmine goes shopping. She buys 3 dvd's for £8.99 each. How much change does she get from £30.

Jasmine goes shopping. She buys 3 dvd's for £8.99 each. How much change does she get from £30.

899

x 3

26.97

.2

£30.00

- 26.97

£03.03

LO: To complete an arithmetic test

Questions to watch out for

2, 3, 8, 16 = percentages of an amount

To calculate percentage of a number

first find 1%

Then multiply by the percentage you are trying to work out

13% of 140 140÷100= 1.4 1.4 x 13 = 18.2

Questions to watch out for

6) fraction multiply a number

3/4 x 24 = 18

Remember in this case times means of.

So, to answer we divide by the denominator then multiply by the numerator.

24 ÷ 4 = 6

6 x 3 = 18

Questions to watch out for

10) fraction divide whole number (keep change flip)