	Learning objective	Main teaching	Activity	Resources	Vocabulary
Monday	LO to use mathematical vocabulary when working with decimals	Where in life do we use decimals? How are they useful? Can you think of when we use decimals down to thousandths? Weight in kg? Distance in km? How does this help? Write a list of as many examples of decimals in use in real life as you can. You might like to research on the internet.	Look below this plan for today's independent activities. It is really important that you complete them, even if you think you know all of this, because it shows decimals in lots of different ways and you will need this information in the next few lessons. Mark your work when you are finished.	Worksheets saved below Pencil Maths paper	Decimal Tenth Hundredth Thousandth Decimal point Whole Represents
Tuesday	LO to explore numbers between two whole numbers	Count out loud in money intervals: 10p? 20p? 50p etc. Write this down: £0.10 £0.20 £0.30 etc Now try counting in 5ps. Write the pattern. Further challenge: try 1ps? 2ps? 4p? £1.20s? **Now watch: Decimals to 2dp** https://vimeo.com/485432781	Scroll down this document to find the independent tasks for Tuesday. Complete the worksheet based on decimals to 2 decimal places. Mark your work when you are finished.	Worksheets Pencil Maths paper	Decimal Fraction Whole Tenths Hundredths Thousandths
Wednesday	LO to understand the link between decimals and fractions	Count back and forward in 0.1s. Practise this saying 'one tenth, two tenths etc' and then '0.1, 0.2 etc' What happens when you reach 1 whole? Can you count backwards from 10 in tenths? **Now watch: Decimals as fractions** https://vimeo.com/490693175	Work through your worksheet called 'Y6 Wednesday independent task' Read the questions carefully and you might find it useful to draw a place value grid in your book before you start: **H T U . t h th tth**	Worksheets Maths paper Pencil	Decimal Fraction Numerator Denominator Whole Tenths Hundredths Thousandths

Thursday	LO to find and understand numbers between two decimal numbers	Recap the counting from previous days. What comes between 0.15 and 0.16? Are there any numbers between? Practice counting from 0.150 in thousandths: 0.150, 0.151 etc **Now watch: Understanding thousandths** https://vimeo.com/485550430	Scroll down to find your worksheet: 'Y6 Thursday independent task'. You may choose 10 questions from A or B to complete but read them carefully first (and read the example) so that you make a choice based on how confident you feel.	Worksheets Pencil Maths paper	Decimal Fraction Numerator Denominator Whole Tenths Hundredths Thousandths
Friday	LO to solve problems using decimals to 3dp	**Now watch: Thousandths as decimals** https://vimeo.com/487196408	Visit this website. Recap your learning from this week by completing the quiz, watching the videos, reading the information and doing the activity at the end. https://www.bbc.co.uk/bitesize/articles/zt4wcmn If you have a willing adult or sibling (or maybe a friend over video call?) have a go at playing this game: Spiralling Decimals! https://nrich.maths.org/10326	Video link Spiralling Decimals game BBC Bitesize link Paper Pencils	Decimal Fraction Numerator Denominator Whole Tenths Hundredths Thousandths

Scroll down for worksheets, activities and answers

Which number is represented on the place value chart?

Ones		Tenths	Hundredths
	•	0.1	0.01 0.01
0	•	1	2

There are ____ ones, ____ tenths and ____ hundredths.

The number is ____

Represent the numbers on a place value chart and complete the stem sentences.

| 0.28 | 0.65 | 0.07 | 1.26 |

Make the numbers with place value counters and write down the value of the underlined digit.

| 2.4̲5 | 3.0̲4 | 4̲.44 | 4̲3.34 |

0.76 = 0.7 + 0.06 = 7 tenths and 6 hundredths.
Fill in the missing numbers.

0.83 = ____ + 0.03 = _____ and 3 hundredths.

0.83 = 0.7 + ____ = 7 tenths and _____

How many other ways can you partition 0.83?

Tommy says,

The more decimal places a number has, the smaller the number is.

Do you agree?
Explain why.

Alex says that 3.24 can be written as 2 ones, 13 tenths and 4 hundredths.

Do you agree?

How can you partition 3.24 starting with 2 ones?
How can you partition 3.24 starting with 1 one?
Think about exchanging between columns.

Four children are thinking of four different numbers.

3.454	4.445
4.345	3.54

Teddy: "My number has four hundredths."

Alex: "My number has the same amount of ones, tenths and hundredths."

Dora: "My number has less ones that tenths and hundredths."

Jack: "My number has 2 decimal places."

Match each number to the correct child.

Tommy says,

> The more decimal places a number has, the smaller the number is.

Do you agree?
Explain why.

Possible answer:

I do not agree with this as the number 4.39 is smaller than the number 4.465, which has more decimal places.

Alex says that 3.24 can be written as 2 ones, 13 tenths and 4 hundredths.

Do you agree?

How can you partition 3.24 starting with 2 ones?
How can you partition 3.24 starting with 1 one?
Think about exchanging between columns.

Possible answer:

I disagree; Alex's numbers would total 3.34. I could make 3.24 by having 2 ones, 12 tenths and 4 hundredths or 1 one, 22 tenths and 4 hundredths.

Four children are thinking of four different numbers.

| 3.454 | 4.445 |

| 4.345 | 3.54 |

Teddy: "My number has four hundredths."

Alex: "My number has the same amount of ones, tenths and hundredths."

Dora: "My number has less ones that tenths and hundredths."

Jack: "My number has 2 decimal places."

Match each number to the correct child.

Teddy: 4.345

Alex: 4.445

Dora: 3.454

Jack: 3.54

Y6 Tuesday independent work

Use <, > or = to make the statements correct.

 ◯

 ◯ $13.33 \div 10$
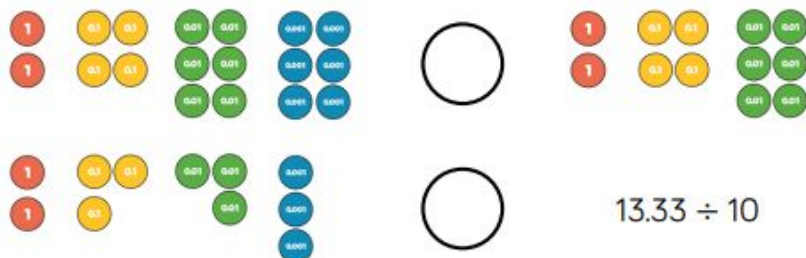
Place the numbers in ascending order on the number line.

| 3.115 | $3\frac{113}{1000}$ | Three and 11 hundredths |

3.11   3.12
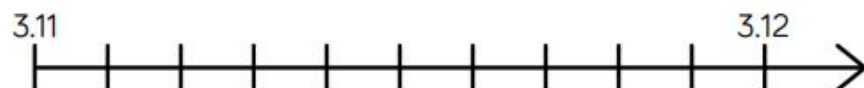
Place in descending order.

- 0.123   0.321   0.231   0.103
- 3.2 km   3.21 km   3.212 km   3202 m
- 65.394   65.309   63.999   65.493

Dexter is measuring a box of chocolates with a ruler that measures in centimetres and millimetres.

He measures it to the nearest cm and writes the answer 28 cm.
What is the smallest length the box of chocolates could be?

Whitney is thinking of a number.

Rounded to the nearest whole her number is 4
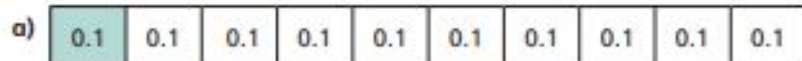Rounded to the nearest tenth her number is 3.8
Write down at least 4 different numbers that she could be thinking of.

Dexter is measuring a box of chocolates with a ruler that measures in centimetres and millimetres.

He measures it to the nearest cm and writes the answer 28 cm.
What is the smallest length the box of chocolates could be?

Smallest: 27.5 cm

Whitney is thinking of a number.

Rounded to the nearest whole her number is 4
Rounded to the nearest tenth her number is 3.8
Write down at least 4 different numbers that she could be thinking of.

Possible answers:
3.84
3.83
3.82 etc.

Some children might include answers such as 3.845

A number between 11 and 20 with 2 decimal places rounds to the same number when rounded to one decimal place and when rounded to the nearest whole number?

What could this be?
Is there more than one option?
Explain why.

The whole number can range from 11 to 19 and the decimal places can range from ___.95 to ___.99

Can children explain why this works?

1 Complete the sentences.

a)

0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

The whole has been divided into ☐ equal parts.

Each part is worth ☐

This is equivalent to ☐

b)
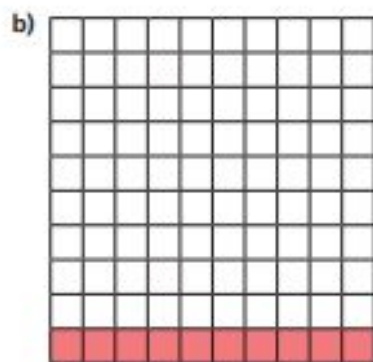
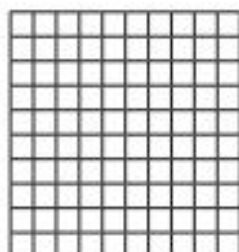The whole has been divided into ☐ equal parts.

Each part is worth ☐

☐ parts out of ☐ are shaded.

This is equivalent to ☐

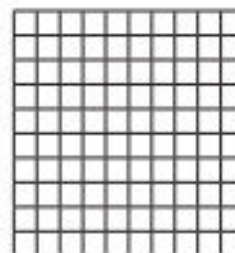**2** a) Shade 0.17 of the hundred square.

Complete the sentence.

☐ parts out of ☐ are shaded.

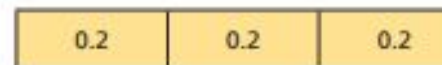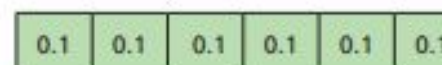Write 0.17 as a fraction.

0.17 = ☐

b) Shade 0.2 of the hundred square.

Complete

☐

Write 0.2

0.2 = ☐

3

0.1	0.1	0.1	0.1	0.1	0.1

0.2	0.2	0.2

Use the bar models to fill in the missi

$0.2 = \dfrac{\square}{10} = \dfrac{1}{\square}$ $0.4 = \dfrac{\square}{10}$

4 Fill in the missing numbers.

a) $0.54 = \dfrac{\square}{100} = \dfrac{\square}{50}$

b) $0.6 = \dfrac{\square}{10} = \dfrac{\square}{5}$

c) $0.3 = \dfrac{\square}{10} = \dfrac{\square}{100}$

b) Shade 0.2 of the hundred square.

Complete the sentence.

| | parts out of | | are shaded.

Write 0.2 as a fraction in its simplest form.

$0.2 = $ ☐

3

| 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

| 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |

Use the bar models to fill in the missing numbers.

$0.2 = \dfrac{\square}{10} = \dfrac{1}{\square}$ $0.4 = \dfrac{\square}{10} = \dfrac{2}{\square}$ $\square = \dfrac{\square}{10} = \dfrac{4}{5}$

4 Fill in the missing numbers.

a) $0.54 = \dfrac{\square}{100} = \dfrac{\square}{50}$

b) $0.6 = \dfrac{\square}{10} = \dfrac{\square}{5}$

c) $0.3 = \dfrac{\square}{10} = \dfrac{\square}{100}$

d) $\square = \dfrac{9}{100}$

e) $\square = \dfrac{9}{10}$

f) $\dfrac{21}{50} = \dfrac{\square}{100} = \square$

5 Use the bar models to fill in the missing numbers.

a)

$\dfrac{1}{2} = \dfrac{\square}{10} = \square$

b)

$\square = \dfrac{\square}{10} = \dfrac{\square}{20}$

6

$0.3 = \dfrac{3}{10}$ so $0.37 = \dfrac{37}{10}$

Draw a diagram to show that Ron is wrong.

Decimals as fractions

White Rose Maths

1 Complete the sentences.

a)

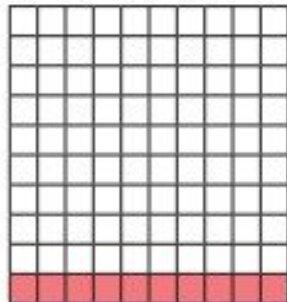| 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

The whole has been divided into 10 equal parts.

Each part is worth 0.1

This is equivalent to $\frac{1}{10}$

b)

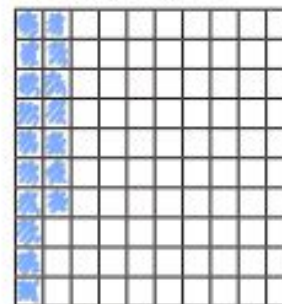The whole has been divided into 100 equal parts.

Each part is worth 0.01

10 parts out of 100 are shaded.

This is equivalent to $\frac{10}{100}$ or $\frac{1}{10}$

2 a) Shade 0.17 of the hundred square.

Complete the sentence.

17 parts out of 100 are shaded.
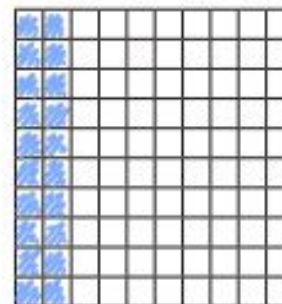
Write 0.17 as a fraction.

$0.17 = \frac{17}{100}$

b) Shade 0.2 of the hundred square.

Complete the sentence.

20 parts out of 100 are shaded.
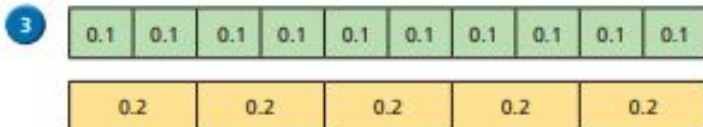
Write 0.2 as a fraction in its simplest form.

$0.2 = \frac{1}{5}$

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3

| 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

| 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |

Use the bar models to fill in the missing numbers.

$0.2 = \dfrac{2}{10} = \dfrac{1}{5}$

$0.4 = \dfrac{4}{10} = \dfrac{2}{5}$

$0.8 = \dfrac{8}{10} = \dfrac{4}{5}$

4 Fill in the missing numbers.

a) $0.54 = \dfrac{54}{100} = \dfrac{27}{50}$

b) $0.6 = \dfrac{6}{10} = \dfrac{3}{5}$

c) $0.3 = \dfrac{3}{10} = \dfrac{30}{100}$

d) $0.09 = \dfrac{9}{100}$

e) $0.9 = \dfrac{9}{10}$

f) $\dfrac{21}{50} = \dfrac{42}{100} = 0.42$

5 Use the bar models to fill in the missing numbers.

a)

$\dfrac{1}{2} = \dfrac{5}{10} = 0.5$
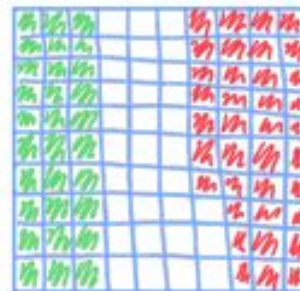
b)

$0.1 = \dfrac{1}{10} = \dfrac{2}{20}$

6

$0.3 = \dfrac{3}{10}$ so $0.37 = \dfrac{37}{10}$
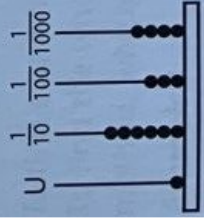
Draw a diagram to show that Ron is wrong.

$0.3 = \dfrac{3}{10}$

$0.37 = \dfrac{37}{100}$

The value of a digit depends upon its position in the number.

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

$1\frac{634}{1000} = 1.634$

$1 + \frac{6}{10} + \frac{3}{100} + \frac{4}{1000}$

$1 + 0.6 + 0.03 + 0.004$

Give the value of the 5 in each number.

$0.513 \rightarrow \frac{5}{10}$

$5.247 \rightarrow 5$

$1.359 \rightarrow \frac{5}{100}$

$0.085 \rightarrow \frac{5}{1000}$

A

Write as decimals.

1. $\frac{9}{10}$
2. $\frac{27}{100}$
3. $\frac{1}{2}$
4. $\frac{3}{100}$
5. $\frac{7}{10}$
6. $\frac{135}{1000}$
7. $\frac{1}{4}$
8. $\frac{89}{100}$
9. $\frac{3}{10}$
10. $\frac{11}{1000}$
11. $\frac{3}{4}$
12. $\frac{8}{1000}$

Write as fractions.

13. 0.25
14. 0.1
15. 0.634
16. 0.98
17. 0.02
18. 0.309
19. 0.81
20. 0.4
21. 0.562
22. 0.07
23. 0.19
24. 0.057

Give the value of the underlined figure.

25. 13.5
26. 8.16
27. 2.4
28. 0.328
29. 5.09
30. 29.7
31. 6.27
32. 11.036
33. 37.6
34. 0.94
35. 4.585
36. 42.81

B

Write as decimals.

1. $4\frac{713}{1000}$
2. $7\frac{28}{1000}$
3. $\frac{36}{100}$
4. $2\frac{7}{1000}$
5. $1\frac{539}{1000}$
6. $8\frac{98}{100}$
7. $\frac{41}{1000}$
8. $9\frac{485}{1000}$
9. $13\frac{19}{100}$
10. $5\frac{6}{1000}$
11. $\frac{147}{1000}$
12. $6\frac{53}{1000}$

Write as mixed numbers.

13. 3.839
14. 8.075
15. 12.42
16. 6.901
17. 4.06
18. 9.548
19. 1.082
20. 27.7
21. 5.643
22. 3.02
23. 16.317
24. 2.49

Give the value of the underlined figure.

25. 4.923
26. 0.165
27. 59.014
28. 17.807
29. 32.68
30. 5.072
31. 43.296
32. 6.038
33. 21.45
34. 9.741
35. 4.309
36. 8.563

A

1 0·9	7 0·25	13 $\frac{1}{4}$	19 $\frac{81}{100}$	25 $\frac{5}{10}$	31 $\frac{7}{100}$
2 0·27	8 0·89	14 $\frac{1}{10}$	20 $\frac{4}{10}$	26 $\frac{6}{100}$	32 10
3 0·5	9 0·3	15 $\frac{634}{1000}$	21 $\frac{562}{1000}$	27 2	33 $\frac{6}{10}$
4 0·03	10 0·011	16 $\frac{98}{100}$	22 $\frac{7}{100}$	28 $\frac{3}{10}$	34 $\frac{9}{10}$
5 0·7	11 0·75	17 $\frac{2}{100}$	23 $\frac{19}{100}$	29 $\frac{9}{100}$	35 $\frac{8}{100}$
6 0·135	12 0·008	18 $\frac{309}{1000}$	24 $\frac{57}{1000}$	30 9	36 2

B

1 4·713	7 0·041	13 $3\frac{839}{1000}$	19 $1\frac{82}{1000}$	25 $\frac{2}{100}$	31 $\frac{2}{10}$
2 7·028	8 9·485	14 $8\frac{75}{1000}$	20 $27\frac{7}{10}$	26 $\frac{5}{1000}$	32 $\frac{8}{1000}$
3 0·36	9 13·19	15 $12\frac{42}{100}$	21 $5\frac{643}{1000}$	27 50	33 $\frac{5}{100}$
4 2·007	10 5·006	16 $6\frac{901}{1000}$	22 $3\frac{2}{100}$	28 $\frac{8}{10}$	34 $\frac{7}{10}$
5 1·539	11 0·147	17 $4\frac{6}{100}$	23 $16\frac{317}{1000}$	29 $\frac{8}{100}$	35 4
6 8·98	12 6·053	18 $9\frac{548}{1000}$	24 $2\frac{49}{100}$	30 $\frac{2}{1000}$	36 $\frac{6}{100}$

C