Rounding decimals

Show the position of each number on the number line. Use the number line to round these decimals to the nearest whole number.

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α) 7.2







Explain to a partner how to round decimal numbers to the nearest whole number.



decimal place.





- a) When rounding to the nearest tenth, how many digits will there be after the decimal point?
 - **b)** Round each number to one decimal place.









6

5

3

Here are the weights in kilograms of some parcels.

1.42 kg



3.48 kg







1.03 kg

	a) Round the weight of each parce
	kg kg
	b) The weight of each parcel has be
	Is this true or false?
	Talk about it with a partner.
7	Amir is thinking of a number.
	Rounded to the nearest whole his r
	Rounded to the nearest tenth his n
	Write at least four different numbe
	A farmar is building a now fance fo
	Here are the measurements
	89.56 m
	She wants to build a fence around
	Estimate how much fencing you th

Talk about your estimate with a partner.

cel to 1 decimal place.

- g kg
- been rounded to the nearest 100g.



kg



- number is 5
- number is 4.8
- pers that Amir could be thinking of.

for her sheep field.



- d the whole field.
- hink she will need.





Rounding decimals

Show the position of each number on the number line.

Use the number line to round these decimals to the nearest whole number.



Explain to a partner how to round decimal numbers to the nearest whole number.



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Explain to a partner how to round decimal numbers to one decimal place.

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a) Round the weight of each parcel to 1 decimal place.	
3.5 kg 1.4 kg 10.7 kg 1.0 kg	
b) The weight of each parcel has been rounded to the nearest 100g.	
Is this true or false? <u>true</u>	
Talk about it with a partner.	
Amir is thinking of a number.	
Rounded to the nearest whole his number is 5	
Rounded to the nearest tenth his number is 4.8	
Write at least four different numbers that Amir could be thinking of.	
<u>е.д. 4.75, 4.79, 4.8), 4.84</u>	
A farmer is building a new fence for her sheep field. Here are the measurements.	
125.45 m	
She wants to build a fence around the whole field.	
Estimate how much fencing you think she will need. $125 \cdot 5 + 89 \cdot 6 + 125 \cdot 5 + 89 \cdot 6$ $25 + 179 \cdot 2$ $430 \cdot 2m$	
Talk about your estimate with a partner.	



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Order and compare decimals

Which number is greater?

Tick your answer.

т	0	Tth	Hth	Т	0	Tth	Hth
		0.1 0.1	0.01 0.01				0.01 0.01
		0.1	0.01 0.01				
			0.01				

Explain your answer.

2

Which is the smaller number?

Tick your answer.



Explain your answer.

Use place value counters to make each of the numbers.

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3

5

a) Which is the greatest number?

4.13

b) Which is the smallest number? How do you know?

Here are some numbers in a place value chart.

Ones	Tenths	Hundredths	Thousandths
3	2	3	4
3	1	6	
3	2	0	8
3	1	4	5

Write the numbers in order, starting with the greatest.





Mo, Amir, Ron, Teddy and Jack are measuring their heights with a metre rule.



Write the names and heights of the children in order from shortest to tallest.

Name	









Height





It is a decimal number with 2 decimal places that is greater than 2.47 but less than 2.58

	_	
<u>5</u> 10		$2\frac{1}{2}$
	_	
.53		$2\frac{3}{5}$
	_	
<u>80</u> 100		$2\frac{3}{10}$
	-	







Use place value counters to make each of the numbers.

4.13	4.08	5.1	
a) Which is the greatest	number?		5.1
b) Which is the smallest	number?		L-08
How do you know?			



Here are some numbers in a place value chart.

Ones	Tenths	Hundredths	Thousandths
3	2	3	4
3	1	6	
3	2	0	8
3	1	4	5

Write the numbers in order, starting with the greatest.



3.16 3.145



3

Mo, Amir, Ron, Teddy and Jack are measuring their heights with

a metre rule.



Write the names and heights of the children in order from shortest to tallest.

Name	Height
Teddy	l·3m
Ron	1.32 m
MO	1.35 m
Jack	1.5m
Amir	1.52m







3

Shade 15% of the hundred square red. Shade 32% of the hundred square blue.

What percentage of the hundred square is **not** shaded?

Complete the sentence for each diagram.



1









%.

parts out of a



Percentage
82%









a) Is 1% of this bar model shaded? __ Dexter has £1 to spend. 6 He buys some stickers. 1% Explain your reasoning. I got 35p change. What percentage of his money did Dexter spend? b) What percentage of each bar model is shaded? % Aisha and Brett have been selling tickets for the school play. There are 100 seats available. • On Monday they sold 34% of the tickets. • On Tuesday they sold 42 tickets. % How many tickets did they sell on Wednesday? Passengers are boarding a plane. On Wednesday they sold The plane has 100 seats. a) 10% of the seats are already full. Shade 85% of this bar model. How many passengers are already on the plane? b) 15% of the seats have not been booked. How many seats have been booked? Compare answers with a partner. c) How many passengers still need to board the plane?





• By the end of Wednesday, 95% of the tickets had been sold.

tickets.











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Percentages as fractions and decimals



2

Prove that 0.2 is equal to 20%.

You may use the hundred square to help you.

Why do you think some people think that 0.2 is equal to 2%?



Here are four hundred squares.



Complete the table.

Hundred square	Percentage	Fraction	Decimal
А		<u> 52 </u> 100	
В			
С			
D			











d) $\frac{18}{50} = \frac{100}{100} = 100$ | = | **e)** $\frac{13}{25} = \frac{13}{100} = \frac{13}{100}$ = Circle all the fractions that are g 7 <u>10</u> 50 <u>30</u> 80

- Jack and Dora go shopping with 8 Jack spends $\frac{1}{3}$ of his money. Dora spends 30% of her money. a) Who spends more money? ____
 - Use fraction and percentage equivalence to explain your answer.
 - b) Jack and Dora each started with £300 How much money do they each have left?

Jack

9	6
9	6
reater th	nan or equal to 50%.
<u>4</u> 5	<u>50</u> 10
<u>1</u> 50	<u>– 70</u> 14
the sam	e amount of money.

50 100

<u>70</u> 140



Dora





Percentages as fractions and decimals



Complete the table.

1

Hundred square	Percentage	Fraction	Decimal
А	52 */.	<u>52</u> 100	0.52
В	ՂԱ °/ .	24 100	0.24
С	88 ° (,	<u>88</u> 100	0.88
D	100 11	100	l

2

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Prove that 0.2 is equal to 20%.

You may use the hundred square to help you.

1	2	4	5			
1	P	2	2			
Ø	29	2	0			
Ž	2	Ø	2			
	20	2	2			
10	20	2	2			
10	0	20	0			
200	10	2	20			
M	W	2	2			
M	M	N	20			

 $0.2 = 2 \text{ tenths} = \frac{2}{10} = \frac{20}{100}$ $20\% = \frac{20}{100}$

Why do you think some people think that 0.2 is equal to 2%?

3

Complete the fraction, decimal and percentage equivalents.















 $\frac{4}{5}$













B Jack and Dora go shopping with the same amount of money. Jack spends $\frac{1}{3}$ of his money.

Dora spends 30% of her money.

a) Who spends more money? ______

Use fraction and percentage equivalence to explain your answer.

 $\frac{1}{3} = \frac{10}{30}$ $30\% = \frac{3}{10} = \frac{9}{30}$

b) Jack and Dora each started with £300 How much money do they each have left?



Dora (210)





raction	Decimal	Percentage

ndredths	Decimal		
100			
<u>50</u> 100			
	0.75		



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a) What percentage of children do not have brown or blonde hair?

 $\frac{1}{4} = 25\% = \frac{25}{100} = \frac{250}{1000}$





%







a) What fraction, decimal and percentage of the hundred square is shaded?

Hundred square	Fraction	Decimal	Percentage
	<u> </u> 4	0.25	25%
	<u> </u> 2	0.5	50%
	<u>3</u> 4	0-75	75%

Compare answers with a partner.

Did you get the same answers?

Did you simplify any of your answers?

b) Complete the table.

Ougrters	Hundredths	Decimal
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
$\frac{1}{4}$	25 100	0-25
4	<u>50</u> 100	0.5
- <mark>3</mark> - 4	<u>75</u> 100	0.75

Use the diagram to help you complete the equivalence statements. Dora is doing a school survey. 4 6 She compares how many children wear glasses in Class 4 and 100 % Class 5 • $\frac{1}{5}$ of the children in Class 4 wear glasses. 50% 50% • 25% of the children in Class 5 wear glasses. 20% 20% 20% 20% 20% • Both classes have the same number of children. 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% olans 5 Which class has more children who wear glasses? Explain your reasoning. a) 1 whole = c) $\frac{1}{10}$ 10 % % 5 = 20% 25% > 20% 100 0 3 % % 50 0.3 20 $\frac{7}{10}$ % % 70 6.7 20 There are 30 children in Class 5 • $\frac{2}{5}$ have brown hair. $\frac{1}{10} =$ <u>9</u> 10 % 0.9 90 % • 50% have blonde hair. a) What percentage of children do not have brown or blonde hair? b) % 20 O 40 % b) What information did you not need to know to work out % 60 the answer? number or children % .8 80 0 <u>5</u> 5 % 100 = = $\frac{1}{4} = 25\% = \frac{25}{100} = \frac{250}{1000}$ 8 Use this fact to convert $\frac{1}{8}$ and $\frac{3}{8}$ to decimals. Filip gets some money for his birthday. 5

60

%

He spends $\frac{2}{5}$ of his money and saves the rest. What percentage does he save?

 $\frac{3}{8} = 0.375$

 $\frac{1}{8} =$

0.125

%

10

