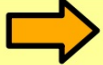


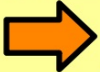
Lesson 1 - WALT: recap our knowledge of place value



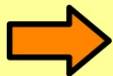
Lesson 2 WALT: explore place value with a decimal point.



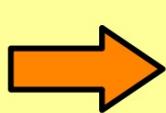
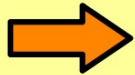
Lesson 3 WALT: round whole numbers



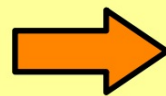
Lesson 4 WALT: round with decimals



Lesson 5 problem solving /games



Rounding
Decimals



Problem
Solving

WEEK 13 - MATHS



Rapid Grasper

Shows where our GD
can start.



Marking Priorit

Best work to indepth
mark

Lesson 1

Today, we are going to use
our knowledge of place value.

Lesson 1

WALT: recap our knowledge of place value

Vocabulary

ones

hundreds

thousands

tenths

hundredths

ten times the size

equivalent

WALT: recap our knowledge of place value

Can you remember the lightbulb moments from before Easter?

What were they?



I is times the size of

What other related knowledge have we got?

WALT: recap our knowledge of place value

Can you remember the lightbulb moments from before Easter?

What were they?

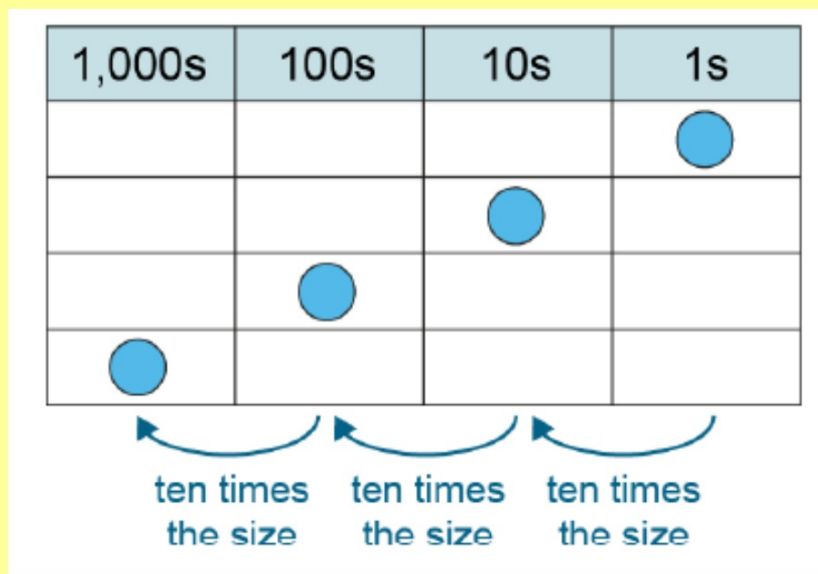


1000 is 10 times the size of 100

1 is 10 times the size of 0.1

What other related knowledge have we got?

WALT: recap our knowledge of place value



Vocabulary

ones
hundreds
thousands
tenths
hundredths
ten times the size
equivalent

How can we use the diagram to explain the lightbulb moment?

1000 is 10 times the size of 100

WALT: recap our knowledge of place value

What does this visual represent?

1000



Vocabulary

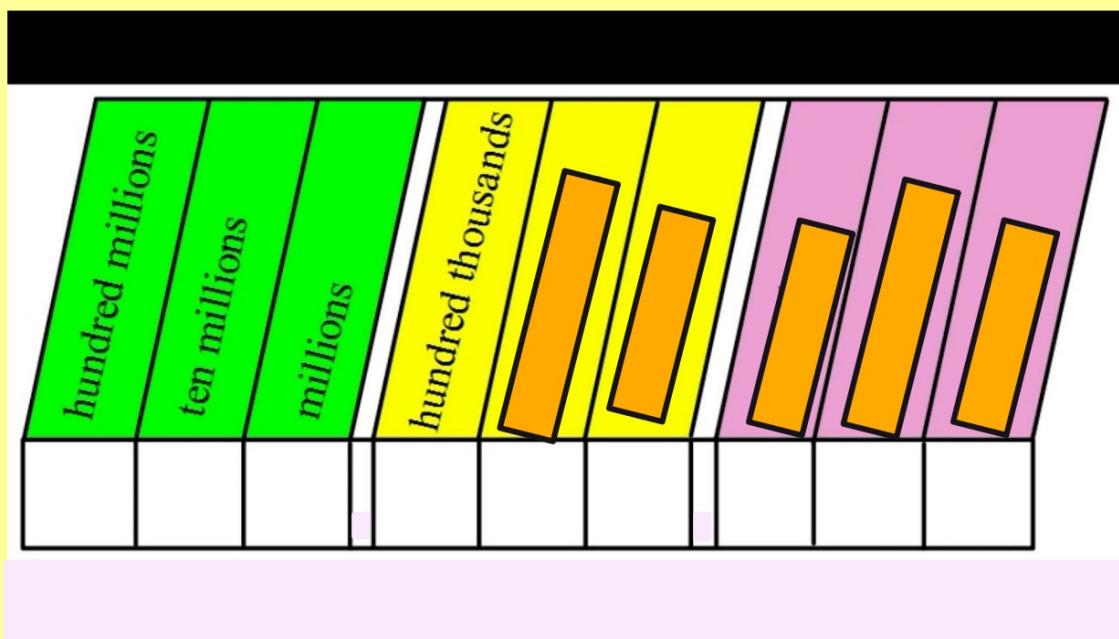
ones
hundreds
thousands
tenths
hundredths
ten times the size
equivalent

The number represented is 1800

This is 10 lots of 100
and 8 more lots of 100

1000

WALT: recap our knowledge of place value



What's the missing place value headings?

What happens when we make 10 of one of them?

WALT: recap our knowledge of place value

	hundred millions	ten millions	millions		hundred thousands	ten thousands	thousands		hundreds	tens	ones



What's the missing place value headings?

What happens when we make 10 of one of them?

WALT: recap our knowledge of place value

1000
100 10 1
6734

Three tens or 30

10 1 0.1 1/100
67.69

Nine hundredths or 0.09

You have 2 minutes to try and solve as many of these questions as you can:

What is the place value for each of the underlined digits:

Vocabulary

ones
hundreds
thousands
tenths
hundredths
ten times the size
equivalent

YOU DO

1) 5426

2) 8635

3) 8634

4) 6955

5) 3799

6) 85.28

7) 9884.77

8) 96.27

9) 958.14

10) 5569

WALT: recap our knowledge of place value

Challenge:

Write down all the numbers with the digit 5 in the tenths column.

Mega challenge:

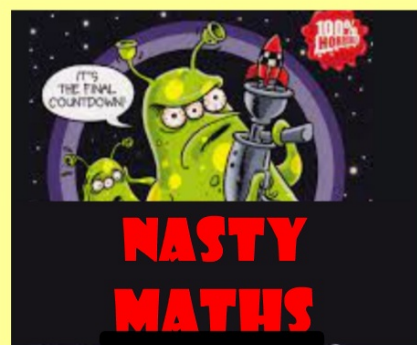
Write down all the numbers that are equal to a **whole number** of tenths

5.26 6

9.5

2 2.52

1 6.47



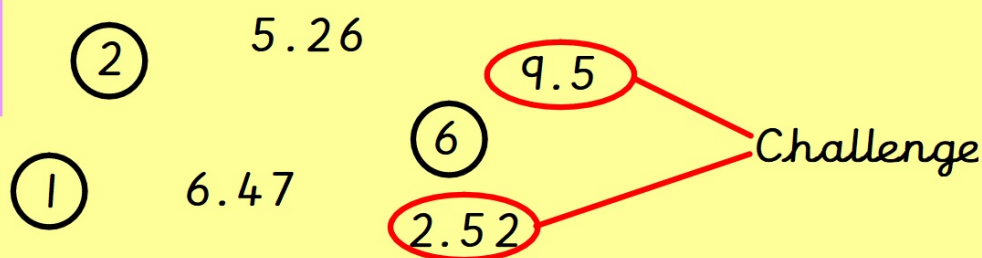
Vocabulary

ones
hundreds
thousands
tenths
hundredths
ten times the size
equivalent

WALT: recap our knowledge of place value

Mega challenge:

Teacher to explain



If you correctly answered all of the mega challenge question, move on to the class questions.

If you did not answer all the mega challenge correctly, stay with me to learn more.

Class questions - see next slide!

REASON AND PEER MARK FOR EVERY QUESTION!

WALT: recap our knowledge of place value

Write down all the numbers that are equal to a whole number of tenths

You need to look at the numbers and select the numbers that have a whole number of tenths

Tens	Ones	Tenths	Hundredths

2.56

96.23

2.1

5

78

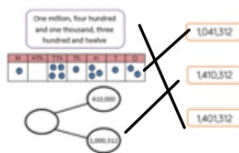
A reminder about presentation!

This is a page in your book

05/09/2018

WALT order and compare numbers

Match the representation to the numbers in digits.



(Any workings
would go here,
alongside my
question)

I linked the dots to the top number
as it was the only one that had a 0
in the HTH column, which matched
the image.

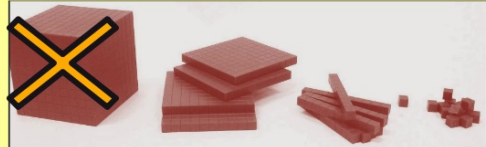
06/09/2018

WALT reason and problem solve

WALT: recap our knowledge of place value



1) You need to make the number 6213 but have no 10s - what would you use instead?

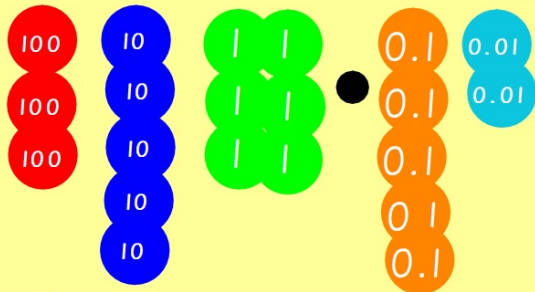


2) How would you make the number 6637 without any 1000s?

Is there more than 1 way?



3) How would you make 8634 without any 100s or 10s?



4) How would you make 356.52

a) without any 1s?

b) without any tenths?

What would you use if there were no 1s or tenths?

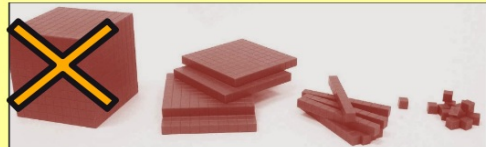


WALT: recap our knowledge of place value



1) You need to make the number 6213 but have no 10s.

Use 10 ones plus 3



2) How would you make the number 6637 without any 1000s?

Is there more than 1 way?

6000 \times 1s

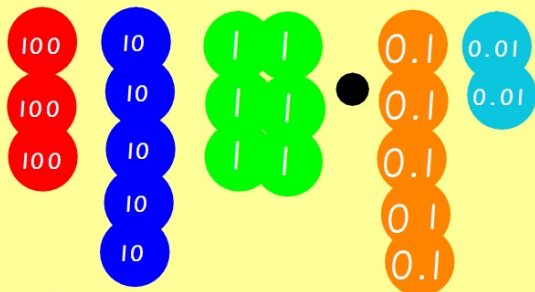
600 \times 10s

60 \times 100s



3) How would you make 8634 without any 100s or 10s?

Use 630 ones plus 4



4) How would you make 356.52

a) without any 1s? Use 60 tenths

b) without any tenths? Use 50 hundredths

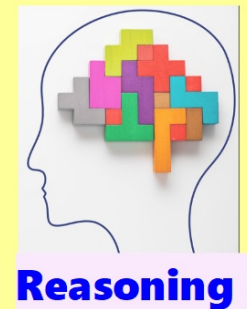
What would you use if there were no 1s or tenths?

Use 650 hundredths



Fluency

WALT: recap our knowledge of place value



Reasoning in maths is the process of applying logical and critical thinking to a mathematical problem in order to work out the correct strategy to use (and as importantly, not to use) in reaching a solution.

Reasoning is sometimes seen as the glue that bonds pupils' mathematical skills together; it's also seen as bridging the gap between fluency and problem solving, allowing pupils to use their fluency to accurately carry out problem solving.

WALT: recap our knowledge of place value

I DO

Write the missing number in the sequence

273 001 283 001 293 001



Metacognition



Understand - what is the question asking us?



Reflect - what maths knowledge do I already have?



Draw it - bar model, part/whole. number line...

What is the value of the digit 9 in the number

697 432 ?

Circle the correct answer.

nine thousand nine hundred ninety thousand

nine million nine hundred thousand



**Reasoning
YOU DO**

Write the missing numbers.

4000

is one thousand **less** than

2000

is one hundred **more** than

Write these masses in order, starting with the **lightest**.

1.25 kg 0.99 kg 1.025 kg 0.009 kg

kg

kg

kg

kg

lightest

(a) In the number **4378**, the figure 7 represents 7 **tens**.
What does the figure **3** represent?

Write these numbers in order of size, starting with the **smallest**.

1.9 0.96 1.253 0.328

smallest

What does the figure **4** represent?

(b) Write in figures the number **twenty thousand and twenty**.

What is the value of the digit 9 in the number

697 432 ?

Circle the correct answer.

nine thousand

nine hundred

ninety thousand

nine million

nine hundred thousand



Reasoning
YOU DO

Write these masses in order, starting with the **lightest**.

1.25 kg

0.99 kg

1.025 kg

0.009 kg

0.009 kg

0.99 kg

1.025 kg

1.25 kg

lightest

Write these numbers in order of size, starting with the **smallest**.

1.9

0.96

1.253

0.328

0.328

0.96

1.253

1.9

smallest

Write the missing numbers.

4000

is one thousand **less** than

300

2000

is one hundred **more** than

210

the number **4378**, the figure 7 represents 7 **tens**.
Does the figure **3** represent?

hundred

What does the figure **4** represent?

thousand

(b) Write in figures the number **twenty thousand and twenty**.

20 020

Plenary

Order the numbers starting with the **largest**.
Match each number with its order.

1,009,909

1st

largest

1,023,065

2nd

1,009,099

3rd

1,230,650

4th

smallest

M	HTh	TTh	Th	H	T	O

Lesson 2

Lesson 2

WALT: explore place value with a decimal point.

Yesterday, we focused on numbers to the left of the decimal point.

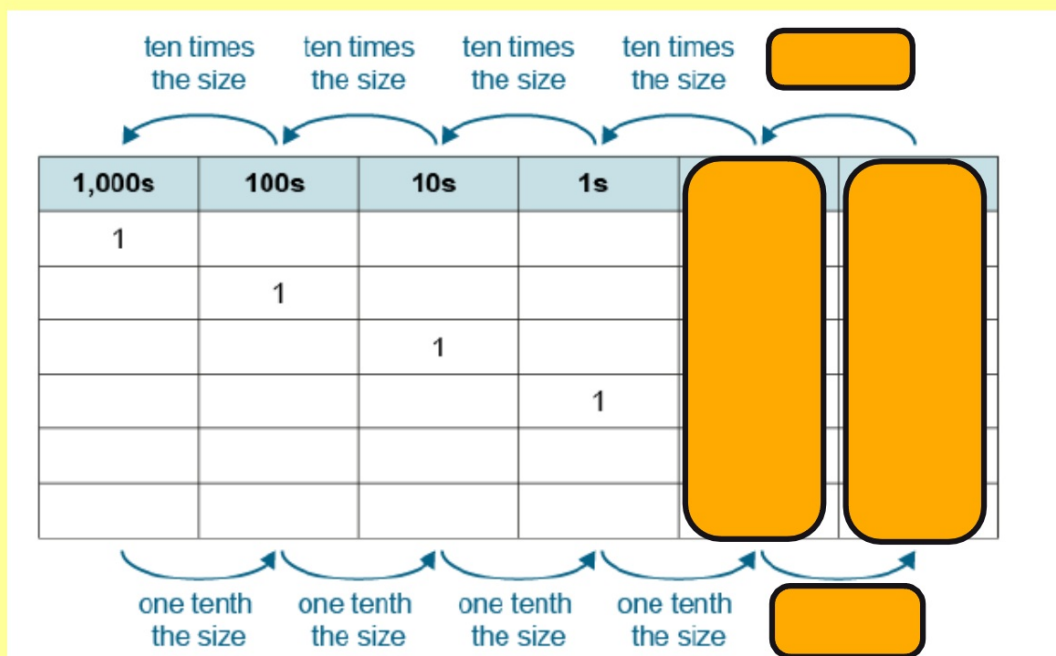
Today, we are going to focus on numbers to the right of the decimal point.

What words/phrases could we add to our vocabulary?

Vocabulary

ones
hundreds
thousands
tenths
hundredths
ten times the size
equivalent

WALT: explore place value with a decimal point.



Vocabulary

ones
hundreds
thousands
tenths
hundredths
ten times the size
equivalent

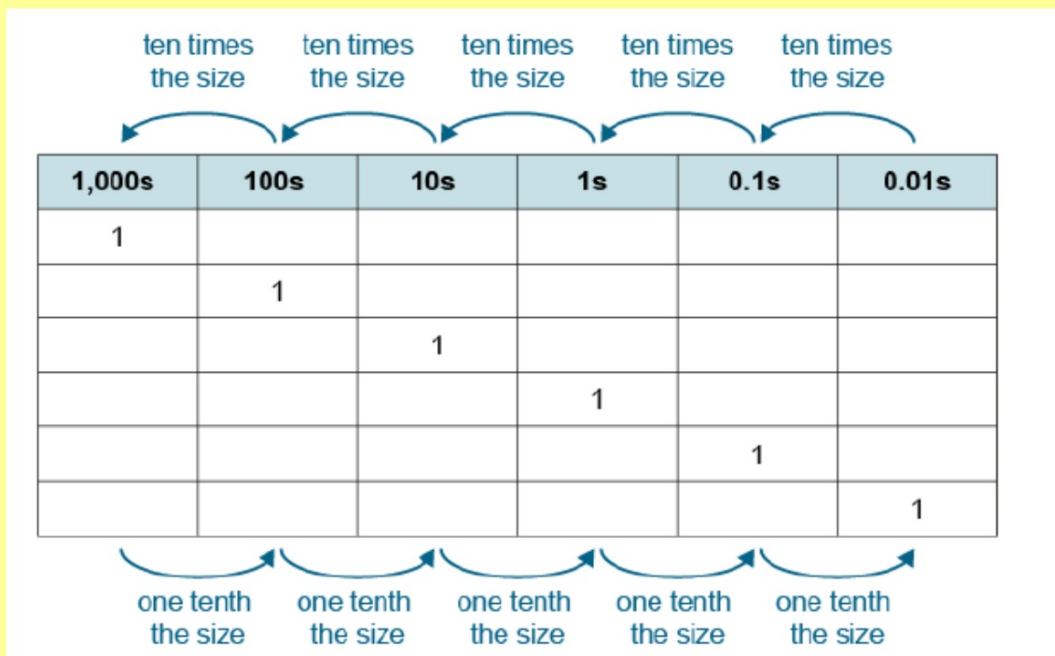
What
was it?



What do you remember about this diagram?

What do you think is behind the blocks?

WALT: explore place value with a decimal point.



Vocabulary

ones
hundreds
thousands
tenths
hundredths
ten times the size
equivalent

What
was it?

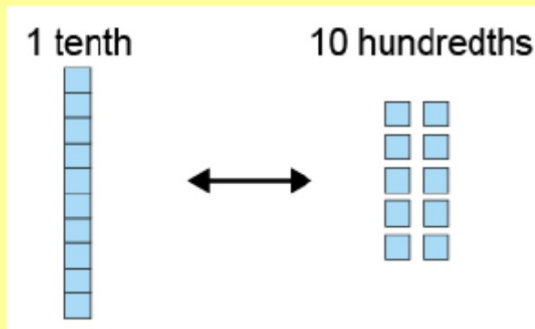


What do you remember about this diagram?

What do you think is behind the blocks?

WALT: explore place value with a decimal point.

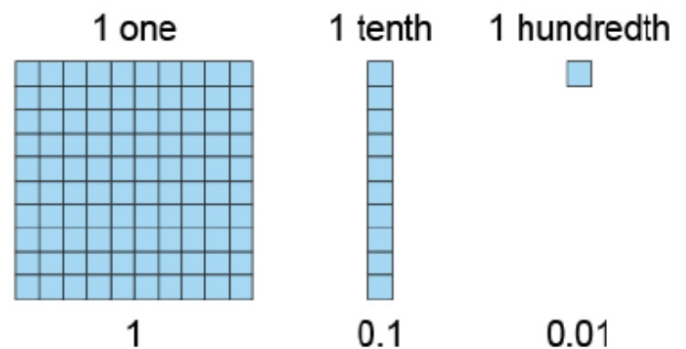
There are 10 hundredths in 1 tenth.



Vocabulary

ones
hundreds
thousands
tenths
hundredths
ten times the size
equivalent

What does this picture show?



Just like there are....

10 _____ in _____

AND

10 _____ in _____

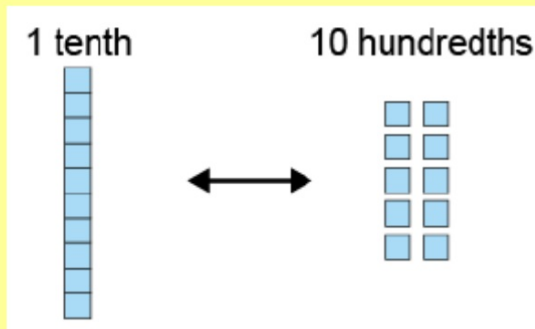
AND

10 _____ in _____



WALT: explore place value with a decimal point.

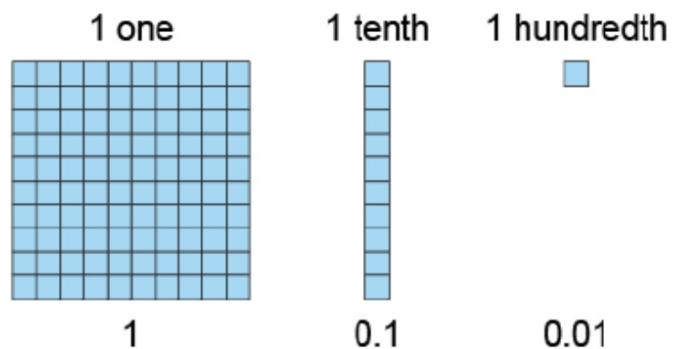
There are 10 hundredths in 1 tenth.



Vocabulary

ones
hundreds
thousands
tenths
hundredths
ten times the size
equivalent

What does this picture show?



Just like there are....

10 _____ in _____

AND

10 _____ in _____

AND

10 _____ in _____

"10 tenths is equal to 1 one."

"10 hundredths is equal to 1 tenth."

"100 hundredths is equal to 1 one."

WALT: explore place value with a decimal point.

Vocabulary

ones
hundreds
thousands
tenths
hundredths
ten times the size
equivalent

What is the place value for each of the underlined digits:

10 | 1 | 0 | 1 | 10 | 100
67.69

I DO

125.21

WE DO

8685.1

YOU DO

THOUSANDS			ONES		DECIMALS			
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths
6	5	8	4	7	9	1	0	3
							2	4

5921.88

YOU DO



Metacognition

WALT: explore place value with a decimal point.

The table shows how far some children jumped in a long-jump competition.



Challenge:

1) Who jumped the furthest and won the race?

Prove it.

Name	Distance jumped (m)
Jamal	3.5
Reyna	3.02
Faisal	2.75
Ilaria	3.18
Charlie	2.8
Kagendo	3.08

Mega challenge:

1) Who came third in the competition?

Prove it.

Challenge:

1) Who jumped the furthest and won the race?

Jamal

Name	Distance jumped (m)
Jamal	3.5
Reyna	3.02
Faisal	2.75
Ilaria	3.18
Charlie	2.8
Kagendo	3.08

Mega challenge:

1) Who came third in the competition?

Kagendo

If you correctly answered all of the mega challenge question, move on to the class questions.

If you did not answer all the mega challenge correctly. stay with me to learn more.

Class questions - see next slide!

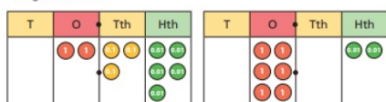
REASON AND PEER MARK FOR EVERY QUESTION!

Order and compare decimals



- 1 Which number is greater?

Tick your answer.



Explain your answer.

- 2 Which is the smaller number?

Tick your answer.



Explain your answer.

- 3 Use place value counters to make each of the numbers.

4.13

4.08

5.1

- a) Which is the greatest number?

- b) Which is the smallest number?

How do you know?

- 4 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.

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

Mo	Amir	Ron	Teddy	Jack
1.35 m	1.53 m	1.32 m	1.3 m	1.5 m

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

Name	Height

© White Rose Maths 2019

You are going to have 15 minutes to have a go with your fluency

If you are still unsure, stay with me



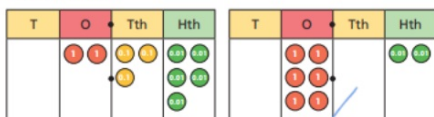
Fluency

Order and compare decimals

White
Rose
Maths

- 1 Which number is greater?

Tick your answer.



Explain your answer.

It has more tenths.

- 2 Which is the smaller number?

Tick your answer.



Explain your answer.

It has fewer tenths.

- 3 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?

4.08

How do you know?

- 4 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.

3.234

3.208

3.16

3.145

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

Mo	Amir	Ron	Teddy	Jack
1.35 m	1.53 m	1.32 m	1.3 m	1.5 m

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

Name	Height
Teddy	1.3m
Ron	1.32m
Mo	1.35m
Jack	1.5m
Amir	1.53m

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ANSWERS

Fluency



Fluency



Reasoning

*Now we've spent
some time
practising the skills...*

*...we can start
to use them.*

WALT: explore place value with a decimal point.

I DO

Alex and Dora are competing in the long jump.

Alex jumps 1.5m and Dora jumps 1.45m

I win because
45 is greater
than 5



a) Is Dora correct? _____

Talk about it with a partner.



Understand



Reflect



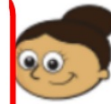
Draw it - bar model, part/whole. number line....

WALT: explore place value with a decimal point.

WE DO

Alex and Dora are comparing the length of their gardens. Alex's is 12.35m long and Dora's is 12.4m long.

Alex's garden is longer because 35 is greater than 4.



a) Is Dora correct? _____

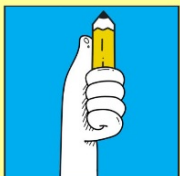
Talk about it with a partner.



Understand



Reflect



Draw it - bar model part/whole number line

YOU DO

- 6 Alex and Dora are competing in the long jump.
Alex jumps 1.35 metres and Dora jumps 1.4 metres.

Alex wins because 35
is greater than 4



- a) Is Dora correct? _____

Talk about it with a partner.

- b) Kim joins in the competition.

What is the shortest distance she can jump to go into the lead?

- 7 Write the numbers in ascending order.

- a) 0.45 0.654 0.546 0.405

--	--	--	--

- b) 7.2 kg 7.212 kg 7.21 kg

--	--	--

- c) 25.391 25.309 25.093 25.193

--	--	--	--

- 8 Dexter is thinking of a number.



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

What possible numbers could Dexter be thinking of?

- 9 Tick the numbers that are equal to 2.5

Circle the numbers that are greater than 2.5

You will need to convert the mixed numbers to decimal numbers first.

2.05	$2\frac{5}{10}$	$2\frac{1}{2}$
$2\frac{5}{100}$	2.53	$2\frac{3}{5}$
2.501	$2\frac{80}{100}$	$2\frac{3}{10}$

GD be ready to
teach the class
No 9.

Plenary:



Understand



Reflect



Draw It

9

Tick the numbers that are equal to 2.5

Circle the numbers that are greater than 2.5

You will need to convert the mixed numbers to decimal numbers first.

2.05

$2\frac{5}{10}$

$2\frac{1}{2}$

$2\frac{5}{100}$

2.53

$2\frac{3}{5}$

2.501

$2\frac{80}{100}$

$2\frac{3}{10}$

GD to teach us

Lesson 3

Today, we shall be rounding whole numbers

Lesson 3

WALT: round whole numbers

Rounding - what is it and why do we do it?

1) What is it?

Rounding a number means to bring the value of a number up or down depending on what you're trying to round the number to.

Vocabulary

Rounding

Why do we do it?



It helps us understand big numbers - when we have lots of something like people in a crowd or sweets, or the distance from one place to another.

We could say that the moon is about or around 200,000 miles away rather than two hundred and thirty eight thousand, eight hundred and fifty-five miles away.

Rounding

Why do we do it?



It's also great for time.
The taxi arrived at around 10 o'clock rather than at 9.54am and 11 seconds!

We often use rounding in shops. The item costs 29p. I don't have exactly 29p but I could round it up to 30p and then get change!



Of course, with somethings we have to round up.
The shopkeeper isn't going to accept 20p if the item was 21p and I didn't have a 1p.

How to round numbers

Part of **Maths** | **Rounding and estimating**

+ Add to My Bitesize

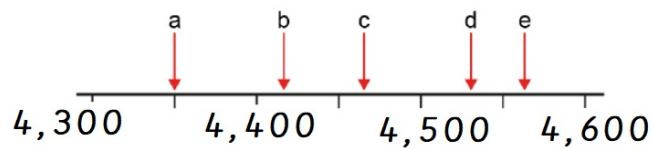


Watch



Play the game

Challenge:



- Which 2 numbers round to **4,500** when rounded to the nearest hundred?
- Round each number to the nearest thousand.
- Estimate the value of each number.

Mega challenge:



Challenge:

Mega challenge:

- 1) c and d
- 2) a, b and are 4000
d and e are 5000
- 3) a- 4350 b- 4420
c- - 4460 d- 4530
e- 4560

If you correctly answered all of the mega challenge question, move on to the class questions.

If you did not answer all the mega challenge correctly, stay with me to learn more.

Class questions - see next slide!

REASON AND PEER MARK FOR EVERY QUESTION!

A

Round to the nearest 10.

- 1 253
2 697
3 129
4 461
5 575

- 6 4382
7 1718
8 3234
9 2945
10 5806

Round to the nearest 100.

- 11 368
12 241
13 773
14 135
15 917

- 16 3864
17 2526
18 9489
19 1652
20 8085

Round to the nearest:

a) 10 b) 100.

- 21 3572
22 2825
23 7439
24 4714
25 6157

- 26 8348
27 5093
28 9265
29 1681
30 7976

B

Round to the nearest:

10

- 1 4628
2 7173
3 25385
4 38706
5 106242
6 391959

100

- 7 3818
8 47072
9 15360
10 30249
11 572651
12 180434

1000

- 13 21930
14 53285
15 15817
16 169542
17 330496
18 476700

10 000

- 19 63742
20 96280
21 51863
22 209000
23 672590
24 895014

100 000

- 25 872000
26 647926
27 380138
28 154071
29 935295
30 561302

C

Round to the nearest:

a) 10 b) 100.

- 1 75338
2 10843
3 104096
4 832525
5 3543277

Round to the nearest:

a) 100 b) 100 000.

- 6 362740
7 219265
8 545508
9 173491
10 497080

- 11 1821934
12 5984360
13 4606192
14 7938504
15 2050800

Round to the nearest:

a) 100 000 b) 1 000 000.

- 16 1683000
17 5461750
18 2839067
19 3270200
20 7954003

Set A:

1)250 6)4380 11)400 16)3900 21)3570&3600 26)8350&8300
2)700 7)1720 12)200 17)2500 22)2830&2800 27)5090&5100
3)130 8)3230 13)800 18)9500 23)7440&7400 28)9270&9300
4)460 9)2950 14)100 19)1700 24)4710&4700 29)1680&1700
5)580 10)5800 15)900 20)8100 25)6160&1200 30)7980&8000

Set B:

1)4,630 7)3,800 13)22,000 19)60,000 25)900,000
2)7,170 8)47,100 14)53,000 20)100,000 26)600,000
3)25,390 9)15,400 15)16,000 21)50,000 27)400,000
4)38,710 10)30,200 16)170,000 22)210,000 28)200,000
5)106,240 11)572,700 17)330,000 23)670,000 29)900,000
6)391,960 12)180,400 18)467,000 24)900,000 30)600,000

Set C:

40&75,300 7)219,300&200,000 13)4,606,200&4,600,000 19)3,300,000
40&10,800 8) 545,500&500,000 14)7,938,500&8,000,000 20)8,000,000
,100&104,100 9)173,500&200,000 15)2,050,800&2,100,000
,530&832,500 10)497,100&500,000 16)1,700,000&2,000,000
43,280&3,543,300 11)1,821,900&1,800,000 17)5,500,000&5,000,000
,700&400,000 12)5,984,400&6,000,000 18)2,800,000&3,000,000



Fluency

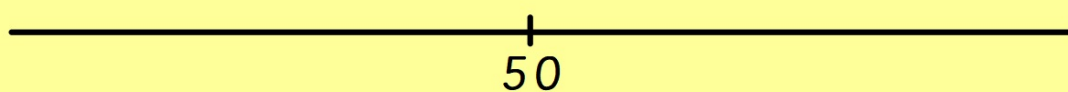
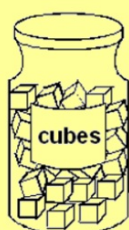


Reasoning

*Now we've spent
some time
practising the skills...*

*...we can start
to use them.*

Q4. Five children estimated how many cubes were in the jar.



53	47	59	99	154
----	----	----	----	-----

There were exactly 50 cubes.

Tick (✓) the estimate which was the nearest.



Understand

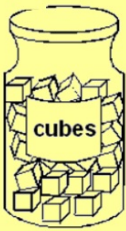


Communicate



Reflect

1 Five children estimated how many cubes were in the jar.



40	46	58	100	164
----	----	----	-----	-----

There were exactly 50 cubes.

Tick (✓) the estimate which was the nearest.

2 Complete this table to show the numbers rounded to the nearest 100.
One has been done for you.

	rounded to the nearest hundred
316	300
3162	
31628	
316281	

3 Circle the number that is **about** the same as the correct answer to $49 + 48$.

Do **not** work out the exact answer.

10 50 40 100 70 200

4 Amy chooses two of these cards.

11	23	33	43
----	----	----	----

She adds the numbers on her two cards together.
She rounds the result to the nearest 10

Her answer is 60

Which two cards did Amy choose?

 and

1 mark

5 Runa and Jon each start with the same number.

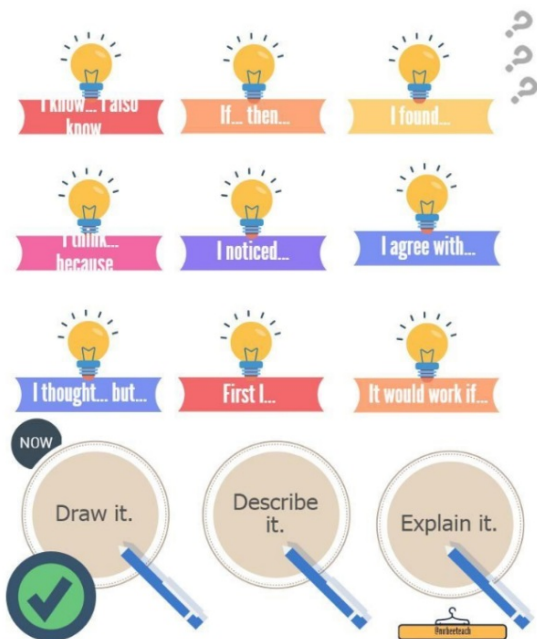
Runa rounds the number to the nearest hundred.

Jon rounds the number to the nearest ten.

Runa's answer is double Jon's answer.

Explain how this can be.

Mastery and reasoning.



What am I doing?

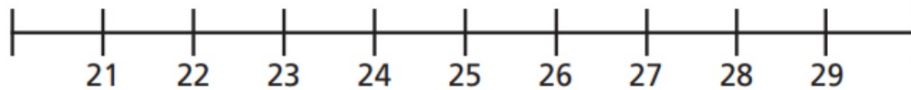
'Why am I doing this?'

'How does it help me?'

Need reasoning answers

Teacher Group

- a) Which multiples of 10 do the numbers sit between?
Complete the number line.



- b) Circle the number 27

Which multiple of 10 is 27 closest to?

27 rounded to the nearest 10 is

- c) Circle the number 23

Which multiple of 10 is 23 closest to?

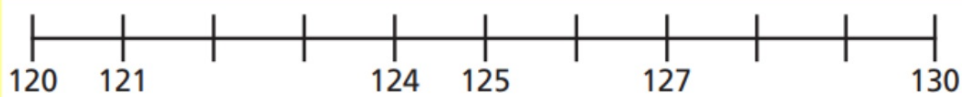
23 rounded to the nearest 10 is

Rounding to 10

- 1) 23
- 2) 53
- 3) 55
- 4) 28
- 5) 78

(Rounding to 10s within 10s)

Teacher Group



a) Are these numbers closer to 120 or 130?

121 is closer to than

124 is closer to than

127 is closer to than

125 is the same distance from as it is from

b) Round each number to the nearest 10

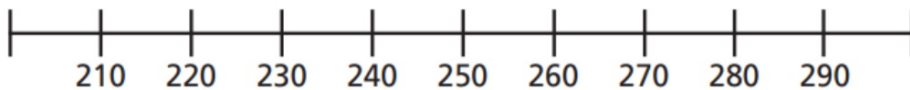
121 124 127 125

(Rounding to 10s within 100s)

Teacher Group

Rounding to 100

- a) Which multiples of 100 do the numbers sit between?
Complete the number line.



- 1) 230
- 2) 530
- 3) 270
- 4) 870
- 5) 250

- b) Circle the number 270 on the number line.

Which multiple of 100 is 270 closest to?

270 rounded to the nearest 100 is

- c) Circle the number 230 on the number line.

Which multiple of 100 is 230 closest to?

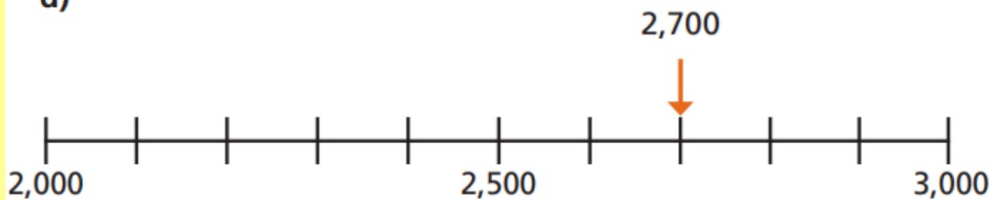
230 rounded to the nearest 100 is

(Rounding to 100s within 100s)

Teacher Group

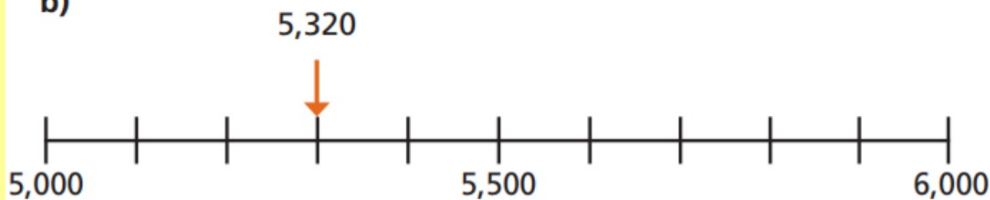
Use the number lines to help you round.

a)



2,700 rounded to the nearest 1,000 is

b)



5,320 rounded to the nearest 1,000 is

Round to nearest 1000

1) 2100

2) 2178

3) 5178

4) 2800

5) 7855

(Rounding to 1000s within 1000s)

Plenary

Match up Maths



Lesson 4

WALT rounding with decimals

Challenge:

I need 6.4 metres of ribbon.

- How much is this to the nearest one metre?
- If ribbon is sold only in whole metres, how many metres do I need to buy?



Mega challenge:

I need **6.35** metres of ribbon.

- How much is this to the nearest tenth of a metre?
- How much is this to the nearest metre?
- If ribbon is sold only in whole metres, how many metres do I need to buy?

Challenge:

- a) 6metre
- b) I would need to buy
7 metres

Mega challenge:

- a) 6.4metres
- b) 6metres
- c) 7metres

If you correctly answered all of the mega challenge question, move on to the class questions.

If you did not answer all the mega challenge correctly, stay with me to learn more.

Class questions - see next slide!

REASON AND PEER MARK FOR EVERY QUESTION!

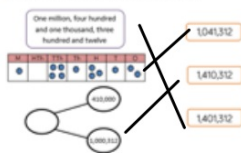
PERFECT presentation!

This is a page in your book

05/09/2018

WALT order and compare numbers

Match the representation to the numbers in digits.



(Any workings
would go here,
alongside my
question)

I linked the dots to the top number as it was the only one that had a 0 in the HTH column, which matched the image.

06/09/2018

WALT reason and problem solve

Clear date
and WALT
underline with a
ruler!

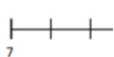
Rule off your
previous work
and use up the
space!

Rounding decimals



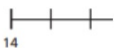
- 1 Show the position of each number on the number line.
Use the number line to round these decimals to the nearest whole number.

a) 7.2



The nearest whole number is

b) 14.8



The nearest whole number is

c) 6.5

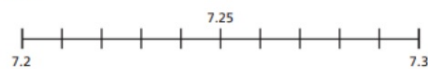


The nearest whole number is

Explain to a partner how you rounded each number to the nearest whole number.

- 2 Use the number line to round these decimal numbers to the nearest tenth and the nearest whole number.

a) 7.23



The nearest tenth is

The nearest whole number is

- 3 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.

1.33

4.03

1.34

4.04

1.35

4.05

1.36

4.06

1.37

4.07

- 4 Round each number to the nearest tenth.

a) 4.21

d) 11.86

g) 12.92

b) 8.09

e) 5.67

h) 10.65

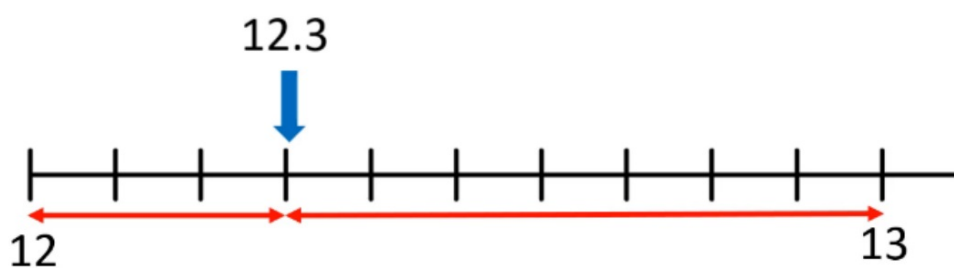
c) 4.84

f) 0.15



Fluency

Teacher Group



The nearest whole number to 12.3 is

12.3 rounded to the nearest whole number is

Mega Challenge

I need 4.25 metres of ribbon.

a. How much is this to the nearest tenth of a metre?

I DO

b. How much is this to the nearest metre?

WE DO

c. If ribbon is sold only in whole metres, how many metres do I need to buy?

WE DO



YOU DO

I need 6.26 metres of ribbon.

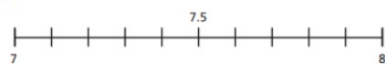
- a. How much is this to the nearest tenth of a metre?
- b. How much is this to the nearest metre?
- c. If ribbon is sold only in whole metres, how many metres do I need to buy?

Rounding decimals

White
Rose
Maths

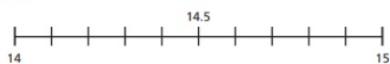
- 1 Show the position of each number on the number line.
Use the number line to round these decimals to the nearest whole number.

a) 7.2



The nearest whole number is **7**

b) 14.8



The nearest whole number is **15**

c) 6.5

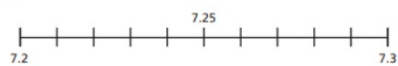


The nearest whole number is **7**

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

- 2 Use the number line to round these decimal numbers to the nearest tenth and the nearest whole number.

a) 7.23



The nearest tenth is **7.2**

The nearest whole number is **7**

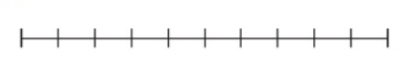
b) 14.56



The nearest tenth is **14.6**

The nearest whole number is **15**

c) 6.45



The nearest tenth is **6.5**

The nearest whole number is **6**

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

© White Rose Maths 2019

ANSWERS



Fluency

- 3 a) When rounding to the nearest tenth, how many digits will there be after the decimal point? 1
- b) Round each number to one decimal place.
- | | |
|---|---|
| 1.33 1.3 | 4.03 4.0 |
| 1.34 1.3 | 4.04 4.0 |
| 1.35 1.4 | 4.05 4.1 |
| 1.36 1.4 | 4.06 4.1 |
| 1.37 1.4 | 4.07 4.1 |
- 4 Round each number to the nearest tenth.
- | | | |
|--|--|--|
| a) 4.21 4.2 | d) 11.86 11.9 | g) 12.92 12.9 |
| b) 8.09 8.1 | e) 5.67 5.7 | h) 10.65 10.7 |
| c) 4.84 4.8 | f) 0.15 0.2 | |

ANSWERS



Fluency



Reasoning

- 5 Circle each decimal that rounds to 6.2

6.32 6.23 6.27 6.17 6.12 6.25

Explain your reasoning.

- 6 Here are the weights in kilograms of some parcels.



3.48 kg



1.42 kg



10.65 kg



1.03 kg

- a) Round the weight of each parcel to 1 decimal place.

kg kg kg kg

- b) The weight of each parcel has been rounded to the nearest 100g.

Is this true or false? _____

Talk about it with a partner.

- 7 Amir is thinking of a number.

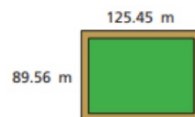
Rounded to the nearest whole his number is 5

Rounded to the nearest tenth his number is 4.8

Write at least four different numbers that Amir could be thinking of.

- 8 A farmer is building a new fence for her sheep field.

Here are the measurements.



She wants to build a fence around the whole field.

Estimate how much fencing you think she will need.

Talk about your estimate with a partner.

- 3 a) When rounding to the nearest tenth, how many digits will there be after the decimal point? 1

b) Round each number to one decimal place.

1.33	1.3	4.03	4.0
1.34	1.3	4.04	4.0
1.35	1.4	4.05	4.1
1.36	1.4	4.06	4.1
1.37	1.4	4.07	4.1

- 4 Round each number to the nearest tenth.

a) 4.21	4.2	d) 11.86	11.9	g) 12.92	12.9
b) 8.09	8.1	e) 5.67	5.7	h) 10.65	10.7
c) 4.84	4.8	f) 0.15	0.2		

- 5 Circle each decimal that rounds to 6.2

6.32 6.23 6.27 6.17 6.12 6.25

Explain your reasoning.

They are greater than 6.15 but less than 6.25

- 6 Here are the weights in kilograms of some parcels.

			
3.48 kg	1.42 kg	10.65 kg	1.03 kg

- 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? true

Talk about it with a partner.

- 7 Amir is thinking of a number.

Rounded to the nearest whole his number is 5

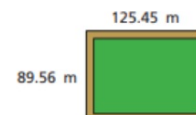
Rounded to the nearest tenth his number is 4.8

Write at least four different numbers that Amir could be thinking of.

e.g. 4.75, 4.79, 4.81, 4.84

- 8 A farmer is building a new fence for her sheep field.

Here are the measurements.



She wants to build a fence around the whole field.

Estimate how much fencing you think she will need.

430.2m

Talk about your estimate with a partner.

Lesson 5

Fluency

Round the Dice Decimals 1

Age 7 to 11
Challenge Level ★



There are two dice, each of them with faces labelled from 1 to 6. When the dice are rolled they can be combined in two different ways to make a number less than 10 with one decimal place.

For example, if I roll a 2 and a 3 I can combine them to make 2.3 or 3.2.

Now round each of these numbers to the nearest whole number: 2.3 rounds to 2 and 3.2 rounds to 3. Repeat for other rolls of the dice.

Do both of the numbers you make ever round to the same whole number?

Round the Dice Decimals 2

Age 7 to 11
Challenge Level ★



There are three dice, each of them with faces labelled from 1 to 6. When the dice are rolled they can be combined in six different ways to make a number less than 10 with two decimal places.

For example, if I roll a 2, a 3 and a 6, I can combine them to make 2.36, 2.63, 3.26, 3.62, 6.23 or 6.32.

Now round each of these numbers to the nearest whole number:
2.36 rounds to 2, 2.63 rounds to 3, 3.26 rounds to 3, 3.62 rounds to 4, 6.23 rounds to 6 and 6.32 rounds to 6.

Repeat for other rolls of the dice.

Can each of the six numbers round to the same whole number?
Can each of the six numbers round to a different whole number?

4 children are measuring their height.

Emily - 1.43 metres
Junaid - 1.47 metres
Lucas - 1.4 metres
Sita - 1.39 metres

Order the children from tallest to shortest.

Sami is taller than Lucas but Shorter than Emily.
How tall could Sami be?

_____ metres

There are 1,000 people at a concert.

481 of the people are men.

What fraction of the people are men?

Write the fraction of men as a decimal.

Which Answer?

What is 53.48 to the nearest whole number?

- (a) 54
- (b) 53.5
- (c) 53

Explain the mistakes.

Rounded to the nearest £10, Alex has £250.

Rounded to the nearest £100, Jim has £400.

Alex and Jim have an exact amount in £ pounds.

What is the greatest possible difference between the amount of money that Alex and Jim have?

Part 1: What is the largest whole number that, when rounded to the nearest 100, is 4000?

Part 2: What is the largest whole number that, when rounded to the nearest 200, is 4000?

How Many Ways?

You have a pile of 0.1 and 0.01 counters.

0.1

0.01

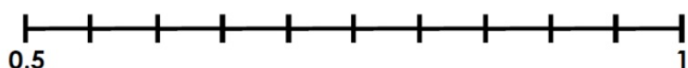
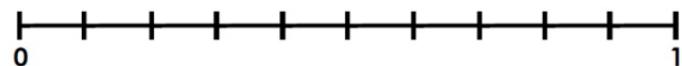
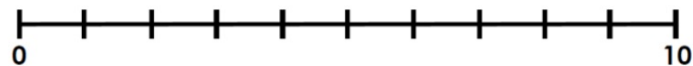
Question 1:

How many ways can 0.42 be made?

Question 2:

How many ways can 0.24 be made?

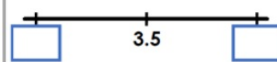
Show the position 0.8 on each number line:



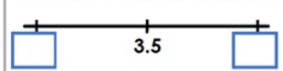
Different Ways

3.5 is half-way between...

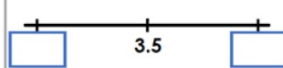
Use 2 decimal place numbers:



Use 1 decimal place numbers:



Use 3 decimal place numbers:



ANSWERS $\frac{481}{1000}$

$$£449 - £245 = £204$$

4 children are measuring their height.

Emily - 1.43 metres
Junaid - 1.47 metres
Lucas - 1.4 metres
Sita - 1.39 metres

Order the children from tallest to shortest.

1.39 1.4 1.43 1.47

Sami is taller than Lucas but Shorter than Emily.
How tall could Sami be?

1.41 metres
or 1.42m

There are 1,000 people at a concert.
481 of the people are men.
What fraction of the people are men?
Write the fraction of men as a decimal.

0.481

Which Answer?

What is 53.48 to the nearest whole number?

- (a) 54
(b) 53.5
(c) 53

Explain the mistakes.

Rounded to the nearest £10, Alex has £250.
Rounded to the nearest £100, Jim has £400.
Alex and Jim have an exact amount in £ pounds.
What is the greatest possible difference between the amount of money that Alex and Jim have?

Part 1: What is the largest whole number that, when rounded to the nearest 100, is 4000?
Part 2: What is the largest whole number that, when rounded to the nearest 200, is 4000?

1) 4049 2) 4099
How Many Ways?

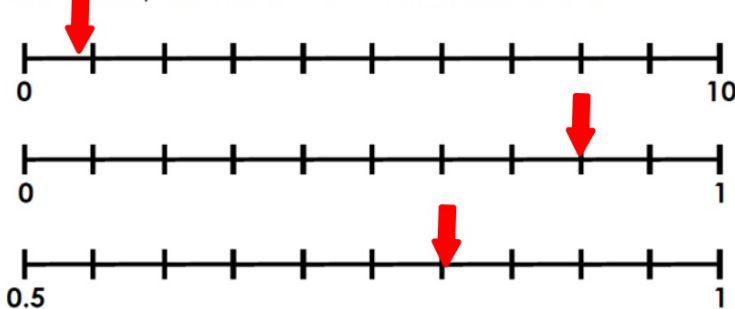
You have a pile of 0.1 and 0.01 counters.

0.1

0.01

Question 1:
How many ways can 0.42 be made?
Question 2:
How many ways can 0.24 be made?

Show the position 0.8 on each number line:

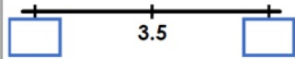


How Many Ways? Q1: 5 ways: 4×0.1 & 2×0.01 3×0.1 & 12×0.01
 2×0.1 & 22×0.01 1×0.1 & 32×0.01 42×0.01
Q2: 3 ways: 2×0.1 & 4×0.01 1×0.1 & 14×0.01 24×0.01

Different Ways EG

3.5 is half-way between...

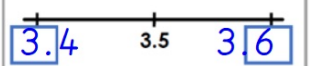
Use 2 decimal place numbers:



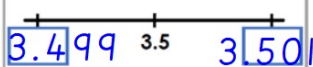
3.49 3.51 3.499 3.501

Depends on what you are counting in - examples are counting in one step.

Use 1 decimal place numbers:



Use 3 decimal place numbers:



ROUNDING DECIMALS

(I)

ROUNDING DECIMALS (1)



ROUNDING DECIMALS (1)

Round the Dice Decimals 1

Age 7 to 11
Challenge Level ★



There are two dice, each of them with faces labelled from 1 to 6. When the dice are rolled they can be combined in two different ways to make a number less than 10 with one decimal place.

For example, if I roll a 2 and a 3 I can combine them to make 2.3 or 3.2.

Now round each of these numbers to the nearest whole number: 2.3 rounds to 2 and 3.2 rounds to 3. Repeat for other rolls of the dice.

Do both of the numbers you make ever round to the same whole number?

Round the Dice Decimals 2

Age 7 to 11
Challenge Level ★



There are three dice, each of them with faces labelled from 1 to 6. When the dice are rolled they can be combined in six different ways to make a number less than 10 with two decimal places.

For example, if I roll a 2, a 3 and a 6, I can combine them to make 2.36, 2.63, 3.26, 3.62, 6.23 or 6.32.

Now round each of these numbers to the nearest whole number:
2.36 rounds to 2, 2.63 rounds to 3, 3.26 rounds to 3, 3.62 rounds to 4, 6.23 rounds to 6 and 6.32 rounds to 6.

Repeat for other rolls of the dice.

Can each of the six numbers round to the same whole number?
Can each of the six numbers round to a different whole number?

Problem Solving (2)

Problem Solving (2)



Metacognition

Rounded to the nearest £10,
Alex has £250.

Rounded to the nearest £100,
Jim has £400

What can you work out?

Problem Solving (2)

Rounded to the nearest £10,
Alex has £50.

Rounded to the nearest £100
Jim has £200

What can you work out?



Understand



Communicate



Reflect





Understand



Reflect



Communicate



Pick a card.
Any card!



What is a
fraction?



What
light
moment?



and one
twelfth?



one eighth
or one quarter?

