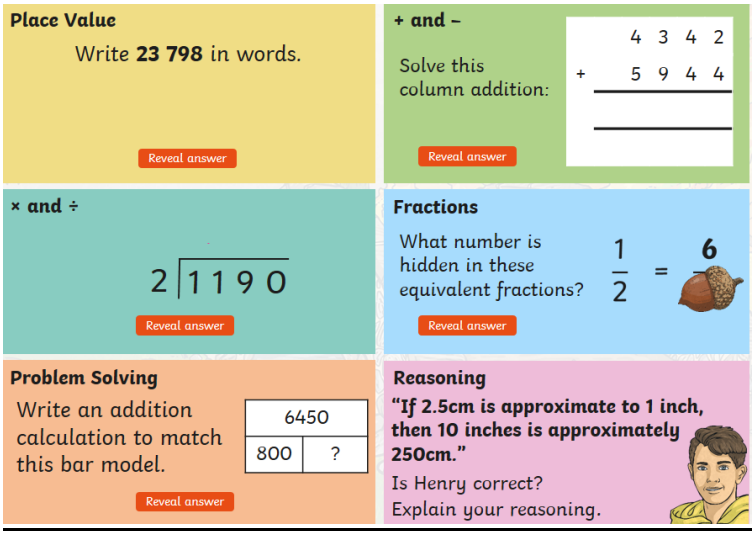
Year 5 Maths Distance Teaching and Learning

Week beginning: 27.4.20

Lesson 1		
Learning Intention: WALT: identify the value of digits within large numbers	Key Vocabulary: place value – how much each digit in a number is worth digit, value, place holder, ones, tens, hundreds, thousands, millions	What you will need: A computer, tablet or phone for the starter Maths book Pencil Ruler Video: Year 5 Maths Lesson 1

Starter

In 5 minutes, try to complete at least 2 of these revision problems. Answers are in the Mark Scheme.



Main Teaching

Watch the video Year 3 Maths Lesson 1, which will show you what to do.

We are going to pick a number and represent it in different ways. We will use the number word mat to help write the numbers as words.

one	six	twenty	seventy
two	seven	thirty	eighty
three	eight	forty	ninety
four	nine	fifty	hundred
five	ten	sixty	thousand
			million

You may find this writing frame useful (pay careful attention to where the commas are placed

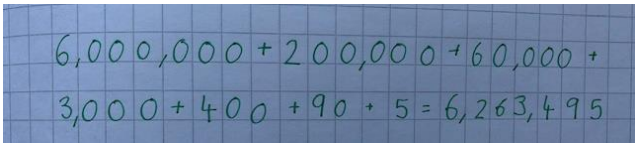
Writing frame
_____ million, _____ hundred and _____ thousand, _____ hundred and _____

Example 1

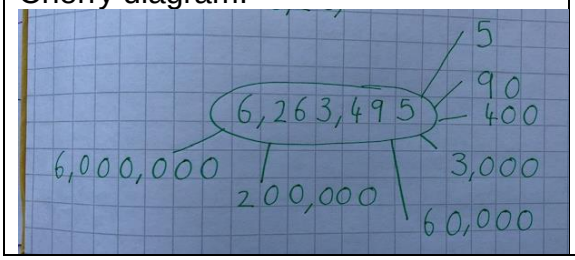
Digits: 6, 263, 495

Words:
Six million, two hundred and sixty three thousand, four hundred and ninety five

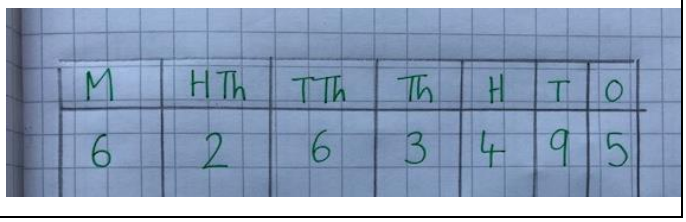
Number sentence:



Cherry diagram:



Place value chart:

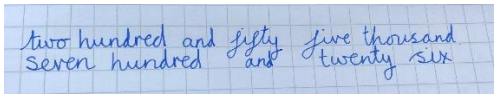


M	HTh	TTh	Th	H	T	O
6	2	6	3	4	9	5

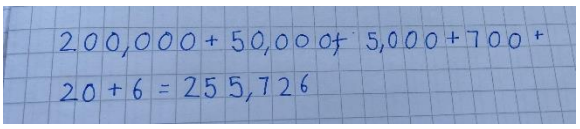
Example 2

Digits: 255,726

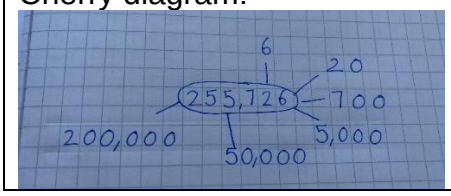
Words:



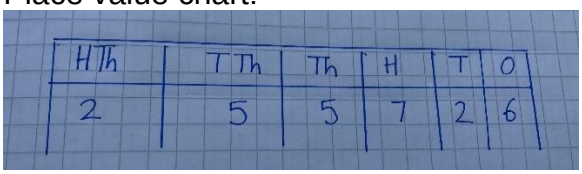
Number sentence:



Cherry diagram:



Place value chart:

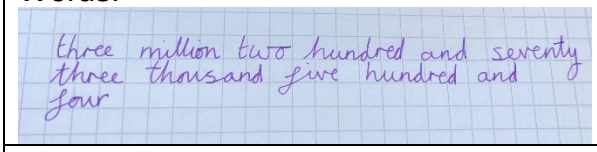


HTh	TTh	Th	H	T	O
2	5	5	7	2	6

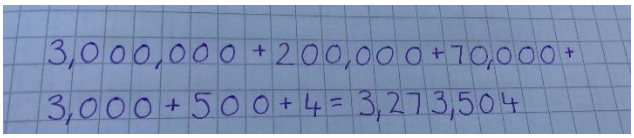
Example 3

Digits: 3,273,504

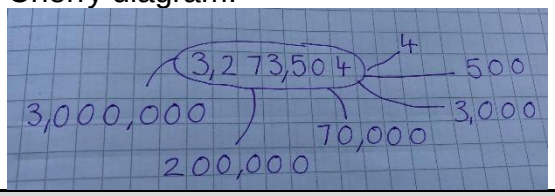
Words:



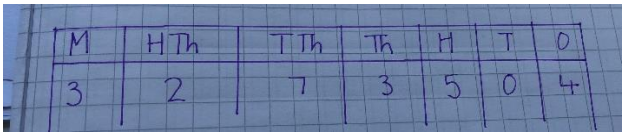
Number sentence:



Cherry diagram:



Place value chart:



M	HTh	TTh	Th	H	T	O
3	2	7	3	5	0	4

Independent Tasks

Please complete 1 or 2 challenges. You can only go on to Challenge X if you have completed Challenge 3 first. If you are finding a challenge too tricky or too easy after 3 questions, you should switch challenges.

After you have completed your challenge, check your answers in the mark scheme. If you got an answer wrong look carefully and identify where you made a mistake.

Challenge 1

Write the value of the digits that are in red.

23,455

34,532

341,043

108,342

Now use a cherry diagram to show each of these numbers.

982,054

6,976,206

Challenge 2

Write these numbers as numerals

Twelve thousand and forty-two

Six hundred and five thousand, four hundred and fifty-four

Eight hundred and fifty-nine thousand and six

Nine million, three thousand and ninety-nine

For each number below write the number as words, a number sentence and a cherry diagram.

458,543

8,503,086

Challenge 3

Spot the mistakes:

5,505 ~ Five thousand, five hundred and fifty

2,400 ~ Twenty-four thousand

3,010,002 ~ Three hundred and one thousand and two

26,030 ~ Twenty-six thousand and thirteen

Challenge X

1. Match the statements to the numbers, explaining your choices:

My number has 3 hundreds.	28 672
My number is thirty one thousand to the nearest ten.	29 301
My number is thirty thousand to the nearest ten thousand.	30 092
My number is twenty eight and a half thousand to the nearest five hundred.	31 004

Review

What is the missing number?

_____ = 300,000 + 40,000 + 50 + 4

_____ = 4,000,000 + 4,000 + 40 + 4

Mark Scheme – Lesson 1

Starter

Place Value

Write **23 798** in words.

Twenty-three thousand, seven hundred and ninety-eight

+ and –

Solve this column addition:

	4	3	4	2
+	5	9	4	4
1	**0**	**2**	**8**	**6**
1	**1**			

× and ÷

$$2\overline{)1190} = \mathbf{595}$$

Fractions

What number is hidden in these equivalent fractions? $\frac{1}{2} = \frac{6}{12}$

Problem Solving

800 + 5650 = 6450

5650 + 800 = **6450**

6450	
800	**5640**

Reasoning

"If 2.5cm is approximate to 1 inch, then 10 inches is approximately 250cm."

Is Henry correct?

Explain your reasoning.

He is incorrect because 2.5cm x10=25cm not 250cm.

Independent Tasks

Challenge 1

Write the value of the digits that are in red.

23,455 400 or four hundred or 4 hundreds

34,532 4000 or four thousand or 4 thousands

341,043 40,000 or forty thousand or 40 thousands

108,342 40 or forty of four tens

Now use a cherry diagram to show each of these numbers.

982,054

900,000 80,000 2,000 50 4

6,976,206

6,000,000 900,000 70,000 6,000 200 6

Challenge 2

Twelve thousand and forty-two

12,042

12,000+40+2 = 12,042

12,042

10,000 2,000 40 2

Six hundred and five thousand, four hundred and fifty-four

605,454

600,000+5,000+400+50+4 = 605,454

605,454

600,000 5,000 400 50 4

Eight hundred and fifty-nine thousand and six

859,006

800,000 +50,000+9,000+6 = 859,006

859,006

800,000 50,000 9,000 6

Nine million, three thousand and ninety-nine

9,003,099

9,000,000 + 3,000 + 90 + 9 = 9,003,099

9,003,099

9,000,000 3,000 90 9

For each number below write the number as words, a number sentence and a cherry diagram.

458,543

Four hundred and fifty eight thousand, five hundred and forty-three

400,000+50,000+8,000+500+40+3 = 458,543

458,543

400,000 50,000 8,000 500 40 3

8,503,086

Eight million, five hundred and three thousand and eighty-six

8,000,000+500,000+3,000+80+6 = 8,503,086

8,503,086

8,000,000 500,000 3,000 80 6

Challenge 3

Spot the mistakes:

5,505 ~ Five thousand, five hundred and fifty

2,400 ~ Twenty-four thousand

3,010,002 ~ Three hundred and one thousand and two

26,030 ~ Twenty-six thousand and thirteen

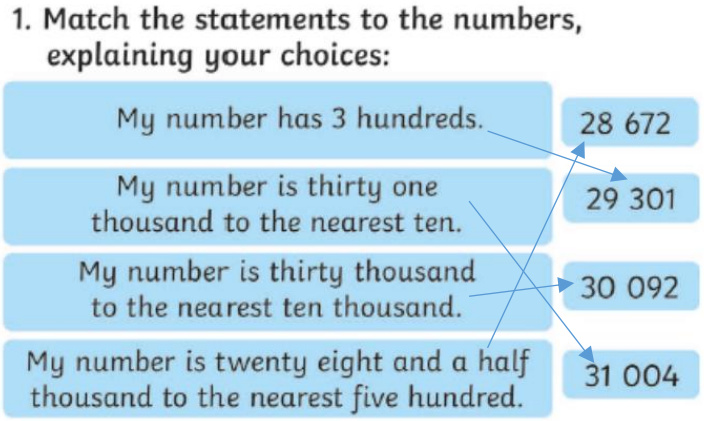
5,505 ~ Five thousand, five hundred and five

2,400 ~ Two thousand, four hundred

3,010,002 ~ Three million, ten thousand and two

26,030 ~ Twenty-six thousand and thirty

Challenge X



Review
340,054 = 300,000 + 40,000 + 50 + 4 4,004,044 = 4,000,000 + 4,000 + 40 + 4

Lesson 2		
Learning Intention: WALT: Compare numbers using the language of greater than (>) and less than (<)	Key Vocabulary: Digit, value, place holder, ones, tens, hundreds, thousands, millions, greater than, less than	What you will need: A computer, tablet or phone for the starter Maths book Pencil Ruler Video: Year 5 Maths Lesson 2
Starter		
In 5 minutes, try to complete at least 2 of these revision problems. Answers are in the Mark Scheme.		
Main Teaching		
Let's compare 2 numbers to see which is greater or lesser than the other < means less than or smaller than > Means greater than or larger than Top Tip: If one number has more digits than the other number then it is automatically larger. This works with integers (whole numbers) but not with numbers containing decimals.		

When numbers share the same number of digits then we have to compare them from the largest value down to the smallest value. We then use the symbols < for less than, > for greater than or = for equal to compare them with each other.

Example 1: Use a < or > or = symbol to compare these two numbers:
678 6,789

678 < 6,789 or 678 is less than 6,789

6789 has four digits so it will be larger than 678 which only has three digits

Example 2: Use a < or > or = symbol to compare these two numbers:

18,743 18,512

18,743 > 18,7512 or 18,743 is greater than 18,512

Both numbers have the same number of digits so we start to compare them from the largest value digit until we see a difference. In this example they both have the same first two digits: 1 and 8, but the third digits are different. Since the first number has a 7, meaning 700, and the second number has a 5, meaning 500, we can see that the first number 18,743 is larger/greater than the second number.

Example 3: Use a < or > or = symbol to compare these two numbers:

897,704 897,764

897,704 < 897,764
Both numbers have the same number of digits so we start to compare them from the largest value digit until we see a difference. In this example they both have the same first four digits: 8,9 7 and 7, but the fifth digits are different. Since the first number has a 0, meaning zero tens, and the second number has a 6, meaning 60 or 6 tens, we can see that the first number 897,704 is less than the second number.

Example 4
How many different statements can we make using < or > or less than or greater than with these 2 numbers? 34,782 and 32,782

34,782 > 32,782 or 34,782 is greater than 32,782
And
32,782 < 34,782 or 32,782 is less than 34,782

Independent Tasks

Please complete 1 or 2 challenges. You can only go on to Challenge X if you have completed Challenge 3 first. If you are finding a challenge too tricky or too easy after 3 questions, you should switch challenges.
After you have completed your challenge, check your answers in the mark scheme. If you got an answer wrong look carefully and identify where you made a mistake.

Challenge 1

Use < or > or = between these numbers

459 432
7563 7659
9903 9099
999 2,003
Three thousand and twenty 3002
576 576.0
988,756 989,556

Challenge 2

Use < or > or = between these numbers

873,758 872,999
677,893 99,999
103,876 10,387.6

Four hundred and fifty-two thousand ____ Four hundred and fifty thousand nine hundred

Ninety thousand, nine hundred and nine _____ Nine hundred thousand and nine

Now use the words 'greater than', 'less than' or 'equal to'

675,032 is _____ 893,999

999,999 is _____ 99,999.9

890,003 is _____ 980,003

Challenge 3

Use < or > or = between these numbers

5674.943 5674.9
7843.90 7843.09
12,784 12,784.3
100,670.11 100,671.999

Seventy-two point five seven _____ seventy-two point nine

999,999 1,111,111

Now use the words 'greater than', 'less than' or 'equal to'

893,875.04 is_____893,874.999

Now take this pair of numbers and write 4 statements using > < greater than and less than:

87,043.32 87,043.3

Challenge X

Use < or > or = between these numbers

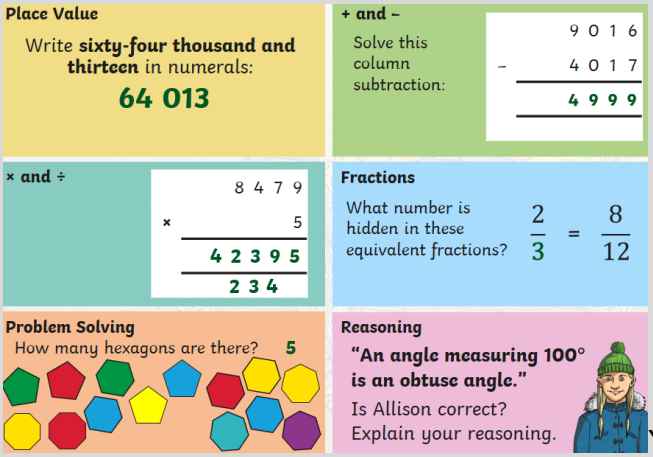
Half of one million _____ two thirds of one million

A quarter of 400,000 _____ three quarters of 160,000

Seven tenths of 160,000 _____ 7 ninths of 140,004

Review
What digit could be inserted to make this statement true? 346,3□6 > 346,346

Mark Scheme – Lesson 2

Starter
 Yes she is correct because an obtuse angle is any angle that is between 90 degrees and 180 degrees.
Independent Tasks
Challenge 1
459 > 432 7563 < 7659 9903 > 9099 999 < 2,003 Three thousand and twenty > 3002 576 = 576.0 988,756 < 989,556
Challenge 2
Use < or > or = between these numbers 873,758 > 872,999 677,893 > 99,999 103,876 > 10,387.6 Four hundred and fifty-two thousand > Four hundred and fifty thousand nine hundred Ninety thousand, nine hundred and nine < Nine hundred thousand and nine **Now use the words 'greater than', 'less than' or 'equal to'** 675,032 is less than 893,999 999,999 is greater than 99,999.9 890,003 is less than 980,003

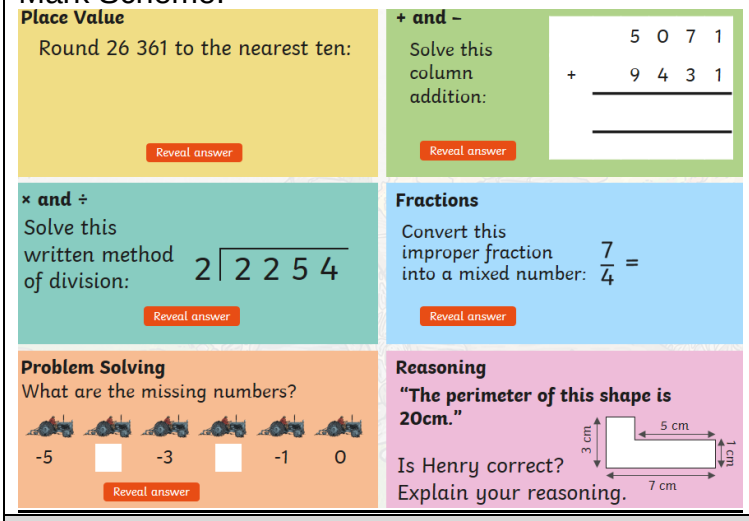
Challenge 3
Use < or > or = between these numbers 5674.943 > 5674.9 7843.90 > 7843.09 12,784 < 12,784.3 100,670.11 < 100,671.999 Seventy-two point five seven < seventy-two point nine 999,999 < 1,111,111 **Now use the words 'greater than', 'less than' or 'equal to'** 893,875.04 is greater than 893,874.999 Now take this pair of numbers and write 4 statements using < > greater than and less than. 87,043.32 87,043.3 87,034.32 > 87,043.3 87,043.3 < 87,043.3 87,034.32 is greater than 87,043.3 87,034.3 is less than 87,034.32
Challenge X
Half of one million < two thirds of one million A quarter of 400,000 < three quarters of 160,000 Seven tenths of 160,000 > 7 ninths of 140,004
Review
What digit could be inserted to make this statement true? 346,3□6 > 346,346 346,356 > 346,346 Other possible digits – 6, 7, 8, 9

Lesson 3

Learning Intention:	Key Vocabulary:	What you will need:
WALT: Order numbers in descending and ascending order	Digit, value, place holder, ones, tens, hundreds, thousands, millions, ascending, descending, order	A computer, tablet or phone for the starter Maths book Pencil Ruler Video: Year 5 Maths Lesson 3

Starter

In 5 minutes, try to complete at least 2 of these revision problems. Answers are in the Mark Scheme.



Main Teaching

What is descending order? It is when you start with the largest number and work down to the smallest. It comes from the word descent or descent, which means to come down from somewhere high up.
Example: 289 40 32 8

What is ascending order? It is when you start with the smallest number and work up to the largest. It comes from the word ascend, which means to go up.
Example: 8 32 40 289

Example 1: Sort these numbers into ascending order (smallest to largest)

34,565
34,674
34,682
3,999

3,999 34,565 34,674 34,682
Smallest largest

The 3,999 was smallest because it had the least digits. The other 3 numbers shared the same first two digits but the third digit was different in one of them and that digit, the 5,

meant that it was smaller than the other two so it was next. The last two numbers shared the same first digits so we had to look at the fourth digit which allowed us to sort them

Example 2:

Let's place these numbers in ascending order on a number line a 0 to 1,000,000 number line.

250,000 700,000 550,000 100,000

First we put them in order: They are all 6 digit numbers so we start by comparing their largest value digit which in this case is the hundreds of thousands digit. As they each have a different digit in this column it is then simple to order them.

We get this: 100,000 250,000 550,000 700,000

Now we place them on a 0 to 1,000,000 number line.

```
_____________________________________________________________________
0                                                          1,000,000
```

The 550,000 is probably the easiest to place as we know that the halfway point on the line will be 500,000 so 550,000 will be slightly above that.

```
                                        550,000
_____________________________________|_|_____________________________
0                                 half way                   1,000,000
```

Next I would place the 250,000 as I know that half of 500,000 is 250,000. I also know that 250,000 is a quarter of a million so it will go a quarter of the way along the line.

```
                 250,000                 550,000
_________________|_________________|_|_____________________________
0                                 half way                   1,000,000
```

Then I would place the 100,000 which I know is less than half of 250,000.

```
  100,000          250,000                 550,000
____|_____________|_________________|_|_____________________________
0                                 half way                   1,000,000
```

Lastly I would place the 700,000 as I know that 7 is slightly closer to 5 than 10 so 700,000 will be slightly closer to 500,000 than 1,000,000

```
  100,000          250,000                 550,000       700,000
____|_____________|_________________|_|_____________|_______________
0                                 half way                   1,000,000
```

Independent Tasks

Please complete 1 or 2 challenges. You can only go on to Challenge X if you have completed Challenge 3 first. If you are finding a challenge too tricky or too easy after 3 questions, you should switch challenges.
After you have completed your challenge, check your answers in the mark scheme. If you got an answer wrong look carefully and identify where you made a mistake.

Challenge 1

Order these numbers from smallest to largest.

1300 3475 2894 9374 6352 5505

smallest ←					→ largest

7483 2939 4583 8023 1029 3049

smallest ←					→ largest

4857 4982 4727 5001 4892 3948

smallest ←					→ largest

5723 5924 8203 3049 6384 5927

smallest ←					→ largest

13 039 4939 3948 10 394 9458 5283

smallest ←					→ largest

7585 16 049 7558 5758 7587 61 049

smallest ←					→ largest

Challenge 2

1) Here are the earnings from the gift shop at a theme park.

Monday	£43 125
Tuesday	£42 047
Wednesday	£43 113
Thursday	£42 568
Friday	£42 042

Make these statements true by using the < or > symbol.

Monday's earnings		Wednesday's earnings
Thursday's earnings		Tuesday's earnings
Friday's earnings		Tuesday's earnings

Tuesday's earnings		Thursday's earnings		Friday's earnings

2) Order the amounts of money in ascending order.

smallest						greatest

3) Here are the theme park's average ticket sales for different months of the year.

January	April	July	October
100 000	450 000	950 000	600 000

Estimate where these numbers would sit on a number line. Mark them and label the month.

0 500 000 1 000 000

Place these numbers onto the number line below taking into account the difference between each number in proportion to its position on the line:

44,400 99,101 123

I_____I

0 100,000

Challenge 3

1) Here are the takings from different shops at the theme park. Can you use the clues to match the takings to the correct shop?

£105 236	£752 365	£521 047	£781 025	£752 324

Delicious Deli	Donut Delights	Milkshake Madness	The Smoothie Shop	Sweet Treats
These takings have no hundreds.	These takings have a digit sum of 17.	This shop has taken the most money.	When you put the amounts in descending order, this shop is third.	These takings are £41 more than The Smoothie Shop's.

2) Three amusements from the theme park - the River Rapids, the Runaway Train and the Haunted House - add up their takings for the year. Using the clues below, can you work out how much each amusement might have earned? Give three possible answers.

The River Rapids earned £10 000 less than the Haunted House.
The Runaway Train earned a six-digit figure which has a digit sum of 18.
The Haunted House earned a six-digit figure that was greater than the Runaway Train's. Their amount also has a digit sum of 18. They have a 5 in the ten thousands column.

Adam was making numbers using ten counters. He needed to have a counter in at least four columns. He made the greatest number possible and the smallest number possible. Are his numbers correct? Explain your reasoning.

Greatest Number Possible					
HTh	TTh	Th	H	T	O
●● ●●	●● ●	●●	●		

Smallest Number Possible					
HTh	TTh	Th	H	T	O
●	●	●	●	●	●● ●● ●

_____

_____

_____

_____

_____

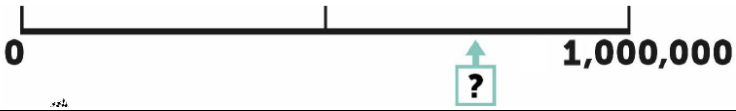
_____

Challenge X

Can you come up with different possibilities for the two question marks on this line?

Review

What is the approximate number where the arrow is pointing on this line?



Mark Scheme – Lesson 3

Starter

Place Value

Round 26 361 to the nearest ten:

26 360

+ and –

Solve this column addition:

	5	0	7	1
+	9	4	3	1
1	4	5	0	2
1		1		

× and ÷

Solve this written method of division:

$$\begin{array}{r} 1127 \\ 2\overline{)2254} \end{array}$$

Fractions

Convert this improper fraction into a mixed number: $\frac{7}{4} = 1\frac{3}{4}$

Problem Solving

What are the missing numbers?

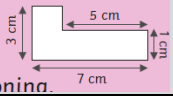
-5 **-4** -3 **-2** -1 0

Reasoning

"The perimeter of this shape is 20cm."

Is Henry correct?

Explain your reasoning.



Yes he is correct because the missing measurements on 2 of the sides are both 2cm which you get by doing 7cm-5cm=2cm and 3cm-1cm =2cm. You then work out the perimeter by adding the length of all the sides which is 7cm+3cm+5cm+2cm+2cm+1cm=20cm.

Independent Tasks

Challenge 1

Order these numbers from smallest to largest.

smallest ←					→ largest
1300	2894	3475	5505	6352	9374

smallest ←					→ largest
1029	2939	3049	4583	7483	8023

smallest ←					→ largest
3948	4727	4857	4892	4982	5001

smallest ←					→ largest
3049	5723	5924	5927	6384	8203

smallest ←					→ largest
3948	4939	5283	9458	10 394	13 039

smallest ←					→ largest
5758	7558	7585	7587	16 049	61 049

Challenge 2

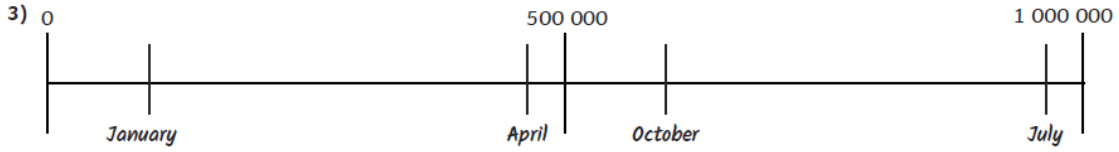
1)

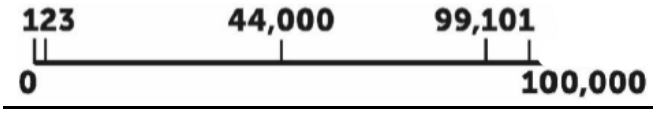
Make these statements true by using the < or > symbol.				
Monday's earnings	>	Wednesday's earnings		
Thursday's earnings	>	Tuesday's earnings		
Friday's earnings	<	Tuesday's earnings		
Tuesday's earnings	<	Thursday's earnings	>	Friday's earnings

2)

smallest	£42 042 Friday	£42 047 Tuesday	£42 568 Thursday	£43 113 Wednesday	£43 125 Monday	greatest

3)





Challenge 3

1)

£105 236	£752 365	£521 047	£781 025	£752 324

Delicious Deli	Donut Delights	Milkshake Madness	The Smoothie Shop	Sweet Treats
These takings have no hundreds.	These takings have a digit sum of 17.	This shop has taken the most money.	When you put the amounts in descending order, this shop is third.	These takings are £41 more than The Smoothie Shop's.

2) *Accept any three correct combinations, such as:*

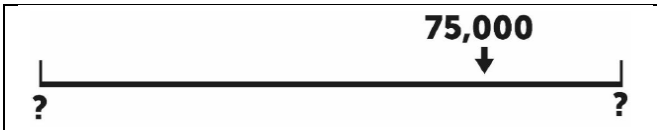
River Rapids £241 505	*River Rapids £542 312*	*River Rapids £842 030*
Runaway Train £121 833	*Runaway Train £401 526*	*Runaway Train £820 404*
Haunted House £251 505	*Haunted House £552 312*	*Haunted House £852 030*

Adam is incorrect. To make the greatest number possible, first put one counter in each of the four highest value columns. Then put the remaining counters in the highest value column. The greatest number possible would be 711 100.

Adam is incorrect. To make the smallest number possible, first put one counter in each of the four lowest value columns. Then put the remaining counters in the lowest value column. The smallest number possible would be 1117.

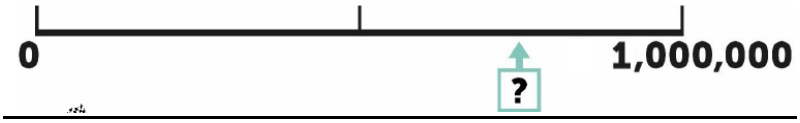
Challenge X

Can you come up with different possibilities for the two question marks on this line?



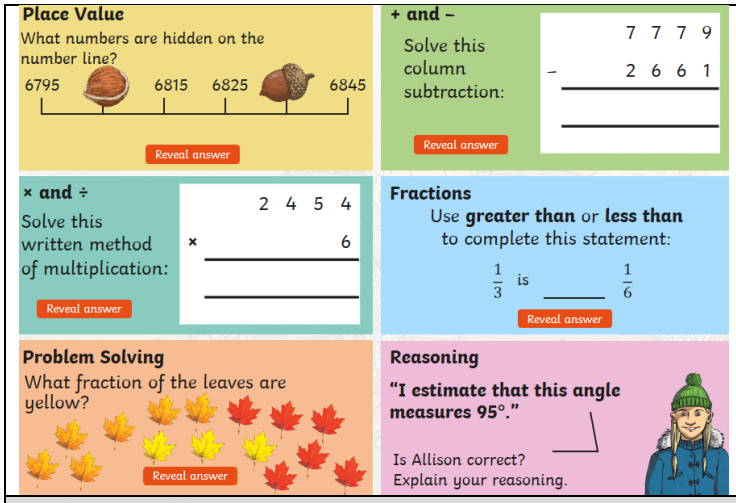
Some possible answers might be:
0 and 100,000
70,000 and 76,000
50,000 and 80,000
Not and acceptable answer would be 0 and 1,000,000 as the 75,000 would need to be much closer to the first question mark.

Review



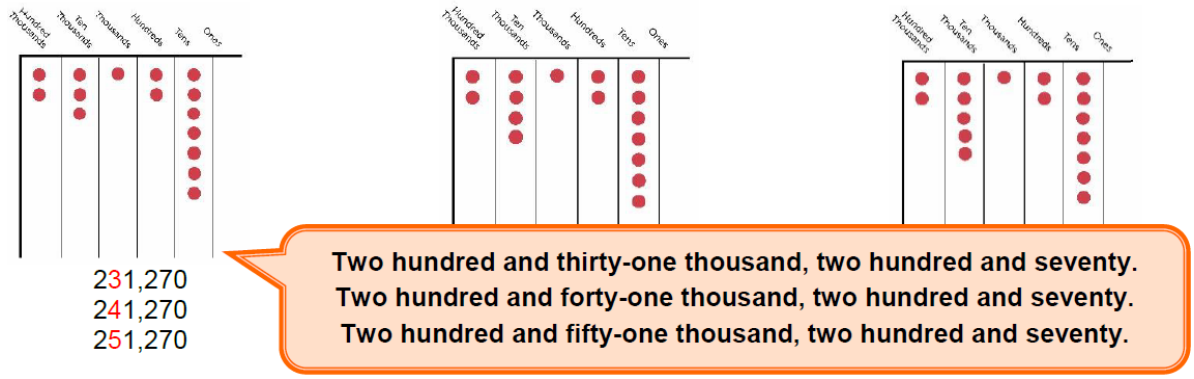
Acceptable answers: Any number between and including 700,000 to 800,000. Best answer would be 750,000

Lesson 4		
Learning Intention: WALT: Count in steps of 10,100,1000, 10,000, 100,000 from any given number	Key Vocabulary: Steps, boundary, count on, count back Digit, value, place holder, ones, tens, hundreds, thousands.	What you will need: A computer, tablet or phone for the starter Maths book Pencil Ruler Video: Year 5 Maths Lesson 4
Starter		
In 5 minutes, try to complete at least 2 of these revision problems. Answers are in the Mark Scheme.		



Main Teaching

Example 1 These place value charts show what is happening when you count on in ten thousands from 231,270. Can you see the difference in each diagram?



Example 2: counting on 3 steps of 100 from 2,630. What number will you finish on?

2,630 2,730 2,830 2,930 I would finish on 2,930.

What would happen if we counted on one more 100? The hundreds digit would turn to zero and the thousands digit would increase by 1 because 900 add 100 makes 1000. The next number would therefore be 3,030.

Example 3: Count back 4 steps of a thousand from 43,567. What number will you be on.

43,567 42,567 41,567 40,567 39,567 We would end up on 39,567.

With this example, we had to be careful when crossing the boundary of 40,000. We had to remember that we were counting back so it would become 39,000.

Here is a mistake that is often made with this type of question.

83,267 82,267 81,267 80,267 89,567

Can you see the mistake? 89,267 is a mistake. 89,267 is larger than 80,267 and if you are counting back the numbers should be getting smaller.
Can you fix the mistake? That's right the 89,567 should be 79,567

Independent Tasks

Please complete 1 or 2 challenges. You can only go on to Challenge X if you have completed Challenge 3 first. If you are finding a challenge too tricky or too easy after 3 questions, you should switch challenges.
After you have completed your challenge, check your answers in the mark scheme. If you got an answer wrong look carefully and identify where you made a mistake.

Challenge 1

Count on 3 steps of 10 from 260. What number will you be on?

Count back 3 steps of 10 from 260. What number will you be on?

Count on 4 steps of 100 from 2460. What number will you be on?

Count back 4 steps of 100 from 2460. What number will you be on?

Count on 5 steps of 10 from 6,770. What number will you be on?

Count back 4 steps of 10 from 728. What number will you be on?

Challenge 2

Count on 3 steps of 10 from 65,260. What number will you be on?

Count back 3 steps of 10 from 1,220. What number will you be on?

Count on 4 steps of a thousand from 672,460. What number will you be on?

Count back 4 steps of 10 thousand from 131,460. What number will you be on?

Count back 3 steps of 10 from 30,018. What number will you be on?

Count back 4 steps of 10 from 8,728. What number will you be on?

I counted on 4 steps of 10 from a number and ended up on 264. What number did I start on?

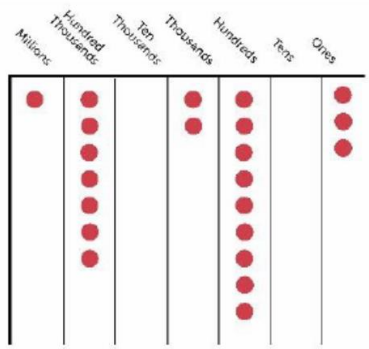
Challenge 3

I counted on 4 steps of 10 from a number and ended up on 264. What number did I start on?

I counted on 8 steps of 10,000 and ended on 838,023. What number did I start on?

I counted back 6 steps of a hundred thousand and ended on 2,885,029. What number did I start on?

I counted on 5 steps of 100 and ended up on 458. What number did I start on?



If you have 3 more counters, what other numbers could you make?

Challenge X

I have counted back 3 steps of 10, 100, 1000, 10000 or 100,000 and ended on 235,032.
What could my starting number have been?

Review

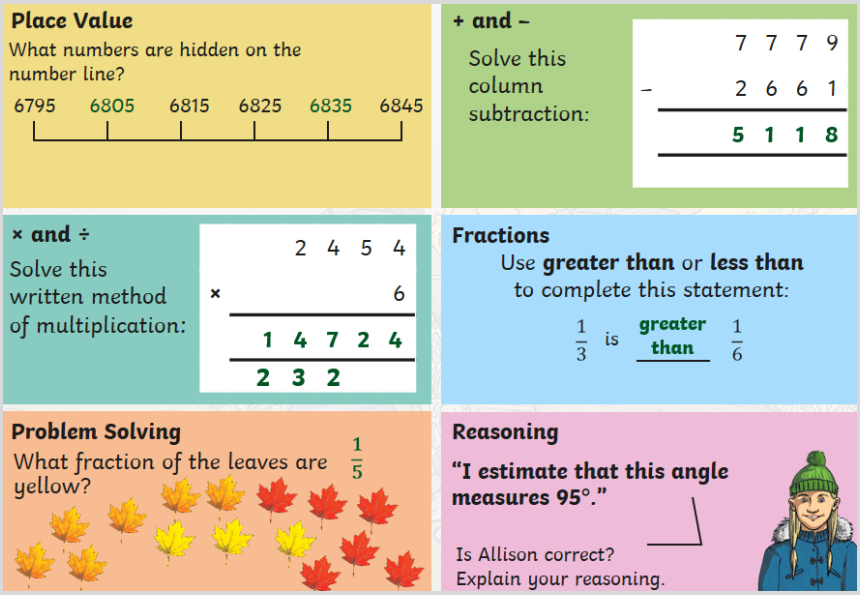
Spot the 3 mistakes

Counting on five steps of 100 from 5,735

5,735 5,835 5,935 5,035 5,135

Mark Scheme – Lesson 4

Starter



She is wrong because we can see that the angle is less than a right angle. A right angle measures 90 degrees exactly and her estimate is larger than that so we can tell she is incorrect. A better estimate would have been 85 degrees.

Independent Tasks

Challenge 1

Count on 3 steps of 10 from 260. What number will you be on?
260 270 280 290 I will be on 290.

Count back 3 steps of 10 from 260. What number will you be on?
260 250 240 230 I will be on 230.

Count on 4 steps of 100 from 2460. What number will you be on?
2460 2560 2660 2760 2860 I will be on 2840.

Count back 4 steps of 100 from 2460. What number will you be on?
2460 2360 2260 2160 2060 I will be on 2040.

Count on 5 steps of 10 from 6,770. What number will you be on?
6,770 6,780 6,790 6,800 6,810 6,820 I will be on 6,820.

Count back 4 steps of 10 from 728. What number will you be on?
728 718 708 698 688 I will be on 688.

Challenge 2

Count on 3 steps of 10 from 65,260. What number will you be on?
65,260 65,270 65,280 65,290 I will be on 65,290.

Count back 3 steps of 10 from 1,220. What number will you be on?
1,220 1,210 1,200 1,190 I will be on 1,190.

Count on 4 steps of a thousand from 672,460. What number will you be on?
672,460 673,460 674,460 675,460 676,460 I will be on 676,460

Count back 4 steps of 10 thousand from 131,460. What number will you be on?
131,460 121,460 111,460 101,460 91,460 I will be on 91,460.

Count back 3 steps of 10 from 30,018. What number will you be on?
30,018 30,008 29,998 29,988 I will be on 29,988.

Count back 4 steps of 10 from 8,728. What number will you be on?
8,728 8,718 8,708 8,698 8,688 I will be on 8,688.

Challenge 3

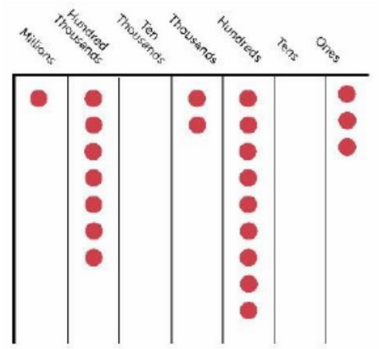
I counted on 4 steps of 10 from a number and ended up on 264. What number did I start on? 224

I counted on 8 steps of 10,000 and ended on 838,023. What number did I start on?
758,023

I counted back 6 steps of a hundred thousand and ended on 2,885,029. What number did I start on?
3,485,029

I counted on 5 steps of 100 and ended up on 458. What number did I start on?

-42



If you have 3 more counters, what other numbers could you make?

Number represented – 1,702,903

Possible new numbers (there are many more):

1,903,903

1,702,924

4,702,903

Challenge X

I have counted back 3 steps of 10, 100, 1000, 10000 or 100,000 and ended on 235,032.

What could my starting number have been?

568,362

Review

Spot the 3 mistakes

Counting on five steps of 100 from 5,735

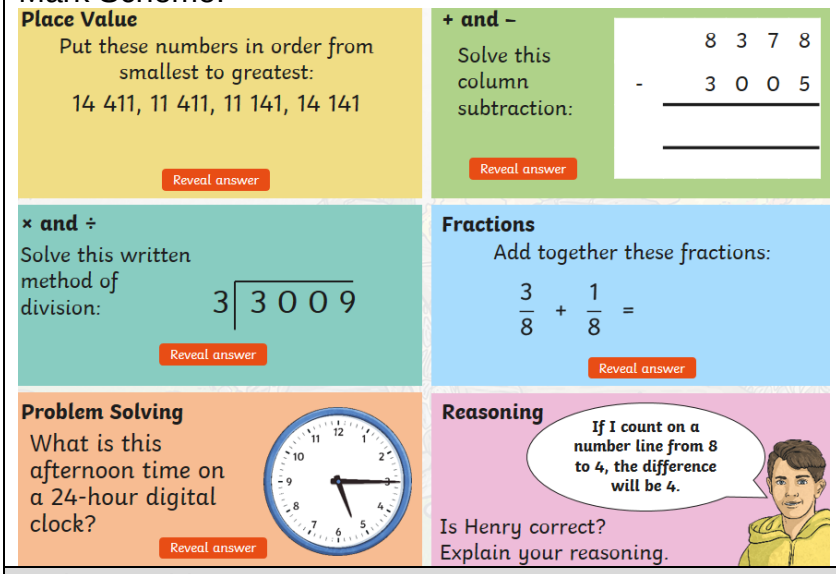
5,735 5,835 5,935 ~~5~~,035 ~~5~~,135

6,035 6,135 6235 (fifth step on 100 was missing)

Lesson 5		
Learning Intention: WALT: round numbers to the nearest 1, 10, 100, 1000, 10,000, 100,000	Key Vocabulary: Digit, value, place holder, ones, tens, hundreds, thousands.	What you will need: A computer, tablet or phone for the starter Maths book Pencil Ruler Video: Year 5 Maths Lesson 5

Starter

In 5 minutes, try to complete at least 2 of these revision problems. Answers are in the Mark Scheme.



Main Teaching

Please complete 1 or 2 challenges. You can only go on to Challenge X if you have completed Challenge 3 first. If you are finding a challenge too tricky or too easy after 3 questions, you should switch challenges.
After you have completed your challenge, check your answers in the mark scheme. If you got an answer wrong look carefully and identify where you made a mistake.

A fun little rhyme to remember the rule when rounding.

Rounding means making a number simpler but keeping its value close to what it was.

73 → 70

76 → 80

The result is less accurate, but easier to use.

Example: 73 rounded to the nearest ten is 70, because 73 is closer to 70 than to 80.
But 76 goes up to 80.

There are many ways to round. This is the most common method:

- Decide which is the last digit you are going to keep (all the digits after it will become zeroes)
- Leave it the same if the next digit is less than 5 (this is called rounding down)
- Increase it by 1 if the next digit is 5 or more (this is called rounding up)
- Remember to make all the other digits zeroes (or the technical word is placeholders)

Example 1: Round 5,763 to the nearest hundred.

The last digit we are going to keep is the 7 because it is in the hundred column, but the next digit is 6, which is 5 or more, so we increase the 7 by 1 to give us 8. The other digits after it become placeholders (zeroes).

So our answer is that 5,763 rounded to the nearest hundred is 5,800

Example 2: Round 568,465 to the nearest thousand.

The last digit we are going to keep is the 8 because it is in the thousand column, but the next digit is 4, which is less than 5, so we keep the 8 as it is. The other digits after it become placeholders (zeroes).

So our answer is that 568,465 rounded to the nearest thousand is 568,000

Example 3: Round 895,122 to the nearest ten thousand.

The last digit we are going to keep is the 9 because it is in the ten thousand column, but the next digit is 5, which is 5 or more, so we increase the 9 by 1 to give us 10. This means that the digit to the left of the 9 will go up by 1 as well and the 9 will become a placeholder (zero). The remaining digits will become placeholders (zeroes). So we will get 900,000.

Therefore our answer would be: 895,122 rounded to the nearest ten thousand is 900,000.

Independent Tasks

Challenge 1

Dear Agent,

There has been a breach in Internet security, and we need you to help protect the data before it is stolen!

The IP numbers attached to this document have fallen into the hands of despicable criminals. Soon, they will have worked out the patterns to unlock the codes and steal important and secretive information.

Can you help us find the codes to lock the files before they access them?

To find the code to lock the files, you must round the IP number to the nearest 10, 100 and 1000.

Good Luck Agent!

Round each IP number to the nearest 10, 100 and 1000 to find the code.

For example: Mr Amadi Owoh **IP Number:** 4239 **Code:** 4240, 4200, 4000	Mr Nigel Mikkelsson **IP Number:** 6902 **Code:** _____ _____	Mrs Rita Clarence **IP Number:** 7264 **Code:** _____ _____	Mr Thomas Matthews **IP Number:** 7619 **Code:** _____ _____
Mr Matt Richards **IP Number:** 3759 **Code:** _____ _____	Mr Grayson Tull **IP Number:** 74 929 **Code:** _____ _____	Miss Jacqui Kneel **IP Number:** 15 575 **Code:** _____ _____	Mrs Sarah White **IP Number:** 9493 **Code:** _____ _____

Challenge 2

Dear Agent,

There has been a breach in Internet security, and we need you to help protect the data before it is stolen!

The IP numbers attached to this document have fallen into the hands of despicable criminals. Soon, they will have worked out the patterns to unlock the codes and steal important and secretive information.

Can you help us find the codes to lock the files before they access them?

To find the code to lock the files, you must round the IP number to the nearest 10, 100, 1000 and 10 000.

Good Luck Agent!

Round each account number to the nearest 10, 100, 1000 and 10 000 to find the codes.

For example: Mr Amadi Owoh **IP Number:** 42 239 **Code:** 42 240, 42 200, 42 000, 40 000	Mr Nigel Mikkelsson **IP Number:** 28 948 **Code:** _____ _____	Mrs Rita Clarence **IP Number:** 42 498 **Code:** _____ _____	Mr Thomas Matthews **IP Number:** 19 398 **Code:** _____ _____
Mr Matt Richards **IP Number:** 38 204 **Code:** _____ _____	Mr Grayson Tull **IP Number:** 413 933 **Code:** _____ _____	Miss Jacqui Kneel **IP Number:** 145 575 **Code:** _____ _____	Mrs Sarah White **IP Number:** 94 493 **Code:** _____ _____

Challenge 3

Dear Agent,

There has been a breach in Internet security, and we need you to help protect the data before it is stolen!

The IP numbers attached to this document have fallen into the hands of despicable criminals. Soon, they will have worked out the patterns to unlock the codes and steal important and secretive information.

Can you help us find the codes to lock the files before they access them?

To find the code to lock the files, you must round the IP number to the nearest 10, 100, 1000, 10 000 and 100 000.

Good Luck Agent!

Round each account number to the nearest 100, 1000, 10 000 and 100 000 to find the codes.

For example: Mr Amadi Owoh **IP Number:** 42 239 **Code:** 42 200, 42 000, 40 000, 0	Mr Nigel Mikkelsson **IP Number:** 288 948 **Code:** _____ _____	Mrs Rita Clarence **IP Number:** 432 458 **Code:** _____ _____	Mr Thomas Matthews **IP Number:** 293 392 **Code:** _____ _____
Mr Matt Richards **IP Number:** 198 375 **Code:** _____ _____	Mr Grayson Tull **IP Number:** 498 232 **Code:** _____ _____	Miss Jacqui Kneel **IP Number:** 593 484 **Code:** _____ _____	Mrs Sarah White **IP Number:** 944 493 **Code:** _____ _____

Challenge X

Question 1
Write 3 numbers which rounded to the nearest 1,000 would be:

3,000
57,000
204,000

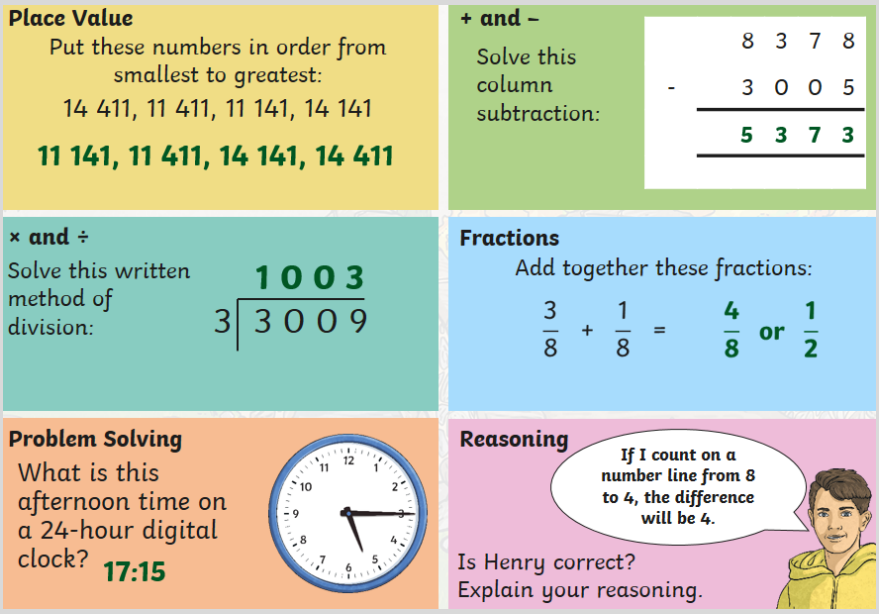
Question 2
If the population of the UK was approximately 65,300,000, what is this to the nearest million?
What is the largest actual population that would round to the same nearest million?

Review

Round the number 159,996 to the nearest 1,000, then the nearest 10,000.
What do you notice?

Mark Scheme – Lesson 5

Starter



This is correct and there are several ways to prove it. First 8 – 4 = 4 which shows that they must have a difference of 4. Also if you count along a number line from 4 to 8 you will find that it takes 4 jumps. Also we know that if you add 4 to 4 then you will get 8 which again shows that they must have a difference in value of 4.

Independent Task

Challenge 1,2 and 3

	Challenge 1	Challenge 2	Challenge 3
Mr Nigel Mikkelsson	6900 6900 7000	28 950 28 900 29 000 30 000	288 900 289 000 290 000 300 000
Mrs Rita Clarence	7260 7300 7000	42 500 42 500 42 000 40 000	432 400 432 000 430 000 400 000
Mr Thomas Matthews	7620 7600 8000	19 400 19 400 19 000 20 000	293 400 293 000 290 000 300 000
Mr Matt Richards	3760 3800 4000	38 200 38 200 38 000 40 000	198 400 198 000 200 000 200 000
Mr Grayson Tull	74 930 74 900 75 000	413 930 413 900 414 000 410 000	498 200 498 000 500 000 500 000
Miss Jacqui Kneel	15 580 15 600 16 000	145 580 145 600 146 000 150 000	593 500 593 000 590 000 600 000
Mrs Sarah White	9490 9500 9000	94 490 94 500 94 000 90 000	944 500 944 000 940 000 900 000

Challenge 2

See above

Challenge 3

See above

Challenge X

Question 1

3,000 – any numbers between 2500 and 3499

57,000 – and numbers between 56,500 and 57,499

204,000 – any numbers between 203,500 and 204,499

Question 2

65,300,000 to the nearest million is 65,000,000

The largest actual population that would round to the same nearest million is 65,499,999 as this nearer to 65 million than 66 million

Review

Possible responses:

159,996 to the nearest 1000 is 160,000 because the nearest thousand to 996 is 1000 and the thousand after 59,000 is 60,000.

159,996 to the nearest 10,000 is 160,000 because the nearest 10,000 to 59,996 is 60,000 as it is only 4 bigger. 150,000 is 9,996 away.

They both give the answer 160,000.

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