Number & Place Value: Count in multiples of 6, 7, 9, 25 and 1,000.

Learning focus	Count in multiples of 6

Greater Depth Challenge:

Convince me that the number 18 will be in this sequence:

54, 48, 42, 36…

Greater Depth Challenge:

Here is a sequence of numbers.

6, 12, 18, 24

What will be the 25th number in the sequence?

What will the 50th number in the sequence be?

How do you know? Explain your answer.

Greater Depth Challenge:

What is the same and what is different about these two number sequences?

12, 18, 24, 30, 36…

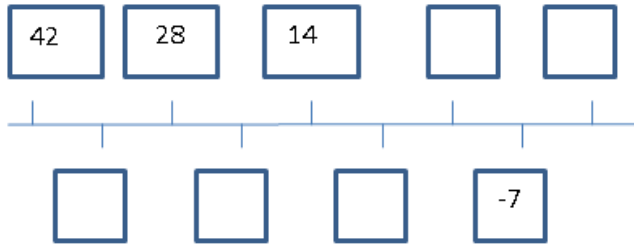35, 29, 23, 17, 11….

Greater Depth Challenge:

The temperature at 6am in December was -6 degrees Celsius.

Every hour, it increased by 6 degrees.

What was the temperature by 3pm?

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Greater Depth Challenge:

Can you fill in the missing boxes?

42		28		14				

				-7

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Greater Depth Challenge:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Only 3 numbers are shaded in the counting pattern below.

Work out the pattern and complete the shading.

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Greater Depth Challenge:

In Brighton the average June temperature at midday was 21°C.

The average temperature drops by 7°C every two months.
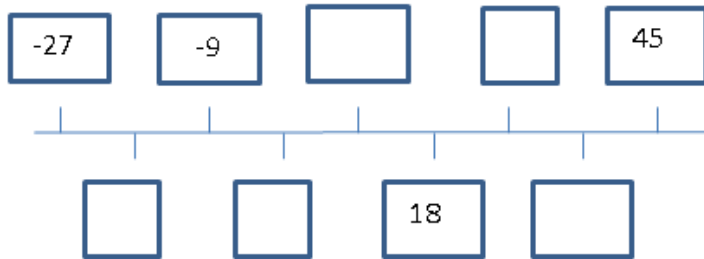
Which month did the temperature reach freezing point?

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Greater Depth Challenge:

This sequence is incomplete. Can you find the missing numbers?

____ , -14 , ____ , ____ , 14 , ____ , 28 , 35 , ____

Learning focus	Count in multiples of 9

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Greater Depth Challenge:

Can you fill in the missing boxes?

| -27 | -9 | | | 45 |

| | | 18 | |

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Greater Depth Challenge:

A number sequence starts with **14, 23, 32**.

What will the 10th number be?

What will the 20th number be?

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Greater Depth Challenge:

The numbers in this sequence continue in the same way:

90, 180, 270, 360, 450...

Circle all of the numbers that would be in the sequence:

620, 540, 720, 560, 819, 630, 738

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Greater Depth Challenge:

Sam is training for an event. He runs 9 miles each week. He has 12 weeks until the event takes place. He only misses 1 week of training due to illness.

He calculates that will have ran a total of 63 miles because 9 miles X 7 (days in a week) = 63.

Is he correct? Explain your reasoning.

Learning focus	Count in multiples of 25

Greater Depth Challenge:

Can you fill in the gaps?

	75		125		175		

Greater Depth Challenge:

25 50 75 100 125 150 175

What shape will have the number 300 in?

How do you know?

Greater Depth Challenge:

Ella counts on in multiples of 25 from 500.

Circle the numbers she will say:

580   850   1000   740   520   675   925

How do you know you have circled all of them?

Greater Depth Challenge:

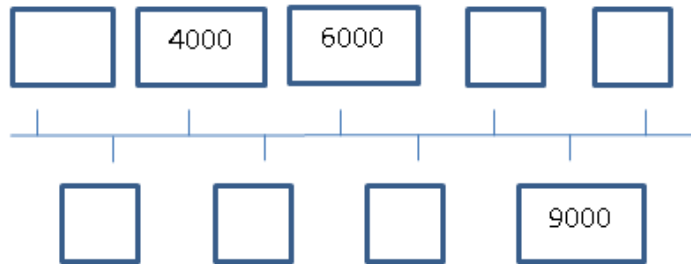Sally says, **"Half of the multiples of 25 less than 500 are multiples of 50."**

Is she right?

Yes/ No?

Can you prove your answer?

Learning focus	Count in multiples of 1,000

Can you fill in the missing boxes?

| | 4000 | 6000 | | |

| | | | 9000 |

Always, sometimes, never true?

Angus says, **"1000 is a multiple of 25, so therefore 25 is a multiple of 1000?"**

Is he correct? Explain your answer.

Number & Place Value: Find 1,000 more or less than a given number.

| Learning focus	Count orally from a given number increasing or decreasing by 1,000 and explain the digit patterns including the impact of crossing boundaries when moving between 1,000s and 10,000s.

Greater Depth Challenge:

Mia thinks of a number.
She says:
"The number 1000 less than my number uses the digit cards 3,4, 5 and 6. The tens column is the only even digit in my number."

What could her number be? How many possibilities can you find?

Greater Depth Challenge:

1300		1500
3300		
	?	
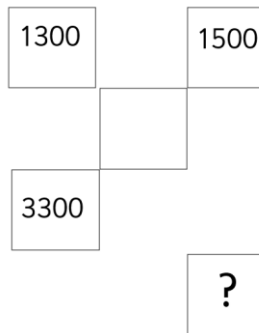
What is the missing number?

Number & Place Value: **Count backwards through 0 to include negative numbers.**

Learning focus	Count forwards and backwards in ones through the zero boundary and discuss what happens when zero is reached, e.g., Use counting decisticks, counting hoops, etc.

Greater Depth Challenge:

Joe has £18 in his bank.

He goes shopping and buys himself some shoes that cost £15, a t-shirt that costs £9 and a tie that costs £4.

What is his new bank balance?

Is there more than one way to solve this?

Which way is more efficient? Why?

Greater Depth Challenge:

Louise starts counting backwards from 8 in ones. What will be the 16th number she lands on?

Explain how you know.

Learning focus	Count forwards and backwards in different step numbers of equal size through the zero boundary,

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Greater Depth Challenge:

The temperature at 8pm is 15°C.
It drops by 3°C every hour.

Annie says **"At 3am the next morning the temperature will be 0 because it can't be any colder than 0."**
What advice would you give her to help her find the answer?
What is the simplest way you have to explain it?

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Greater Depth Challenge:

Builders are digging a hole in the ground ready for a new building.
Each day they dig a further 3 metres down. They begin at 2 metres above the ground level.
They need to dig a hole which is 16 metres below the ground.
How many days will it take them?

Number & Place Value: Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).
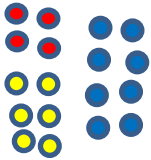
Learning focus	Partition numbers into thousands, hundreds, tens and ones.

Greater Depth Challenge:

These place value counters have no value.
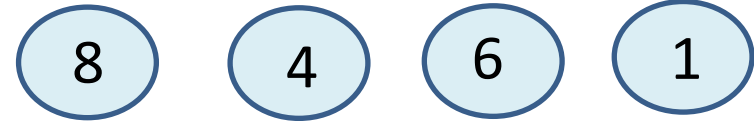Can you use them to represent the following numbers?

2743
6286
5091

Explain what each counter represents and how you have made each number.

Greater Depth Challenge:

Sophie picks these cards.

8   4   6   1

What is the **2nd smallest** number she can make using these digit cards?

| Learning focus | Understand zero as a place-holder in numbers, such as 2036, 4305, and 6007. |

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Greater Depth Challenge:

Theo has three place value counters and the place value grid below. How many different numbers can he make using these?

TH	H	T	U

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Greater Depth Challenge:

Always, sometimes or never?

When you put a zero on the right hand side of a whole number, the number that was in the units position moves into the hundreds position and so on.

Learning focus	Know the value of a chosen digit in a given number, e.g., in 1275 the 2 has a value of 200.

Greater Depth Challenge:

Write the value of 7 in each of these numbers:

6734   847

572   731

7064   5827

Explain how you know.

Greater Depth Challenge:

Create 5 four-digit numbers where the value of the 3 is 300 and the numbers are even.

Order them from largest to smallest.

Number & Place Value: Order and compare numbers beyond 1,000.

Learning focus	Order a set of whole numbers in ascending / descending order recognising the most significant digit in this process, e.g., 2500, 900, 750, 5300, 2501.

Greater Depth Challenge:

How many four digit numbers can you make using the digit cards below?

5	8	3	6

Place them in ascending order.

Greater Depth Challenge:

If Jamie wrote these numbers in ascending order, which number would be 5th?

2122   2212   2112   2112   2102   2121

Learning focus	Compare numbers and quantities by:
	using = < and > symbols, e.g., ▢ < 3445 ▢ 5089;
	placing numbers accurately on an un-numbered number line where only the start and end numbers are known.

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Greater Depth Challenge:

Fill in the missing boxes using either < > =

56 + 84 ▢ 32 + 66

92 - 34 ▢ 85 - 35

42 + 96 ▢ 179 – 41

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Greater Depth Challenge:

What digit could you put in the box to make this number sentence correct?

1540 + 1▢4 > 1684

How many possibilities could there be for the following question:

507 + ▢ < 511

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Greater Depth Challenge:

216 > 189 + ▢

What is the smallest number that could go in the box?

What is the biggest?

Learning focus	Describe the positional relationship between two numbers, e.g., 6721 is larger than 7000 but smaller than 8000.

Greater Depth Challenge:

Can you place 4731 on all three of these number lines?
Have you put them in different places? Why?

4000   5000

4700   4800

4730   4740

Greater Depth Challenge:

Jack thinks of a number which is larger than 3467 but smaller than 4101.

His number has a 0 in and is odd.

What could his number be?
Is there more than one solution?

Learning focus	Round numbers to the nearest 10, understanding the rule that if the ones are below 5 round down, and if they are above 5 round up.

Greater Depth Challenge:

The head teacher of a school wants to send Christmas cards to all 467 children in her school.

Cards come in boxes of 10.

How many boxes does she need to buy?
Explain your reasoning

Greater Depth Challenge:

A number rounded to the nearest 10 is 650.

What is the smallest possible number that it could be?

Explain your reasoning.

Greater Depth Challenge:
Always, sometimes, never?

Jack rolls two six-sided die to create two 2-digit numbers.
He rounds both of the numbers to the nearest 10.

Do both of his numbers ever round to the same multiple of ten?
Explain your answer.

Learning focus	Round numbers to the nearest 100, understanding the rule that if the tens are below 50 round down, and if they are above 50 round up.

Greater Depth Challenge:

I am thinking of a number

Rounded to the nearest 10 is 3550
Rounded to the nearest 100 is 3600
All of the digits add up to 16.

What is my number?

Greater Depth Challenge:

Louis bought a new bike which when rounded to the nearest 100 was £300.

What is the smallest and largest possible amount it could have cost?

Greater Depth Challenge:

A number rounded to the nearest 100 is 2500.

What is the smallest possible number it could be?

Learning focus	Round numbers to the nearest 1,000, understanding the rule that if the hundreds are below 500 round down, and if they are above 500 round up.

Greater Depth Challenge:

Jessica believes that 4500 rounded to the nearest 1000 is 4000.

Is she correct?

How do you know?

Greater Depth Challenge:

Sally is thinking of a number.

When she rounds it to the nearest 1000 she gets 4,000.

When she rounds it to the nearest 10 she gets 370.

What could her number be? List all possibilities.