THE COMPASS
PARTNERSHIP OF SCHOOLS

Mental Maths

Year 4

Mental Maths – Year 4

I can count forwards and backwards in multiples of 3, 4, 5, 6, 7, 8, 9, 25, 50, 100 and 1000

Find the next two numbers:

6, 12, 18, 24,
7, 14, 21, 28, 35,
9, 18, 27, 36
25, 50, 75,
5000, 6000, 700

Hassan counts on in 25's from 250. Circle the numbers he will say.

990, 125, 300, 440, 575, 70

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

6, 12, 18, 24, 30.....
45, 36, 27, 18, 9....

Fill in the missing numbers:

14		28	35	

100			175	200

Convince me that the number 14 will be in this sequence if it is continued.

49, 42, 35, 28 ...

Always, Sometimes, Never

Hayley is counting in 25's and 1000's. She says:

"Multiples of 1000 are also multiples of 25.
Multiples of 25 are therefore multiples of 1000."

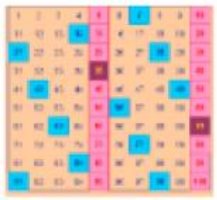
Q Are these statements always, sometimes or never true?

Mr Hamm has three disco lights. The first light shines for 3 seconds then is off for 3 seconds.
The second light shines for 4 seconds then is off for four seconds.
The third light shines for 5 seconds then is off for 5 seconds.
All the lights have just come on.

Q When is the first time all the lights will be off?
Q When is the next time all the lights will come on at the same time?

Mental Maths – Year 4

Here is a hundred square.



Some numbers have been shaded in blue, and some in pink.
Q Can you notice the pattern?
Q Why are some numbers maroon?

Work out the patterns on the parts of the hundred squares below.

Q Could there be more than one pattern?

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Mental Maths – Year 4

I can recall all multiplication and division facts for multiplication tables up to 12 x 12

Find the answers:

4 x 12 = 5 x 9 =
7 x 8 = 8 x 11

Fill in the gaps:

4 x __ = 12 8 x __ = 64
32 = 4 x __ 6 = 24 ÷ __

Leila has 6 bags with 5 apples in each.

Q How many apples does she have altogether?

Q How many multiplication and division sentences can you write that have the number 72 in them?

Complete these calculations:

7 x 8= 7 x 4 x 2=
5 x 6 = 5 x 3 x 2=
12 x 4 = 12 x 2 x 2=

Q Which calculations have the same answer?
Q Can you explain why?

Q True or false?

6 x 8 = 6 x 4 x 2
6 x 8 = 6 x 4 + 4

Explain your reasoning.

Q Which pair of numbers could go in the boxes
□ x □ = 48

I am thinking of 2 secret numbers where the sum of the numbers is 16 and the product is 48.

Q What are my secret numbers?
Q Can you make up 2 secret numbers and tell somebody what the sum and product are?

Here is part of a multiplication square.

×	4	5	6	7	8	9
4		20				
5	20					
6						
7						
8						
9						

Shade in any other squares that have the same answer as the shaded square.

Mental Maths – Year 4

I can use multiplication facts to multiply pairs of multiples of 10/100

Find the answers:

80 x 2 =	3 x 700 =	30 x 20 =
90 x 3=	400 x 3 =	40 x 60 =
50 x 8 =	800 x 9 =	60 x 90 =
90 x 5 =	5 x 400 =	40 x 80 =
20 x 6 =	70 x 50 =	

Q Can you fill in the gaps?

80 x _ = 320
_ x 70 = 350
_ x 60 = 180
70 x _ = 560
_ x 70 = 210

Q True or false?

40 x 50 = 200

Explain your reasoning.

Q If you know that 6 x 7 = 42, what else do you know?

Q Can you use your knowledge of multiplication to solve these?

450 ÷ 5 =
7,200 ÷ 9 =
280 ÷ 7 =
42,000 ÷ 6 =
4,900 ÷ 7 =
32,000 ÷ 80=
18,000 ÷ 60 =

Mental Maths – Year 4

I can double any 2 digit number

Find the answers:

Double 48 =
Double 54 =
Double 27 =
Double 33 =

Q True or false?

Doubling is the same as multiplying a number by 2 or adding the number to itself.

Prove it.

Q Always, sometimes or never?

Every time you double an even number, you get an even answer.
Every time you double an odd number, you get an odd answer.

I started with the number 12. I doubled it, added 5 and subtracted 4.

Q What is my new number?

Amy is 38 years old. Kerry is double Amy's age.

Q How old is Kerry?

Susie was making apple pies. She had 43 apples, which was enough apples for 5 pies.

Q How many apples would she need to make 10 pies?

Follow the rule and complete the first 10 numbers in these sequences:
Rule: Double and add 1
2, ….
Rule: Double and subtract 4.
7, …..

Look at this table.
Q Can you explain whether the numbers are doubling or halving?

1)	13	26		104		416
2)	480		120			
3)	96		24			
4)	19	38		152		608
5)	10			80		
6)	1120		280			35
7)	8			64		
8)	25		100			
9)	2016			252		
10)	17	34				

Now fill in the gaps in the table.

Mental Maths – Year 4

I can double any number up to 1 decimal place

I double a number between 26 and 36.
Q What could my answer be?

Roll 3 dice, arrange the digits in different ways to create different numbers.
Double each number.

Complete the table:

Number	Doubled	Answer
73	X2	
194	X2	
	X2	368
672	X2	

Double the following numbers:

a) 48.3 =
b) 23.7 =
c) 124.8 =
d) 2343.6 =

Q Always, Sometimes, Never?

Doubling an odd number always gives an even answer.

Andrew's father is double his age.

Q If Andrew is 17, how old is his father?

A number is doubled to give the answer 14.6.

Q What number was doubled?

Sophia says:

'The double of all 2 digit numbers above 49 will always give a 3 digit answer.'

Q Is she correct?

Explain why.

Double 47 and double it again.

I used the digits 8 and 3 once to make a decimal number.
Then I double the number.

Q What are the 2 possible answers?

Jasmine received £78 for her birthday. She then saved another £78 in pocket money.

Q How much money did she now have?

There are 47 children in Year 4 and each child needs two trip letters.

Q How many trip letters need to be printed for Year 4?

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Mental Maths – Year 4

I know by heart all squares of numbers between 1 and 12 and use the notation for (^{2})

Work out:
4^2=
3^2=
9 squared =
8 squared =

Circle all of the square numbers below:

10, 12, 15, 25, 30, 35, 36, 40, 49, 50

Fill in the missing answers from the grid below:

5^2	5 X 5	25
7^2	7 X 7	
12^2	12 X 12	
		16
	6 X 6	
		64
2^2		

Ella says:

'4^2 is 16.'

Q Do you agree?

Convince me.

Q Always, Sometimes, Never?
When you square an odd number you get an odd answer.

This year I will be 16 years old.

Q How many more years must I wait until my age is a square number again?

James say there are 5 square numbers below 20.

Q Is he correct?

Prove it.

List all of the square numbers between 40 and 90.

The answer to a squared number is 81.
Q What's the root number?

Two square numbers added, give the total 85.
Q What are the 2 square numbers?

Finish shading the prime numbers on the 100 square below:

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

Mental Maths – Year 4

I can multiply 3 single digit numbers

Solve:
3 x 8 x 2 =
5 x 4 x 6 =
7 x 3 x 9 =

Halima says:

'You can multiply 3 digits in any order and you will get the same answer.'

Q Do you agree?
Prove it.

Fill the gaps (using single digits):
3 x ☐ x 7 = 63
☐ x 2 x 4 = 40
5 x 7 x ☐ = 70

Q Always, Sometimes, Never?

Multiplying 3 single odd digits will give an odd answer.

Jasmine says:
7 x 3 x 8 = 170

Q Is she correct?

Explain why.

Circle 3 digits below that will multiply to give the answer 162

1 2 3 4 5 6 7 8 9

Q True or false?

12 x 5 is the same as 4 x 3 x 5

Explain.

Solve:

8 x 0 x 9 =

Circle the questions below that will give the same answer to: 3 x 24 =

5 x 3 x 2 = 2 x 12 x 3 = 6 x 4 x 3 = 7 x 3 x 2 = 8 x 3 x 3 =

Q Can you write three different questions that could make the answer **36** by multiplying 3 single digits?

Complete the table:

X	**4**	**X**
8	32	**1**
3	48	
7		**5**
2		**9**
	36	**3**
0		**6**

Mental Maths – Year 4

I know prime numbers up to 20

Circle all of the prime numbers below:

3 5 9 15 18 19

Lucia says:
'The number 1 is not a prime number'.

Q Do you agree?

Explain.

Q True or false?

All odd numbers are prime numbers.

Prove it.

Write down all of the prime numbers up to 20.

Q Always, Sometimes, Never?

If you add a prime number to another prime number, the answer will also be a prime number.

Explain.

Arrange any of the cards below to make 5 prime numbers below 20:

Sort these numbers into prime and not prime:

2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19

PRIME	NOT PRIME

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Mental Maths – Year 4

I can count backwards through 0 to include negative numbers

Fill in the missing numbers:

5, 4, ____, 2, 1, ____, -1, ____, ____, -4

Solve:

a) 4 – 7 =
b) 9 – 10 =
c) 3 – 15 =

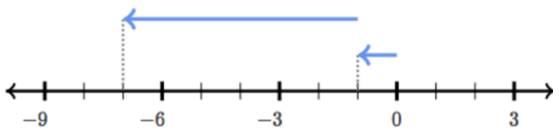
Complete the sequence:

-12, - 9, - 6 , _____, _____

Q Can you spot the mistake?

7, 5, 3, 1, 0, -3

Q What numbers are the arrows pointing to?



On the 1st of January the temperature was -2 degrees. The temperature dropped by 3 degrees the following day.
Q What was the temperature the following day?

Olivia counts forwards and backwards in 10s from the number 47.

Q Circle the numbers that Olivia could count.

26 37 0 - 5 17 - 10 - 27 - 7

Emila says:

'5 minus 8 = 0'

Q Is she correct?

Explain.

Mental Maths – Year 4

I can round any given number to the nearest 10, 100, 1000

Round the following numbers to the nearest
a) 10
b) 100
c) 1000

79 645 2378

A school had 372 children on roll.

Q What is this to the nearest hundred?

Jessica says:

'328 to the nearest 100 is 400'

Q Do you agree with Jessica?

Explain why.

Ava rounds a number to the nearest 10 and gets the answer 340.

Q What could Ava's number be?

Give all possible answers.

Complete the table below:

Lowest possible whole number	Nearest 10	Highest possible whole number
65	70	74
	90	
	240	
455		

When a number is rounded to the nearest 100 it is 200. When the same number is rounded to the nearest 10 it is 250.

Q What could the number be?

Circle the numbers below that round to 5000 (nearest 1000):

5345 5521 4389 4742 5118 4891

The school orders new paint brushes. The brushes come in packs of 10.

Q How many packs do they need for 237 children?

Q Which question rounds to give the highest number?

a) 6478 to the nearest 1000
b) 5988 to the nearest 100
c) 6234 to the nearest 100