

Parent Fluency Workshop Year 5 & 6



Nov 18-14:08

The aims of this workshop are to:

* Help you understand what **fluency** in Maths is.

* **Games** and **ideas** on how you can help your child at home to **improve** these skills.



In Year 5

Mathematics: Place Value & 5

Operations - by the end of the year:

- Count forwards and backward with positive and negative numbers through zero.
- Count forwards/backwards in steps or powers of 10 for any given number up to 7,000,000.
- Compare and order numbers up to 10,000,000.
- Compare and order numbers with 2 decimal places.
- Read Roman numerals to 1,000.
- Identify all multiples and factors, including finding all factor pairs.
- Use known tables to derive other number facts.
- Recall prime numbers up to 19.
- Recognise and use square numbers and cube numbers.
- Recognise place value of any number up to 1,000,000.
- Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 or 100,000.
- Round decimals with 2 decimal places to nearest whole number and 1 decimal place.
- Add and subtract:
 - Numbers with more than 4-digits using formal written method.
 - Use rounding to check answers.
- Multiply:
 - 4-digits by 1-digit/ 2-digit
- Divide:
 - Up to 4-digits by 1-digit
- Multiply & divide:
 - Whole numbers & decimals by 10, 100 and 1,000
- Recognise and use thousandths.
- Recognise mixed numbers and improper fractions and convert from one to another.
- Multiply proper fractions and mixed numbers by whole numbers.
- Identify and write equivalent fractions.
- Solve time problems using timetables and converting between different units of time.



These are all the skills you can help develop at home.

In Year 6

Mathematics: Place Value & 5

Operations - by the end of the year:

- Use negative numbers in context and calculate intervals across zero.
- Compare and order numbers up to 10,000,000.
- Identify common factors, common multiples and prime numbers.
- Round any whole number to a required degree of accuracy.
- Identify the value of each digit to decimal places.
- Use knowledge of order of operations to carry out calculations involving four operations.
- Multiply:
 - 4-digit by 2-digit
- Divide:
 - 4-digit by 2-digit
- Add and subtract fractions with different denominators and mixed numbers.
- Multiply simple pairs of proper fractions, writing the answer in the simplest form.
- Divide proper fractions by whole numbers.
- Calculate % of whole number.

Year 6 have to consolidate all objectives from Y3 to Y5 and learn some new ones too:

These are all the skills you can help develop at home.



Place Value is key to children's understanding of all aspects of Maths

9 8 , 3 4 9 , 1 2 6

partitioning numbers into place value is an essential skill

ninety-eight million, three hundred and forty nine thousand, one hundred and twenty-six

Get children to read and write numbers!

90,000,000 + 8,000,000 + 300,000 + 40,000 + 9000 + 100 + 20 + 6

place holders

Place Value is key to children's understanding of all aspects of Maths

5 , 2 1 7 . 4 2

partitioning numbers into place value is an essential skill

five thousand, two hundred and seventeen point four two.

5000+200+10+7+0.4 + 0.02 = 5,217.42

place holders

< **>** **=** *Place Value*

less than greater than equal to

Use these mathematical symbols to compare and talk about place value

$676 > 667$

$22 + 8 = 2 \times 15$

$140 + 3 + 7 < 151$

Estimation

$$34 + 59 =$$

$$4 \times 21 =$$

$$1000 - 562 =$$

Being able to estimate is a mathematical skill that children will be able to apply to all calculations.

It demonstrates their understanding of all operations.

Using a 100 / 200 Square

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

Lots of work on:

- * reading and then writing the number
- * 10 more, 10 less
- * Support with times tables
- * Counting backwards and forwards

The aim is for children to be able to visualise the number square in their minds.

Use the 100 Square to support times tables

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

What's special about all the numbers I have highlighted so far? What will the next 8 be in the sequence? How do you know? Can you see a pattern forming? Who can explain it?

Nov 26-14:24

Challenge...

Think carefully about place value and what the rule is for each problem.

1235	
	2335

4455	
	6455
6555	

		1304
		3204

Times Tables

1 times table	2 times table	3 times table	4 times table
1 x 1 = 1	2 x 1 = 2	3 x 1 = 3	4 x 1 = 4
1 x 2 = 2	2 x 2 = 4	3 x 2 = 6	4 x 2 = 8
1 x 3 = 3	2 x 3 = 6	3 x 3 = 9	4 x 3 = 12
1 x 4 = 4	2 x 4 = 8	3 x 4 = 12	4 x 4 = 16
1 x 5 = 5	2 x 5 = 10	3 x 5 = 15	4 x 5 = 20
1 x 6 = 6	2 x 6 = 12	3 x 6 = 18	4 x 6 = 24
1 x 7 = 7	2 x 7 = 14	3 x 7 = 21	4 x 7 = 28
1 x 8 = 8	2 x 8 = 16	3 x 8 = 24	4 x 8 = 32
1 x 9 = 9	2 x 9 = 18	3 x 9 = 27	4 x 9 = 36
1 x 10 = 10	2 x 10 = 20	3 x 10 = 30	4 x 10 = 40
1 x 11 = 11	2 x 11 = 22	3 x 11 = 33	4 x 11 = 44
1 x 12 = 12	2 x 12 = 24	3 x 12 = 36	4 x 12 = 48

Year 2
2, 5, 10

Year 3:
Revise Y2

3, 4, 8 and 11

Year 4

revise Y3

6, 7 and 9

12- through the other times tables

Year 5 & 6 - they need to know all facts up to 12 x 12

Not just about multiplication, also need to know the relevant division facts

Make times table memory cards.

Sep 23-18:28

In school we do the Number Challenge & Spring Slam to promote times tables.

SPRING SLAM
ROUND 4
YEARS 5&6 YOU HAVE 5 MINUTES TO ANSWER THESE QUESTIONS

NAME	CLAS	DOES	SCORE
1) $8 \times 12 =$	18) $6 \times \square = 420$	30) $11 \div \square = 1$	
2) $9 \times 8 =$	19) $\square \times 7 = 490$	31) $11 \times 110 =$	
3) $4 \times 6 =$	20) $\square = 8 \times 8$	32) $12 \times 120 =$	
4) $12 \times 9 =$	21) $42 \div \square = 7$	33) $48 \div 12 =$	
5) $8 \times 6 =$	22) $8 \times 20 =$	34) $60 \times 60 =$	
6) $10 \times 3 =$	23) $\square = 30 \times 6$	40) $54 \div 6 =$	
7) $7 \times 8 =$	24) $9 \times 20 =$	41) $14 \times 7 =$	
8) $7 \times 4 =$	25) $4 \times \square = 24$	42) $70 \times 12 =$	
9) $0 \times 12 =$	26) $7 \times \square = 84$	43) $1.2 \div 2 =$	
10) $11 \times 11 =$	27) $30 \times 7 =$	44) $160 \div 40 =$	
11) $5 \times 5 =$	28) $\square \div 4 = 48$	45) $1200 \div 12 =$	
12) $11 \times 12 =$	29) $12 \times \square = 96$	46) $0.3 \times 3 =$	
13) $5 \times 11 =$	30) $\square = 3 \times 3$	47) $0.8 \times 80 =$	
14) $7 \times 7 =$	31) $\square \times 8 = 640$	48) $12 \times 0.4 =$	
15) $6 \times 10 =$	32) $9 \times \square = 640$	49) $0.1 \times 11 =$	
16) $7 \times 5 =$	33) $60 \div \square = 7$	50) $0.2 \times 0.8 =$	
17) $6 \times 12 =$	34) $\square \times 12 = 108$		

Not just times tables, but includes missing boxes, division and decimal related facts.

1. $81 \div 9 =$	9	34. $100 \div 12 =$	8	67. $36 \div 9 =$	4
2. $1 \times 7 =$	7	35. $6 \times 7 =$	42	68. $6 \times 12 =$	72
3. $50 \div 10 =$	5	36. $84 \div 7 =$	12	69. $121 \div 11 =$	11
4. $4 \times 4 =$	16	37. $12 \times 4 =$	48	70. $5 \times 7 =$	35
5. $8 \times 5 =$	40	38. $3 \times 7 =$	21	71. $27 \div 9 =$	3
6. $8 \times 12 =$	96	39. $48 \div 8 =$	6	72. $2 \times 9 =$	18
7. $12 \times 12 =$	144	40. $9 \times 9 =$	81	73. $60 \div 10 =$	6
8. $10 \times 10 =$	100	41. $54 \div 6 =$	9	74. $12 \times 8 =$	96
9. $6 \times 6 =$	36	42. $30 \div 5 =$	6	75. $8 \times 7 =$	56
10. $10 \times 10 =$	100	43. $24 \div 12 =$	2	76. $80 \div 10 =$	8
11. $6 \times 5 =$	30	44. $48 \div 6 =$	8	77. $7 \times 11 =$	77
12. $80 \div 10 =$	8	45. $60 \div 10 =$	6	78. $3 \times 9 =$	27
13. $5 \times 12 =$	60	46. $9 \times 6 =$	54	79. $40 \div 5 =$	8
14. $5 \times 7 =$	35	47. $7 \times 8 =$	56	80. $48 \div 8 =$	6
15. $45 \div 7 =$	6	48. $6 \times 8 =$	48	81. $54 \div 6 =$	9
16. $8 \times 4 =$	32	49. $84 \div 8 =$	10	82. $3 \times 7 =$	21
17. $12 \times 12 =$	144	50. $6 \times 10 =$	60	83. $7 \times 10 =$	70
18. $5 \times 10 =$	50	51. $120 \div 10 =$	12	84. $90 \div 9 =$	10
19. $80 \div 8 =$	10	52. $72 \div 9 =$	8	85. $5 \times 12 =$	60
20. $80 \div 10 =$	8	53. $10 \times 10 =$	100	86. $8 \times 9 =$	72
21. $84 \div 12 =$	7	54. $72 \div 8 =$	9	87. $15 \times 4 =$	60
22. $5 \times 10 =$	50	55. $7 \times 10 =$	70	88. $6 \times 9 =$	54
23. $8 \times 10 =$	80	56. $36 \div 7 =$	5	89. $2 \times 7 =$	14
24. $3 \times 10 =$	30	57. $3 \times 10 =$	30	90. $4 \times 5 =$	20
25. $35 \div 5 =$	7	58. $99 \div 9 =$	11	91. $152 \div 12 =$	12
26. $8 \times 10 =$	80	59. $4 \times 10 =$	40	92. $48 \div 12 =$	4
27. $3 \times 10 =$	30	60. $4 \times 10 =$	40	93. $18 \div 9 =$	2
28. $8 \times 10 =$	80	61. $4 \times 10 =$	40	94. $4 \times 12 =$	48
29. $36 \div 12 =$	3	62. $7 \times 12 =$	84	95. $3 \times 3 =$	9
30. $42 \div 7 =$	6	63. $1 \times 10 =$	10	96. $7 \times 10 =$	70
31. $60 \div 10 =$	6	64. $9 \times 9 =$	81	97. $50 \div 5 =$	10
32. $108 \div 12 =$	9	65. $25 \div 5 =$	5	98. $120 \div 12 =$	10
33. $72 \div 12 =$	6	66. $11 \times 10 =$	110	99. $120 \div 10 =$	12

TIMES TABLE CARD GAME



* You need ace to queen for each partner. They don't need to be the same suit.

* Decide on a times table you want to practice. Then you put down a random card.

* If you get the times table correct, then you keep it. If you are wrong, then this is a times tables you need to practise.

Stretch & Apply -

King = x13



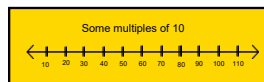
Sep 27-16:20

Rounding

Using a number line helps children visualise rounding.

Once they understand, then you teach them the tricks:

4 or less - let it rest
5 or above - give it a shove



87

When rounding to the nearest 10, look at the 1s (ones) column

When rounding to the nearest 100, look at the 10s (tens) column

When rounding to the nearest 1000, look at the 100s (hundreds) column

When rounding to the nearest 10,000, look at the 1000s (thousands) column

34,562

Nearest 10 =
Nearest 100 =
Nearest 1000 =
Nearest 10,000 =

Reasoning & Explanation

Reasoning Challenge

Dora says all prime numbers have to be odd.

Her friend Abdul says that means 9, 27 and 45 are prime numbers.

Explain Abdul and Dora's mistakes and correct them.

Get children talking about what they know by applying their mathematical understanding.

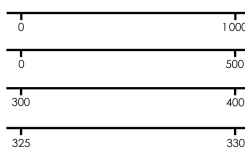
Reasoning & Explanation

True or False?

- 1 is a factor of every number.
- 1 is a multiple of every number.
- 0 is a factor of every number.
- 0 is a multiple of every number.

Number lines

Show the position of 328 on each number line.



Key Vocabulary:

add addition and plus count on more
increase makes sum total altogether

ADDITION

Year 2 & 3

Column partitioning. Partitioning both numbers into tens and ones where ones are placed under ones and tens under tens to prepare children for formal columnar methods.

$13 + 46 = 10 + 3 + 40 + 6$

$50 + 9 = 59$

Year 3

Expanded column method adding the ones first, then tens, then the hundreds

$67 + 43 = 110$

$10 (7+3)$
 $100 (60+40)$
 110

$126 + 54 = 180$

$10 (6+4)$
 $70 (20+50)$
 $100 (100+0)$
 180

- continue to use in Y4

Use expanded column method when adding money, beginning with decimals that require no carrying and then move onto carrying the tenths or hundredths only

$\pounds 2.50 + \pounds 1.75 = \pounds 4.25$

$5 (5p + 0p)$
 $\pounds 1.20 (50p + 70p)$
 $\pounds 3.00 (\pounds 2.00 + \pounds 1.00)$
 $\pounds 4.25$

Year 4

Compact column method without carrying
Children add from least significant number without carrying

H	T	O
3	4	2
+ 57		
3	9	9

Add the ones first, then the tens and lastly, the hundreds

Compact column method, carrying below the line (ONES only)

H	T	O
6	2	5
+ 48		
6	7	3
1		

Children will begin with carrying only the ones below the line. $5+8=13$. Record the 3 in the ones column, carrying the 1 ten.

Year 5 & 6

Add decimals with different numbers of places and different numbers of digits

124.9	124.9
<u>86.3</u>	<u>117.25</u>
211.2	242.15
111	11

Once children have understood and grasped compact column addition, it's all about place value and decimals.

Compact column method, carrying ones, tens, hundreds and thousands

7648	6584	42
<u>+ 1486</u>	<u>+ 5848</u>	6432
9134	12432	786
111	111	1
		<u>+ 4681</u>
		11944
		121

MAKE IT FUN!

Using Dice for Games

- rolling dice and asking about number bonds
- adding together
- subtracting
- multiplying
- 4 digits + 4 digits (make some numbers decimals)
- 4 digits - 3 digit
- 3 digit x 2 digit

Increase digits as your child becomes more confident

So many ways to use and support fluency!

Closest to 1000.

Player 1
Closest to 1000.

○	○	○
○	○	○
○	○	○

Player 2
Closest to 1000.

○	○	○
○	○	○
○	○	○

- Each player draws the game board.
- Roll the dice - you must place it in one of the circles
- Once you have rolled 9 times - add up the scores. Closest to 1000 wins.

Extend by creating three 4 digit numbers and making the total closest to 10,000

Mar 1-17:59

Factors & Multiples Game!

This is a game for two players.

The first player chooses a positive even number that is less than 50, and puts a counter on the number on the grid.

The second player chooses a number to put a counter on. The number must be a factor or multiple of the first number.

Players continue to take it in turns at each stage choosing a number that is a factor or multiple of the previous number.

The first person who is unable to put down a counter loses.

Stretch & Apply

- * Can you and your partner find the shortest train of numbers? What about the longest? What numbers are most likely to ensure your partner loses? Why?
- * Try this game on a 100-200 square.

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

When it's your turn
Roll both dice, arrange the digits to make a number and say the number.
Find a square on the grid that describes that number and put a counter there. If there is no description that fits, roll the dice again. Keep playing until you both have used up your counters.

The end of the game
Count up how many lines of three you have made. Lines can go sideways, up and down or diagonally.
The player with the most lines of three is the winner.
Take off the counters and play again. Keep playing until one player has won three games.

odd	less than 33	multiple of 3	even	multiple of 2
multiple of 10	odd	multiple of 4	multiple of 5	less than 71
multiple of 2	multiple of 5	odd	multiple of 4	multiple of 3
even	multiple of 2	greater than 70	more than 90	multiple of 4
more than 60	even	multiple of 3	multiple of 10	multiple of 5

What are your strategies to win?

Have you noticed anything when you are trying to get 4 in a row?

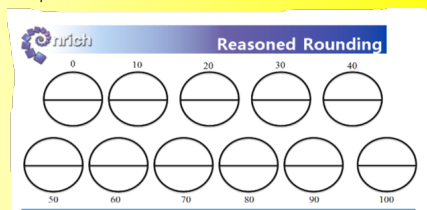
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Nov 22-10:10

Reasoned rounding

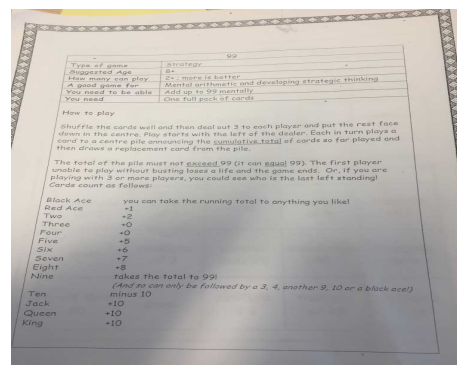
Roll the dice 2 times. Make a 2 digit number.
Decide which multiple of 10 to round it to. Record the number in the circle.

When 2 numbers have been recorded in the circle, the second person shades the circle in their colour. At the end the person with the most shaded circles wins.



Mar 1-17:59

Card Games - 99



Nov 22-10:13

Reminders...

Interactive Resources

username: primrose

password: primrosehill

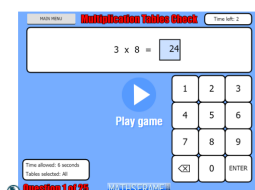
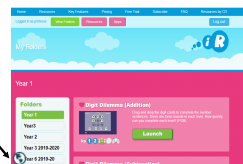
Google Classroom

Home Learning Activities

Maths Frame

- free for times

table practice



Thank you for
coming!
Questions?