

Problem solving

Problem solving- word problems to solve as a class or individually and not connected to current Maths lessons. Reading the question carefully, working out what the key information is, what method is required, how to solve a problem, the best layout etc. all needs thought and discussion. Use White Rose Maths and Classroom Secrets as part of your planning.

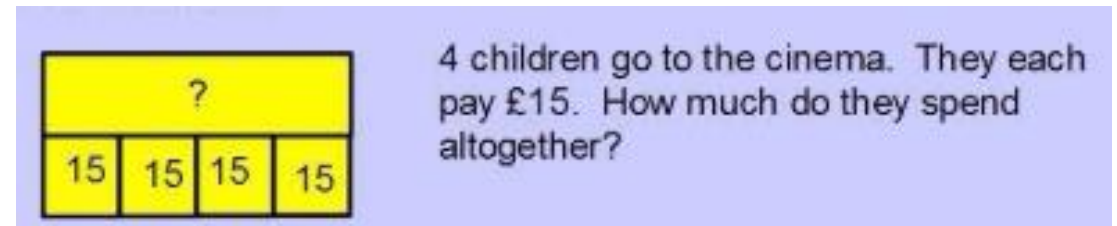
Whole class thinking time (non competitive chance to explore ideas).

- Here is a problem?
- How would you solve it?
- Can you explain why you chose that method?
- Has anyone got a different way of solving it?
- Which method do you prefer and why?
- Thinking time for children: creating the opportunity.

Bar modelling

Bar modelling is a very important part of this- creating a picture that a child can use to start to work out a solution.

Bar modelling needs to be taught in each year group – creating a picture of a problem and showing what you know and what to find out. It is a key aid in supporting children to explain their ideas.



Regular practice

- Key to assessing what the children do and do not know
- Arithmetic tests – Working needs to be on squared paper in their books or on paper
- Mental Maths is about practice, improving scores, showing best methods, visuals and scaffolds for some are key – it's not just a test.

The basis – core Maths needs regular practice each day.

- Early morning work – a few questions each day to work on as they arrive in their books.
- Children need to know number bonds and times tables
- Also, the best way to keep new ideas fresh in children's minds is when a topic is completed, keep it going in everyday practice time.

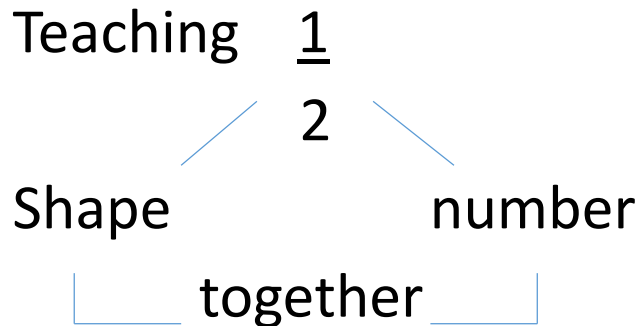
Planning

75% = number.

This is the way to go – teaching to be taught in big blocks. E.g. Addition could be taught over 3 weeks, covering everything you need to know in a logical order. For example, you can't teach column addition before doubles, near doubles and single digit addition strategies. Planning to incorporate a mixture of sources: Collins, White Rose, Classroom Secrets, etc.

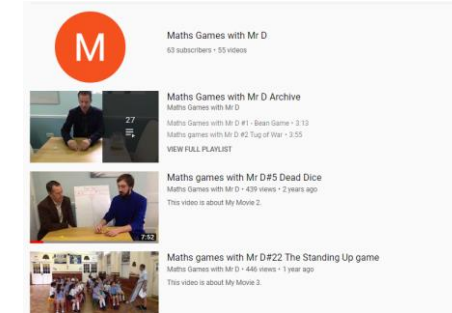
Rethinking blocks:

E.g. Fraction of number and shape taught together



Maths starters need to be a mixture of:

1. Games
2. Reasoning
3. Basic practice
4. Building of knowledge/ drip approach. E.g. Target number 14.



Order of planning:

Place value

Addition

Subtraction

Multiplication

Division

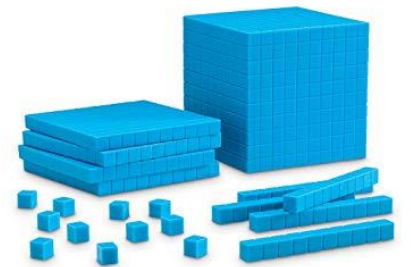
Fractions, decimals and percentages

Mathematical reasoning

Mathematical reasoning-posing questions that need thinking about and allow children time to explore how they have worked out an answer and listen to other children's methods- White Rose Maths, Classroom Secrets, 'Thinking for Ourselves' book and discussion cards in each year group.

Giving children enough time to explain their Mathematical thinking or methods. To really understand a concept a child needs to be able to explain it clearly.

Base 10 for all four operations is a key tool to aid children in explaining their ideas in a logical, ordered and understandable way.



Vocabulary focus

Vocabulary focus:

- Vocabulary is key to Maths. The correct use of language helps us to explain our ideas.
- The language we use as a model helps the children understand and communicate their own ideas with greater clarity.
- We need to use a mixture of visual resources and modelling of the correct use of vocabulary as we explain our ideas. We then need to give the children opportunities to explore the ideas themselves and explain their thinking.

Children need to be given the time to explain their understanding of language and ideas around words; using them in the right context. (Some answers do not need to be rushed.)

Oral counting aloud

Oral counting aloud- a very important skill to hear number but be mindful that sometimes children need to see the numbers written down (helps them to see patterns)- key tricky areas 12,13,14,15,16,17 etc. sounding like 30,40 50 etc. Forwards, backwards, starting from any number including negative numbers and fractions.

Open-ended investigation

Open-ended investigations-to explore Maths through investigations like-‘We can do it’ and ‘Talk Ask it’-problems that may have more than one solution or method of working out. A time for allowing children a chance to explain their thinking-how they got the answer. A chance for group or paired work-less formal.

Arithmetic and Mental Maths

Arithmetic and Mental Maths- to be done alternatively in two-week cycle each fortnight.

Mental Maths is great for assessment of class and Arithmetic to practise and assess basic number work.

Year 6 Core Arithmetic Test 1		
1	$675 \div 1$	<input type="text"/>
2	$845 \div 10$	<input type="text"/>
3	98×1	<input type="text"/>
4	$\frac{2}{3} \times 30$	<input type="text"/>
5	48×0	<input type="text"/>
6	$6724 + 2159$	<input type="text"/>
7	$84 \div 3$	<input type="text"/>

EMA 1 WEEK, WEEK 101

Autumn Test 1

Questions, Answers and Topic Information

Here's the marking information for this paper: **Q1** = 20 marks, the two short-answer questions are 10 each, and the 10 MCQs = 40.

Q1 is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q2** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q3** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q4** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q5** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q6** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q7** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q8** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q9** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q10** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well.

Q11 is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q12** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q13** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q14** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q15** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q16** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q17** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q18** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q19** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q20** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well.

Q21 is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q22** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q23** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q24** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well. **Q25** is a challenge for the individuals, but anyone who gives a good, well-structured, well-reasoned answer will score well.

► Now we are ready to start the test.

	ANSWERS	TOPICS
For this question of questions you will have 3 seconds to work on each answer and write it down.		
1. How many days in a year?	365	A
2. How many months in a year?	12	A
3. How many hours in a day?	24	A
4. How many minutes in an hour?	60	A
5. How many seconds in a minute?	60	A
6. How many days in a week?	7	A
7. How many hours in a week?	168	A
8. How many minutes in a week?	10,080	A
9. How many seconds in a week?	604,800	A
10. How many days in a year?	365	A
11. How many months in a year?	12	A
12. How many hours in a day?	24	A
13. How many minutes in an hour?	60	A
14. How many seconds in a minute?	60	A
15. How many days in a week?	7	A
16. How many hours in a week?	168	A
17. How many minutes in a week?	10,080	A
18. How many seconds in a week?	604,800	A
19. How many days in a year?	365	A
20. How many months in a year?	12	A
21. How many hours in a day?	24	A
22. How many minutes in an hour?	60	A
23. How many seconds in a minute?	60	A
24. How many days in a week?	7	A
25. How many hours in a week?	168	A
26. How many minutes in a week?	10,080	A
27. How many seconds in a week?	604,800	A
28. How many days in a year?	365	A
29. How many months in a year?	12	A
30. How many hours in a day?	24	A
31. How many minutes in an hour?	60	A
32. How many seconds in a minute?	60	A
33. How many days in a week?	7	A
34. How many hours in a week?	168	A
35. How many minutes in a week?	10,080	A
36. How many seconds in a week?	604,800	A
37. How many days in a year?	365	A
38. How many months in a year?	12	A
39. How many hours in a day?	24	A
40. How many minutes in an hour?	60	A
41. How many seconds in a minute?	60	A
42. How many days in a week?	7	A
43. How many hours in a week?	168	A
44. How many minutes in a week?	10,080	A
45. How many seconds in a week?	604,800	A
46. How many days in a year?	365	A
47. How many months in a year?	12	A
48. How many hours in a day?	24	A
49. How many minutes in an hour?	60	A
50. How many seconds in a minute?	60	A
51. How many days in a week?	7	A
52. How many hours in a week?	168	A
53. How many minutes in a week?	10,080	A
54. How many seconds in a week?	604,800	A
55. How many days in a year?	365	A
56. How many months in a year?	12	A
57. How many hours in a day?	24	A
58. How many minutes in an hour?	60	A
59. How many seconds in a minute?	60	A
60. How many days in a week?	7	A
61. How many hours in a week?	168	A
62. How many minutes in a week?	10,080	A
63. How many seconds in a week?	604,800	A
64. How many days in a year?	365	A
65. How many months in a year?	12	A
66. How many hours in a day?	24	A
67. How many minutes in an hour?	60	A
68. How many seconds in a minute?	60	A
69. How many days in a week?	7	A
70. How many hours in a week?	168	A
71. How many minutes in a week?	10,080	A
72. How many seconds in a week?	604,800	A
73. How many days in a year?	365	A
74. How many months in a year?	12	A
75. How many hours in a day?	24	A
76. How many minutes in an hour?	60	A
77. How many seconds in a minute?	60	A
78. How many days in a week?	7	A
79. How many hours in a week?	168	A
80. How many minutes in a week?	10,080	A
81. How many seconds in a week?	604,800	A
82. How many days in a year?	365	A
83. How many months in a year?	12	A

Early morning work

Early morning work-basic key skills practice-5/10 questions on number bonds, addition and subtraction, multiplication and division, times tables, fractions, area, shape etc.

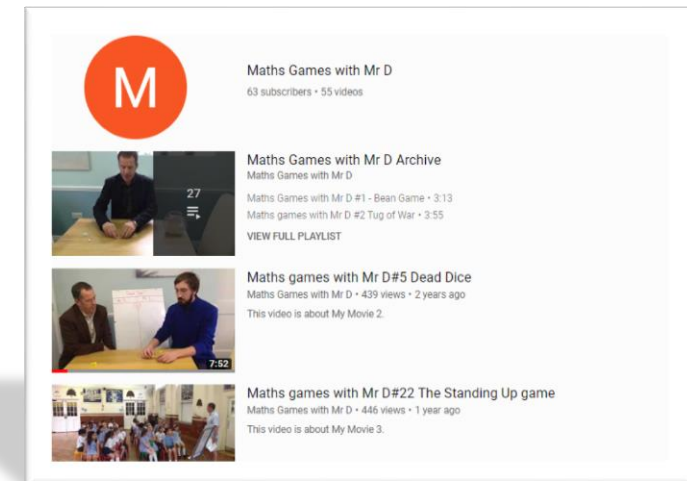
A rolling programme of always adding new concepts just experienced is very successful. For example if you have just finished a topic on fractions and are moving on to a new topic drip in different fraction questions into the early morning work.

Maths games

Maths games to make Maths fun and inclusive for all, to break phobias about Maths, practise basic skills-engage whole class as one.

Introduced to the school as part of the Maths Curriculum because it is a fun, inclusive way to practise ideas in Maths and imbed key knowledge. It helps to break down a culture that it is ok to be poor at Maths.

The Whole School Maths assembly on Windsor Drive is a celebration of mathematical success throughout the school and a promotion of the subject in a positive way with children (and adults) participating in games.



- Created by Nick Davis
- Thank you to Leah Grogan