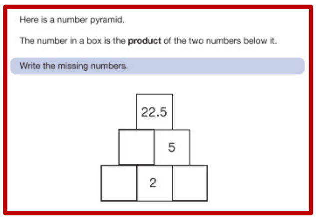
AREAS COVERED BY THE ALGEBRA AND INVERSES PUZZLES COMPENDIUM

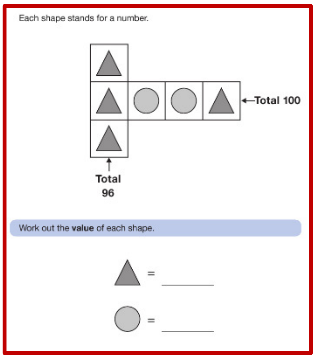
1. Single number inverses (addition and subtraction only)
2. Single number inverses (all operations)
3. Multiple number inverses (all operations)
4. Number machines - one step inverses (addition and subtraction only)
5. "Number Pyramids"[1] (addition and subtraction)
6. Boxes and reversing arrows (addition and subtraction only)
7. Number machines - one step inverses (all operations)
8. "Number Pyramids"[1] (multiplication and division)
9. Boxes and reversing arrows (all operations)
10. Sequences - The gaps between numbers are equal. The child works out the end numbers.
11. Sequences - The child is given the end numbers. They have to work out equally spaced numbers between them.
12. Sequences - The children are given a rule to follow (includes inverses)
13. Balanced scales
14. Unbalanced scales[2]
15. I'm thinking of a number problems
16. Substitution into formulae - Formulae in words
17. Substitution into formulae - Formulae in letters
18. Substitution into formulae - Formulae in tables
19. Substitution into formulae and calculating inverses - Formulae in words
20. Substitution into formulae and calculating inverses - Formulae in letters
21. Substitution into formulae and calculating inverses - Formulae in tables
22. Times tables grids
23. 2016 symbols[3]
24. Algebra worded problems
25. Making an equation (from tables)
26. Making an equation (from diagrams)
27. Pictures (2006 circles)[4]
28. Pictures (2018 hexagons)[5]
29. Missing digits in addition and subtraction vertical standard written method

[1] These puzzles are named "number pyramids" in the 2015 Sample Paper, Paper 3, Question 14. They are not pyramids, but since this is the terminology that is used in SATs tests, we feel that we should use the same terminology, even if it is erroneous.

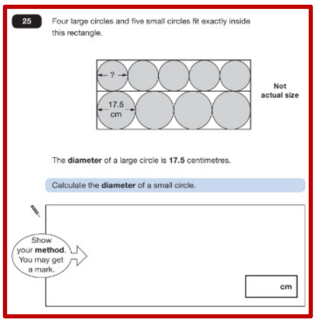


[2] (Unbalanced Scales) As yet, this type of question has not appeared in any SATs papers, but given that asking the children to work out the mass of a weight that is on a set of balanced scales is fairly common, it is fair to assume that in the future they may be asked to calculate the mass that would balance the scales.

[3] (2016 symbols) In these questions the child has to work out the value of the triangle symbols by dividing the given total by the number of symbols. They then use this to calculate the value of the circle symbol. This type of question is taken from the 2016 Paper 3, Question 4, and has appeared in several other papers.



[4] (2006 Circles) In this type of question the child has to realise that, given the length of two lines of objects is the same, they need to multiply the dimension they know by the number of times it appears and then divide by the frequency of the dimension they don't know. This type of question is taken from the 2006 Paper B, Question 25, and has appeared in several other papers.



[5] (2018 Hexagons) This type of question requires the children to realise that the difference between the two sets of shapes is one hexagon, and therefore the value of a hexagon is the difference between the two totals. They can then use this to calculate the value of the other shape. An example of this type of question is taken from the 2018 Paper 2, Question 21.