Mental calculations − James and Tony

Objectives

The relevant framework objectives are:

- add and subtract mentally 'a near multiple of 10' to or from a two−digit number (key objective)
- know by heart all addition and subtraction facts for each number to 20 (key objective)
- check subtraction with addition, halving with doubling and division with multiplication.

Activity description

The pupils worked out the answer to questions that involved adding or subtracting two or more two−digit numbers.

Some pupils used number lines to work out their answers and others worked out the answers in their heads.

Commentary

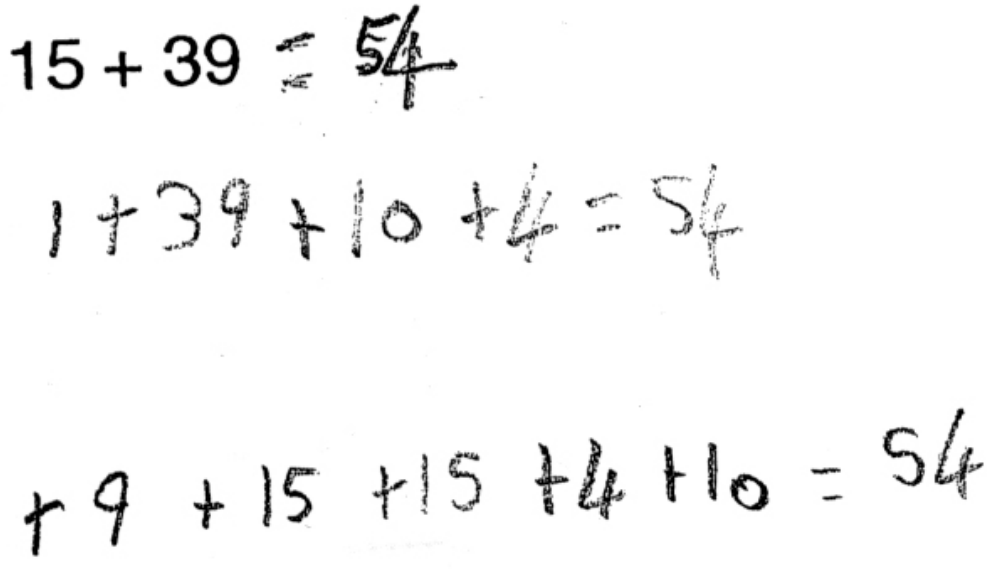
James has used the 'number bonds' that he knows by heart to add larger numbers. Tony has checked his answers using the inverse operation and has recorded his work in number sentences. Both Tony and James carried out the calculations mentally but were asked by the teacher to use jottings to show the methods they used.

Mental addition and subtraction of pairs of two−digit numbers demonstrates performance at level 3 of Ma2. In addition, Tony and James have demonstrated good recall of addition and subtraction facts to 20, which is also typical of level 3.

They now need to develop and refine strategies for dealing with more complex addition and subtraction questions and select the most appropriate strategy.

Items of work

James's informal method of adding a pair of two−digit numbers



Tony checks his method using the inverse operation

30 + 41 = 71

30 + 40 = 70 70 + 1 = 71

71 − 40 = 31 31 − 1 = 30

24 - 18 = 6

20 − 18 = 2 2 + 4 = 6

18 + 6 = 24

12 + 20 + 18 = 50

12 + 20 = 32 32 + 8 = 40 40 + 10 = 50

About this entry

Subject:	mathematics
Year:	3
Key stage:	2
NC programme of study:	Ma2p2d, Ma2p3a, Ma2p3e
Attainment target:	Ma2
Evidence for:	level 3

Framework for teaching mathematics − objectives:

- Know by heart: all addition and subtraction facts for each number to 20;
- Add and subtract mentally a 'near multiple of 10' to or from a two−digit number.