



Timed mental exercise – Harry and Ishrat

Objectives

The relevant framework objectives are:

- know by heart multiplication facts for 2, 3, 4, 5 and 10 times tables (key objective)
- derive quickly division facts corresponding to the 2, 3, 4, 5 and 10 times tables (key objective)
- explain methods and reasoning about numbers orally and in writing
- begin to know multiplication facts for 6, 7, 8, and 9 times tables
- partition (eg $23 \times 4 = (20 \times 4) + (3 \times 4)$)
- use known number facts and place value to multiply and divide integers.

Activity description

The pupils do timed exercises to improve their mental recall and to develop mental strategies. They are encouraged to improve on their time each week.

Commentary

Harry has shown that he is able to partition and use known facts to derive other facts, for example using 10 multiplied by 6 and 6 multiplied by 6 to work out 16 multiplied by 6.

He is using mental recall of the 2, 3, 4, 5 and 10 times tables, and deriving the associated division facts. This work demonstrates performance at level 3 in Ma2.

Ishrat's recording shows he understands that to multiply by 40 he needs to multiply by 4 and then multiply his answer by 10. He is beginning to move towards using long multiplication. Ishrat's work demonstrates performance within level 4 of Ma2.



Items of work

Harry's timed exercises

$$25 \div 5 = 5 \quad \checkmark$$

$$102 \div 2 = 51 \quad \checkmark$$

$$19 \times 3 = 57 \quad \checkmark$$

$$440 \div 4 = 110 \quad \checkmark$$

$$27 \times 2 = 54 \quad \checkmark$$

$$66 \div 3 = 22 \quad \checkmark$$

$$46 \times 2 = 92 \quad \checkmark$$

$$16 \times 6 = 96 \quad \checkmark$$



Harry's explanation of his answers

Harry explained how some of his answers were arrived at:

'16 lots of 6 is 10 lots of six, and 6 lots of 6, 60 and 36 makes 96.'

'102 divided by 2, is 100 divided by 2 to make 50 and 2, divided by 2 to make 1, 50 and 1 makes 51.'

'19 multiplied by 3 is 3 lots of 20 take away 3 lots of 1, 60 take away 3 is 57.'



Ishrat's recording of how he worked out his answers

$$\begin{array}{r} 49 \times \\ \underline{4} \\ 196 \end{array} \quad \begin{array}{r} 52 \times \\ \underline{7} \\ 364 \end{array} \quad \begin{array}{r} 41 \times \\ \underline{3} \\ 123 \end{array}$$

$$196 \times 10 = 1960 \quad 364 \times 10 = 3640 \quad 123 \times 10 = 1230$$

so $49 \times 40 = 1960 \quad 52 \times 70 = 3640 \quad 41 \times 30 = 1230$



About this entry

Subject: mathematics

Year: 4

Key stage: 2

NC programme of study: Ma2p1b, Ma2p3f, Ma2p3h, Ma2p3j

Attainment target: Ma2

Evidence for: level 3, level 4

Framework for teaching mathematics – objectives:

- Know by heart: multiplication facts for 2, 3, 4, 5 and 10 times–tables.
- Derive quickly: division facts corresponding to 2, 3, 4, 5 and 10 times–tables.