M1. Any set of four digits which make the calculation correct, eg:

$\boxed{3}\boxed{5}\boxed{0}$ ÷ 10 = $\boxed{3}\boxed{5}$

> *Accept 300 ÷ 10 = 30*
> *All four digits must be given.*
> ***Do not*** *accept*
> $\boxed{}\boxed{3}\boxed{0}$ ÷ 10 = $\boxed{3}\boxed{}$

[1]

M2.　(a)　16.12

1

　　　(b)　3.262

1

[2]

M3.　75 (spoonfuls)

[1]

M4.　9 (boxes)

[1]

M5.   12

[1]

M6.   Award **TWO** marks for a correct answer of 15

   If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg

   180 ÷ 12 = wrong answer

   *Calculation must be performed for the award of **ONE** mark.*

   Up to 2

[2]

M7.   (a)   £22.50 **OR** 2250p

   *Accept £22.50p **OR** 22.50 **OR** 2250 **OR** 22 50.*
   ***Do not** accept £2250 **OR** 22.50p **OR** £22.5.*

   1

   (b)   Award **TWO** marks for the correct answer of 42

      If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg

      840 ÷ 20 **OR** 8.4 ÷ 0.2

   *Accept for **ONE** mark, £42 **OR** 42p as evidence of an appropriate method.*
   Answer need not be obtained for the award of the mark.
   No method mark is awarded for 8.40 ÷ 20 alone.

   Up to 2

[3]

M8.   121

```
      3  4  2
   ×        6
   ─────────────
```
M9.
```
   2  0  5  2
```

(a)   3 in left hand box

1

(b)   2 in right hand box

1

[2]

M10.   32.45 × **7.8** = 253.11

[1]

M11.   34

[1]

M12. Calculation completed correctly as shown:

$\boxed{6}\,\boxed{3} \times \boxed{6} = \boxed{3}\,\boxed{7}\,\boxed{8}$

OR

$\boxed{5}\,\boxed{4} \times \boxed{7} = \boxed{3}\,\boxed{7}\,\boxed{8}$

OR

$\boxed{4}\,\boxed{2} \times \boxed{9} = \boxed{3}\,\boxed{7}\,\boxed{8}$

[1]

M13. 52

[1]

M14. (a) 16

1

(b) 46p

1

[2]

M15. 24

[1]

M16. Award **TWO** marks for all four values correct as shown:

15 × 100 = 1500

150 × 10 = 1500

15000 ÷ 100 = 150

150 ÷ 10 = 15

If the answer is incorrect, award **ONE** mark for three values correct.

Up to 2

[2]

E1.   No comment available.

E6.   55% (15% at level 3, 59% at level 4 and 89% at level 5) answered this question correctly gaining both of the two marks available. 12% were awarded a single mark for method.

This was a contextualised problem that assessed children's ability to identify and use an appropriate operation. There were marked differences in performance. Most children achieving level 3 did not know what was required even though they made some response. Most children achieving level 4 knew what to do although one in six of those who identified the division could not perform it correctly.

E7.   (a)   Children working at level 3 overall found this question harder than children working at levels 4 and 5. Just over half of children awarded level 3 answered correctly compared with most of those children awarded level 4 or 5 overall. However, omission rates were still relatively low, showing that most children were able to engage with the question.

Just over 15% of children were able to perform the correct calculation but went on to give their answer without any units; these children were still awarded the mark. This response was more common among children achieving level 3 overall than those achieving level 5.

Approximately 5% of children gave written working for this question, suggesting that they did not have, or chose not to use, a calculator.

(b)   There were two marks available for this question. Two marks were awarded for a correct answer, with one mark available for an appropriate method with an incorrect answer. Few children who were awarded the mark for their method failed to gain the extra mark for a correct answer. Children awarded level 3 overall found the question much harder than children awarded level 4s and 5. Boys generally found this question easier than girls at all three levels.

A few children used units inappropriately to give answers of *42p* or *£42* for the number of 20p coins that Michelle had. Only about 5% of children failed to show the method they used to reach their answer, which shows that children were generally able to follow the instruction to show their method. Over half the children reached their answer using a formal division method. This method was more common among children achieving levels 4 and 5 overall than among children achieving level 3. Repeated addition or subtraction methods were used by just over 10% of children working at level 3 overall, but these methods were uncommon among children working at levels 4 and 5.

Since children were asked to show the method they used it was hard to determine which children had answered the question using a written calculation and which had recorded their calculator method as instructed. However, just under half the children used either a written method that was unlikely to have been carried out on a calculator or recorded some form of carrying in their calculation. These children may have misinterpreted the instruction *Show your method* to mean that they were required to solve this calculation without using a calculator.

E8.   For this question, children are required to divide a three-digit integer by seven.

Three-quarters of children at level 4 were successful; this success rate increased to 95% of children at level 5. Girls did better than boys on this question. Children at level 3 found this question difficult with over 15% not giving an answer.

Incorrect responses were varied.

The most common method used to answer this question was a standard short, or long, division method. This was used by about 40% of children at level 3, increasing to nearly 80% of children at level 5. Informal methods were used by nearly 10% of children at levels 3 and 4. Only 20% of children across the levels used a mental method to answer.

E9.   This problem assesses children's reasoning. They use their understanding and knowledge of the × 6 multiplication table in the context of a vertical short multiplication algorithm.

The first mark for this question was given for working out the missing hundreds value.

More than 60% of children at level 4 were successful, as were over 95% of those at level 5. The second mark was given for working out the missing figure in the units column. More than 75% of children at level 4 succeeded; the success rate for children at level 5 was similar to the first mark. Children at level 3 found the question difficult, with 20% failing to give an answer.

Errors made on this question were varied. However, 5% of children at levels 3 and 4 put zero in the hundreds box. This answer suggests that they were looking for a number to multiply by six in order to give an answer of zero, rather than an answer close to 20.

E10.　　　This question is designed to assess children's understanding of division as the inverse of multiplication. Children are required to find the missing number to complete a multiplication and are expected to use a calculator.

Eighty-five per cent of children at level 4 gave a correct answer, as did nearly all at level 5 and 40% of children at level 3. Nearly 15% of children at level 3 omitted the question, which is unsurprising since it involves calculation with decimal numbers and requires the use of inverse rather than trial and improvement.

Errors were varied, with no common patterns.

E12.　　　**Target Level: 4**

Curriculum Coverage (POS ref: Ma2/3a, 3k)

This question assesses children's reasoning and their ability to solve a number problem involving multiplication.

Performance

Over 70% of children working at level 4 answered correctly as did nearly all those working at level 5 and over one-third of those at level 3.

Over one-third of children working at level 3 and more than 10% of those working at level 4 omitted this question.

Common errors and misconceptions

• Errors were varied for this question with no common trends.

Methods

• Of the three possible correct answers, 42 × 9 was the most common with children working at levels 3 and 4. The answer of 63 × 6 was the most common with children working at
level 5.

.