Autumn Test 6

Teacher guidance

Skills and knowledge needed for this test:

- Addition and subtraction of two numbers with more than four digits
- Addition and subtraction of whole numbers and mixed decimals
- Addition and subtraction of fractions with multiples of the same denominator
- Complements of 1
- Square and cube numbers
- Finding fractions of amounts
- Multiplication and division of whole numbers and decimals by 10, 100 and 1000
- Formal written method for short multiplication and short division with remainders
- Formal written method for long multiplication of up to three digits by a two-digit number
- Missing number calculations, including balanced calculations, with all four operations

New: Formal written method for long division of 4-digit numbers by 2-digit numbers

A teaching suggestion

Step 1 Review short division (e.g. 7422 ÷ 6) and complete a calculation discussing the steps needed. Emphasise the importance of knowing the six times table.

Step 2 Display 4509 ÷ 23 and then set out the sum for formal division. $23\overline{)4509}$

Step 3 Discuss what might make this difficult (i.e. we do not know the 23 times table). Together, write out the 23 times table to $10 \times 23 = 230$. Explain that this is a good point to get to because we know $10 \times 23 = 230$ so we can check that 10×23 has the correct answer.

Step 4 Now ask: 'How many groups of 23 (thousands) can you make with 4 (thousands)? and agree that there are none. Now ask: 'How many groups of 23 (hundreds) can you make with 45 (hundreds)?' Use the written table to agree that there is 1 (hundred). Write 1 hundred in the correct column on the answer line and the 23 hundred underneath the 45 hundred.

```
   1
23|4509
  23
```

Step 5 Subtract the 23 (hundred) from 45 (hundred), writing the answer underneath. Then drop down the next figure. Chant: 'Take away and drop the next digit down!'.

```
   1
23|4509
  23↓
  220
```

Step 6 Now ask: 'How many groups of 23 (tens) can you make with 220 (tens)?' Use the written table to agree that there are 9 (tens). Write 9 on the answer line and 207 tens under the 220 tens.

```
   19
23|4509
  23↓
  220
  207
```

Step 7 Subtract the 207 tens from 220 tens, writing the answer below, and drop down the next digit. Chant: 'Take away and drop the next digit down!'.

```
   19
23|4509
  23↓
  220
  207↓
```

Step 8 Now ask: 'How many 23s in 139?' and use the written table to agree that there are 6. Write the 6 on the answer line and the 138 under the 139. Subtract to give 1 and check that there are no more digits to drop down.

Step 9 The calculation is complete and there is a remainder of 1: 4509 ÷ 23 = 196 r1.

```
   196
23|4509
  23↓
  220
  207↓
   139
   138
     1
```

Question number	Question	Answer	Marks	Related test
1	$0.1 + \square = 1$	0.9	1	Y5 Summer Test 4
2	$16 = \square^2$	4	1	Y5 Autumn Test 4
3	$\square \div 7 = 9$	63	1	Y4 Autumn Test 3, Y4 Spring Tests 2 and 6
4	$26 \times 100 = \square$	2600	1	Y5 Autumn Test 5
5	$48 = \square \times 6$	8	1	Y4 Autumn Test 3, Y4 Spring Test 4
6	$0^2 = \square$	0	1	Y5 Autumn Test 4
7	$\square = 8512 \div 6$	1418 r4	1	Y5 Autumn Test 6
8	$3282 \times 5 = \square$	16 410	1	Y5 Spring Test 3
9	$\frac{2}{3} - \frac{4}{9} = \square$	$\frac{2}{9}$ (or equiv)	1	Y5 Spring Test 6
10	$5859 = \square \times 7$	837	1	Y5 Spring Test 5, Y4 Autumn Test 3
11	$7137 \div 3 = \square$	2379	1	Y5 Spring Test 5
12	$4.25 \times 10 = \square$	42.5	1	Y5 Spring Test 2
13	$7 + 4 = \square - 4$	15	1	Y6 Autumn Test 4
14	$\frac{4}{5}$ of $40 = \square$	32	1	Y6 Autumn Test 3
15	$\frac{15}{12} - \frac{1}{6} = \square$	$1\frac{7}{12}$ (or equiv)	1	Y6 Autumn Test 2
16	$2 \times 3 = 30 - \square$	24	1	Y6 Autumn Test 4
17	$3690 \div 15 = \square$	246	2*	Y6 Autumn Test 6
18	$748\,261 - 9465 = \square$	738 796	1	Y5 Spring Test 4
19	$500 - \square = 138$	362	1	Y5 Autumn Test 3, Y3 Autumn Test 1
20	$\square = 493.5 \div 1000$	0.4935	1	Y5 Spring Test 2
21	$8808 \div 24 = \square$	367	2*	Y6 Autumn Test 6
22	$8003 - 2784 = \square$	5219	1	Y5 Autumn Test 3
23	$5192 \div \square = 8$	649	1	Y5 Spring Test 5, Y4 Autumn Test 3
24	$7.6 + 32.64 + 375.8 = \square$	416.04	1	Y6 Autumn Test 5
25	$6208 \div 32 = \square$	194	2*	Y6 Autumn Test 6
26	$297 \times 48 = \square$	14 256	2*	Y6 Autumn Test 1
		Total marks	**30**	

* award 1 mark if there is one error in the working