Loop cards

Loop card games involve pupils being dealt a set of cards. Each card has a question on it and an answer to a different question.

To begin the loop, a pupil reads out loud the question on their card and places it on the table. The pupil with the card that shows the corresponding correct answer reads out the answer. This pupil then reads out the question on their card for another pupil to answer, and places the card alongside the first card so that questions and answers match.

Loop cards are constructed to ensure that all questions and answers are used and the sequence arrives back at the first question. A loop will be formed after all the questions are answered.

The sets of loop cards provided in the school pack and on the CD-ROM are designed to be used with groups of pupils rather than a whole class. There are 10 cards in each set so pupils could work in groups of 10. However, it may be more effective for pupils to work in smaller groups and so have more than one card. This would be an ideal activity for a small group of pupils working with a teaching assistant.

A template is provided on the CD-ROM for teachers to make their own sets.

Asking pupils to make up a set of cards to illustrate a particular strategy is a good way of checking their understanding of a method.

Contents

Each set of loop cards in the school pack reinforces a mental strategy in the booklet *Teaching mental calculation strategies to level 5*. Page references in brackets refer to the booklet.

Partitioning 2: Bridging through multiples of 10
For example, 16 + 9 = 16 + 4 + 5, 73 – 7 = 73 – 3 – 4

1 15	Q 16 + 7
1 23	Q 54 + 9
1 63	Q 34 – 7
1 27	Q 28 + 6
1 34	Q 13 – 6
1 7	Q 78 + 5
1 83	Q 45 – 8
1 37	Q 28 + 36
1 64	Q 35 + 27
1 62	Q 22 – 7

Partitioning 2: Building up to a whole number or to a tenth
For example, 2.6 + 0.7 = 2.6 + 0.4 + 0.3

2 5.6	Q 1.7 + 0.5
2 2.2	Q 3.4 + 4.8
2 8.2	Q 0.9 + 0.25
2 1.15	Q 4.7 + 3.6
2 8.3	Q 9.6 – 2.8
2 6.8	Q 7.4 + 3.7
2 11.1	Q 3.4 – 1.6
2 1.8	Q 7.4 – 4.8
2 2.6	Q 6.3 + 2.8
2 9.1	Q 8.3 – 2.7

Partitioning 3: Compensating
Addition or subtraction of numbers that are close to a multiple of 10
For example, 34 + 9 = 34 +10 – 1, 405 – 399 = 405 – 400 + 1

3 136	Q 25 + 69
3 94	Q 17 + 19
3 36	Q 83 – 19
3 64	Q 147 + 29
3 176	Q 507 – 399
3 108	Q 40 – 19
3 21	Q 58 + 23
3 81	Q 19 + 59
3 78	Q 256 – 198
3 58	Q 47 + 89

Partitioning 3: Compensating (decimals)
Addition or subtraction of numbers that are close to whole numbers or a whole number of tenths
For example, 5.7 + 3.9 = 5.7 + 4.0 – 0.1

A	Q
12.5	2.8 + 4.9
7.7	2.47 – 1.9
0.57	6.3 + 7.9
14.2	7.6 – 3.9
3.7	8.9 + 7.1
16	6.7 – 3.9
2.8	5.75 – 3.9
1.85	9.3 – 5.9
3.4	5.4 + 6.9
12.3	7.6 + 4.9

Partitioning 4: Using near doubles
For example, 37 + 35 is double 35 and add 2

5 176	Q 26 + 28
5 54	Q 170 + 180
5 350	Q 58 + 55
5 113	Q 248 + 246
5 494	Q 15 + 19
5 34	Q 313 + 297
5 610	Q 35 + 39
5 74	Q 136 + 138
5 274	Q 79 + 83
5 162	Q 87 + 89

Partitioning 4: Using near doubles
For example, 4.7 + 4.8 is double 4.8 and subtract 0.1 or double 4.7 and add 0.1

6 31.2	Q 3.5 + 3.7
6 7.2	Q 1.8 + 1.9
6 3.7	Q 4.6 + 4.4
6 9	Q 7.2 + 7.5
6 14.7	Q 20.5 + 20.7
6 41.2	Q 6.4 + 6.2
6 12.6	Q 9.3 + 9.5
6 18.8	Q 6.7 + 6.5
6 13.2	Q 2.6 + 2.8
6 5.4	Q 15.4 + 15.8

Partitioning 5: Bridging through numbers other than 10 (based on time)
For example, the time 36 minutes after 2:45 can be calculated as:
2:45 and 15 minutes takes us to 3:00, then add 21 minutes to get 3:21.

7 3:03	Q It is 7:45. How many minutes is it to 8:30?
7 45 min	Q What is the time 35 minutes before 3 o'clock?
7 2:25	Q It is 6:24. How many minutes is it to 7 o'clock?
7 36 min	Q What time will it be 50 minutes after 2:40?
7 3:30	Q It is 14:20. How many hours and minutes is it to 17:10?
7 2 h 50 min	Q What is the time 42 minutes before 3 o'clock?
7 2:18	Q It is 9:27. How many hours and minutes is it to 12:15?
7 2 h 48 min	Q What is the time 57 minutes before 4:30?
7 3:33	Q It is 6:12. How many minutes is it to 7:05?
7 53 min	Q What is the time 28 minutes after 2:35?

Knowing multiplication and division facts to 10 × 10
(2, 3, 4, 5, 10 times tables)

A 9	Q 3×4
A 12	Q 5×7
A 35	Q $24 \div 3$
A 8	Q $16 \div 4$
A 4	Q 2×9
A 18	Q 5×3
A 15	Q $35 \div 5$
A 7	Q 4×6
A 24	Q 10×6
A 60	Q $90 \div 10$

Knowing multiplication and division facts to 10 × 10
(5, 6, 7, 8, 9 times tables)

9 63	Q 42 ÷ 6
9 7	Q 56 ÷ 7
9 8	Q 7 × 6
9 42	Q 48 ÷ 8
9 6	Q 7 × 7
9 49	Q 27 ÷ 9
9 3	Q 8 × 9
9 72	Q 8 × 7
9 56	Q 81 ÷ 9
9 9	Q 7 × 9

Multiplying and dividing by multiples of 10
For example, how many seconds are there in 8 minutes?

10 75 000	Q How many centimetres are there in 36 metres?
10 3600	Q How many metres are there in 7500 centimetres?
10 75	Q How many minutes are there in 6 hours?
10 360	Q 3.6×10
10 36	Q $658 \div 100$
10 6.58	Q How many seconds are there in 3 minutes?
10 180	Q 6.58×10
10 65.8	Q How many grams are there in 18 kilograms?
10 18 000	Q $6580 \div 10$
10 658	Q How many grams are there in 75 kilograms?

Doubling and halving
For example, $14 \times 20 = 14 \times 10 \times 2$

A 160	Q 16×5
A 80	Q 28×50
A 1400	Q 25×6
A 150	Q One quarter of 72
A 18	Q 24×5
A 120	Q One quarter of 120
A 30	Q 15×4
A 60	Q 18×50
A 900	Q One eighth of 200
A 25	Q 32×5

Fraction, decimals and percentages
Using related facts for fractions
For example, $\frac{1}{5}$ of 20 is 4, so $\frac{3}{5}$ is 3×4

12 6	Q $\frac{1}{3}$ of 12
12 4	Q $\frac{4}{5}$ of 20
12 16	Q $\frac{3}{4}$ of 24
12 18	Q $\frac{2}{3}$ of 12
12 8	Q $\frac{5}{6}$ of 30
12 25	Q $\frac{2}{3}$ of 60
12 40	Q $\frac{3}{5}$ of 20
12 12	Q $\frac{3}{4}$ of 40
12 30	Q $\frac{5}{8}$ of 24
12 15	Q $\frac{3}{7}$ of 14

Fractions, decimals and percentages
For example, know that 25% = 0.25 = $\frac{1}{4}$, find $\frac{1}{4}$ of 36

13 $\frac{4}{10}$	Q 0.5 as a fraction
13 $\frac{1}{2}$	Q 25% as a fraction
13 $\frac{1}{4}$	Q $\frac{1}{2}$ of 35
13 $17\frac{1}{2}$	Q 10% of 40
13 4	Q $\frac{3}{4}$ as a decimal
13 0.75	Q 25% of 20
13 5	Q 0.04 as a fraction
13 $\frac{4}{100}$	Q $\frac{7}{10}$ as a decimal
13 0.7	Q $\frac{1}{5}$ of 30
13 6	Q 0.4 as a fraction

Fractions, decimals and percentages (page 42)
Using 10% of an amount to calculate other percentages of that amount
For example 10% of 60 is 6, 70% of 60 is 7×6

14 3	Q 20% of 60
14 12	Q 5% of 30
14 1.5	Q 30% of 80
14 24	Q 5% of 40
14 2	Q 70% of 40
14 28	Q 40% of 20
14 8	Q 5% of 90
14 4.5	Q 60% of 30
14 18	Q 90% of 50
14 45	Q 5% of 60
