

BUILDING MENTAL STRATEGIES FOR MULTIPLICATION FACTS

Based on known facts/strategies, arrays and regions

The following strategies need to be interpreted in relation to the Multiplication Table below. Note facts are read **ACROSS** the rows

1. The 2s facts

eg, 2 ones, 2 twos, 2 threes, 2 fours, 2 eights

DOUBLES, eg, "2 sevens ... double 7, 14"

Establish RELATED facts, eg, 7 twos, think 2 sevens

2. The 3s facts

eg, 3 ones, 3 twos, 3 threes, 3 fours, 3 eights, 3 nines

DOUBLES AND 1 MORE GROUP

eg, "3 eights ... double 8, 16 and 8 more, 20 ... 24"

Establish RELATED facts, eg, 8 threes, think 3 eights

3. The 4s facts

eg, 4 ones, 4 twos, 4 threes, 4 fours, 4 eights, 4 nines

DOUBLE DOUBLES

eg, "4 sixes ... double 6, 12, double 12, 24"

Establish RELATED facts, eg, 6 fours, think 4 sixes

4. The 5s facts

eg, ... 5 threes, 5 fours, 5 fives, 5 sixes 5 eights, 5 nines

RELATE TO TENS

eg, "5 eights is half of 10 eights, 40

Establish RELATED facts, eg, 8 fives, think 5 eights or 4 tens

OR RELATE TO READING TIME ON A CLOCKFACE

see 1, 2, 3, 4, read as 5, 10, 15, 20 minutes past the hour

eg, "minute hand on 4 means 20 minutes past the hour

5. The 9s facts

eg, ... 9 sixes, 9 sevens, 9 eights, 9 nines

TEN GROUPS LESS 1 GROUP

eg, 9 eights is less than 10 eights, it is 8 less, 72"

Establish RELATED facts using the same strategy,

eg, 8 nines is less than 8 tens it is 8 less, 72

6. The 1s and 0s facts

eg, 1 one, 1 two, 1 three, 1 four ... 1 of anything is anything

Establish RELATED facts, eg, 8 ones, think 1 eight

eg, 0 ones, 0 twos, 0 threes, 0 fours,... 0 'anythings' is nothing

Establish RELATED facts, eg, 9 zeros, think 0 nines

7. Deal with remaining facts

x	1	2	3	4	5	6	7	8	9
1									
2									
3									
4									
5									
6									
7									
8									
9									

6 sevens, 3 sevens
and 3 sevens, 42

7 sevens, 49
SQUARE NUMBER

8 sixes, double 6, 12
double, double, 48

8. Consolidate and build to speed and accuracy via games such as 'Beat the Teacher' and 'Multiplication Toss'.

eg, Multiplication Toss

Equipment: 2 ten-sided dice and an A4 sheet of cm grid paper for each player.

Rules: Two or more players take turns to toss 2 ten-sided dice (2 six-sided dice could be used initially). The result of the toss determines region possibilities, eg, a 6 and 4 could be recorded as a 6 by 4 rectangle on the player's A4 sheet (6 fours) or a 4 by 6 rectangle (4 sixes). The relevant fact is recorded in the region chosen. The Game proceeds with no regions overlapping until a player cannot take their turn in which case they either miss a turn or partition their region (see Extension below).

The winner is the player with the least number of uncovered cm squares.

Extension: If 8 and 6 are thrown but there is no room left on the grid to record 8 sixes or 6 eights, the turn can still be taken by partitioning once only, eg, 4 sixes and 4 sixes, or 5 sixes and 3 sixes, which could be played as 5 sixes and 6 threes for example.

DIVISION FACTS

These should be related to sharing and the array and region idea 'where the focus is on the number of shares/groups. For example, for 24 shared among 6 or 24 divided by 6, THINK: 6 what's are 24.

MULTIPLICATION TABLE:

X	1	2	3	4	5	6	7	8	9	10
1	1 one 1	1 two 2	1 three 3	1 four 4	1 five 5	1 six 6	1 seven 7	1 eight 8	1 nine 9	1 ten 10
2	2 ones 2	2 twos 4	2 threes 6	2 fours 8	2 fives 10	2 sixes 12	2 sevens 14	2 eights 16	2 nines 18	2 tens 20
3	3 ones 3	3 twos 6	3 threes 9	3 fours 12	3 fives 15	3 sixes 18	3 sevens 21	3 eights 24	3 nines 27	3 tens 30
4	4 ones 4	4 twos 8	4 threes 12	4 fours 16	4 fives 20	4 sixes 24	4 sevens 28	4 eights 32	4 nines 36	4 tens 40
5	5 ones 5	5 twos 10	5 threes 15	5 fours 20	5 fives 25	5 sixes 30	5 sevens 35	5 eights 40	5 nines 45	5 tens 50
6	6 ones 6	6 twos 12	6 threes 18	6 fours 24	6 fives 30	6 sixes 36	6 sevens 42	6 eights 48	6 nines 54	6 tens 60
7	7 ones 7	7 twos 14	7 threes 21	7 fours 28	7 fives 35	7 sixes 42	7 sevens 49	7 eights 56	7 nines 63	7 tens 70
8	8 ones 8	8 twos 16	8 threes 24	8 fours 32	8 fives 40	8 sixes 48	8 sevens 56	8 eights 64	8 nines 72	8 tens 80
9	9 ones 9	9 twos 18	9 threes 27	9 fours 36	9 fives 45	9 sixes 54	9 sevens 63	9 eights 72	9 nines 81	9 tens 90
10	10 ones 10	10 twos 20	10 threes 30	10 fours 40	10 fives 50	10 sixes 60	10 sevens 70	10 eights 80	10 nines 90	10 tens 100