Make sure you learn these spellings by Wednesday 15th December!

Remember to look, read, write, cover and check!

suggest

symbol

system

temperature

thorough

twelfth

variety

vegetable

vehicle

yacht

9 Times Table

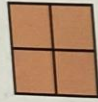|				
0	x	9	=	0
1	x	9	=	9
2	x	9	=	18
3	x	9	=	27
4	x	9	=	36
5	x	9	=	45
6	x	9	=	54
7	x	9	=	63
8	x	9	=	72
9	x	9	=	81
10	x	9	=	90
11	x	9	=	99
12	x	9	=	108

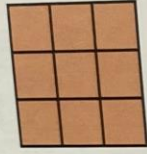# SQUARE NUMBERS

TARGET To recognise and use square numbers.

When a number is multiplied by itself you get a square number.
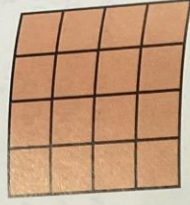They are called square numbers because they make square patterns.

$1^2 = 1 \times 1 = 1$

$2^2 = 2 \times 2 = 4$

$3^2 = 3 \times 3 = 9$

$4^2 = 4 \times 4 = 16$

A

1 Complete this table up to 12^2.

$1^2 = 1 \times 1 = 1$
$2^2 = 2 \times 2 = 4$
$3^2 = 3 \times 3 = 9$

Work out the area of each square.

2 Sides 5 cm

3 Sides 9 cm

4 Sides 10 cm

5 Sides 6 cm

6 Sides 3 cm

7 Sides 11 cm

8 Sides 7 cm

9 Sides 4 cm

10 Sides 12 cm

11 Sides 8 cm

B

Work out

1 $5^2 + 2^2$

2 $11^2 + 4^2$

3 $6^2 + 3^2$

4 $7^2 - 4^2$

5 $9^2 - 5^2$

6 $8^2 - 2^2$

7 $10^2 + 6^2$

8 $7^2 + 3^2$

9 $12^2 + 1^2$

10 $10^2 - 5^2$

11 $11^2 - 9^2$

12 $8^2 - 4^2$

Work out

13 10^2

14 20^2

15 60^2

16 80^2

17 30^2

18 110^2

19 70^2

20 50^2

21 40^2

22 90^2

23 120^2

24 100^2

Find a pair of square numbers which give a total of:

25 20

26 85

27 37

28 89

29 153

30 170

31 2000

32 6500

33 9000

34 14 900

35 6100

36 7200

C

Work out

1 100^2

2 200^2

3 500^2

4 800^2

5 600^2

6 1000^2

7 $100^2 - 70^2$

8 $40^2 + 20^2$

9 $70^2 - 30^2$

10 $60^2 + 50^2$

11 $90^2 - 30^2$

12 $80^2 + 40^2$

Lagrange's Theorem

Every whole number can be written as the sum of four or fewer square numbers.

Examples

$19 = 16 + 1 + 1 + 1$

$35 = 25 + 9 + 1$

Make the following numbers from four or fewer square numbers.

13 23

14 31

15 48

16 63

17 79

18 96

19 123

20 142

21 483

22 933

23 3485

24 8058