Year 6 Term 1

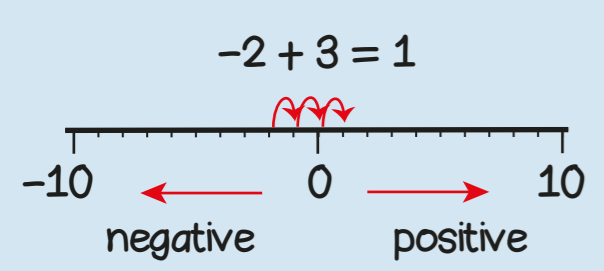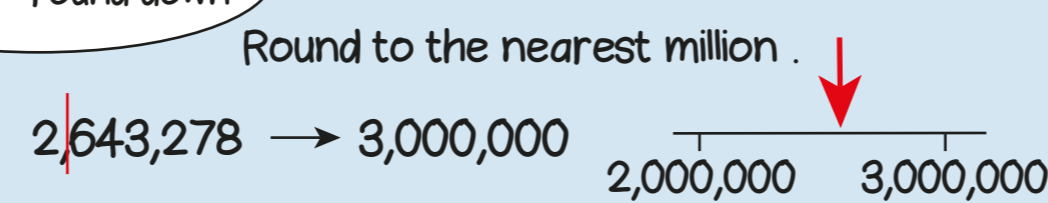| millions	100,000s	10,000s	1000s	100s	10s	1s
2	5	4	3	2	4	1

two million, five hundred and forty-three thousand, two hundred and forty-one

2 millions, 5 hundred thousands, 4 ten thousands, 3 thousands, 2 hundreds, 4 tens and 1 one

In order from smallest to largest

2,043,241   2,764,406   2,870,540

Stop and look. What do you notice?

$-2 + 3 = 1$

−10 ← negative   0   positive → 10

5 or more - round up
4 or less - round down

Round to the nearest million.

$2{,}643{,}278 \rightarrow 3{,}000{,}000$

2,000,000   3,000,000

Multiplying and dividing by 10, 100 and 1000

M	HTh	TTh	Th	100s	10s	1s	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
					1	3	6		
				1	3	6			
		1	3	6	0	0			
					1	3	6		
					0	1	3	6	

Ten times greater

13.6 x 10 — move digits one place left
13.6 x 1000 — move digits 3 places left

Ten times smaller

13.6 ÷ 10 — move digits one place right
13.6 ÷ 100 — move digits 2 places right

millions digit round multiple positive negative

A prime number has exactly 2 factors:
2, 3, 5, 7, 11, 13, 17, 19...

15 and 21 have the common factors 1 and 3

15 and 21 are common multiples of 3

prime common multiple factor multiplier divisor

If I know... then I also know... because...

$0.8 \times 7 = 8 \times 7 \div 10$
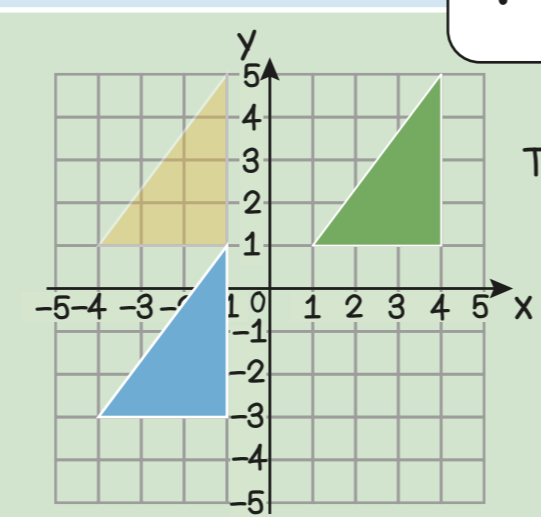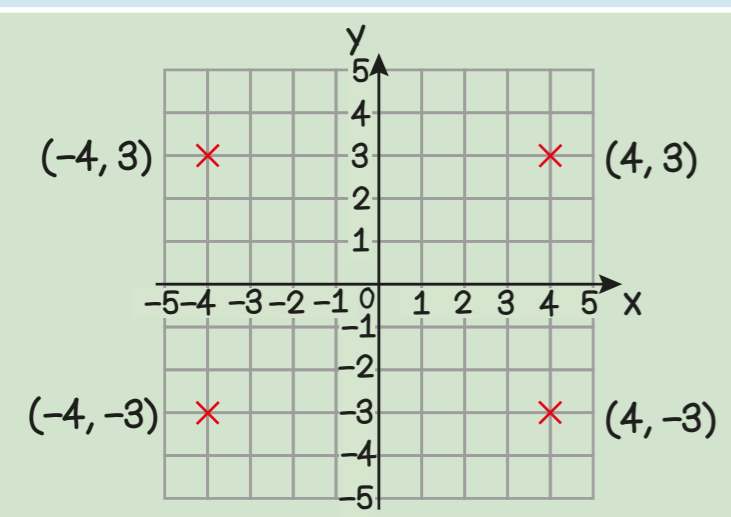
$4.2 \times 5 = 42 \div 2$

$56{,}000 \div 80 = 700$

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  2427
x   38
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 19416
 72810
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 92226
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$24 \overline{)3339}$ = 0139 r3

$24 \overline{)3339.000}$ = 0139.125

1	24
2	48
4	96
5	120
8	192
10	240

$3339 \div 24 = 139 \text{ r}3 = 139\frac{3}{24}$

$= 139.13 \text{ (to 2dp)}$
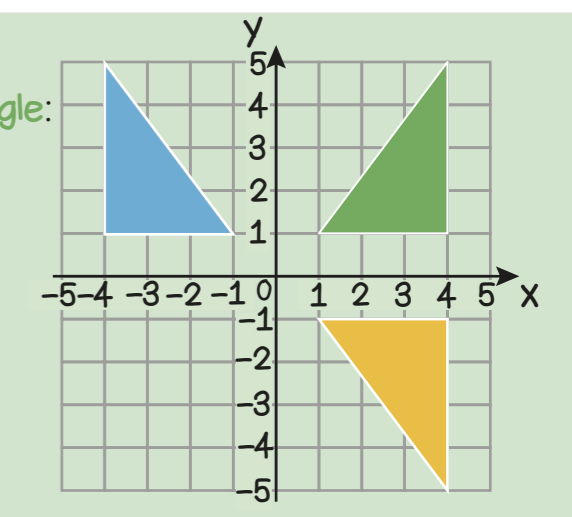
(−4, 3) ×   × (4, 3)

(−4, −3) ×   × (4, −3)

Translate the triangle 5 squares left and 4 squares down.

object image plot reflect translate

Reflect the triangle:
in the x axis
in the y axis

Simplify $\frac{7}{14}$

7 and 14 have the common factor 7

$$\frac{7}{14} = \frac{1}{2}$$
(÷7)

Compare

$\frac{3}{8} < \frac{3}{7}$

$\frac{3}{7} < \frac{3}{6}$

$\frac{3}{6} < \frac{3}{5}$

The larger the denominator the smaller the equal parts.

$\frac{3}{4}$ and $\frac{2}{3}$ have the common denominator 12

$\frac{9}{12}$

$\frac{8}{12}$

so $\frac{3}{4} > \frac{2}{3}$ because $\frac{9}{12} > \frac{8}{12}$

Order

$\frac{5}{6}$ more than $\frac{1}{2}$ less than 1

$\frac{2}{5}$ less than $\frac{1}{2}$

$\frac{8}{7}$ more than 1

$1\frac{3}{4}$ more than $1\frac{1}{2}$

0    $\frac{1}{2}$ 1 $1\frac{1}{2}$

Order of Operations

$6 - 2 + 4 = 8$ — Only addition and subtraction - complete the calculation from left to right

$6 \div 2 \times 4 = 12$ — Only multiplication and division - complete the calculation from left to right

$6 + 4 \times 2 = 14$ — Complete multiplication before addition or subtraction

$(6 + 4) \times 2 = 20$ — Complete the calculations in brackets first

$6^2 + 4 \div 2 = 20$ — Calculate indices before other operations

If I know...
then I also know...
because...

$0.75 = \frac{3}{4}$ 75%

$0.5 = \frac{1}{2}$ 50%

$0.33... = \frac{1}{3}$ 33.33...%

$0.25 = \frac{1}{4}$ 25%

$0.2 = \frac{1}{5}$ 20%

$0.1 = \frac{1}{10}$ 10%

So $0.3 = 30\% = \frac{3}{10}$

$\frac{1}{5} = 0.2$ so

$\frac{2}{5} = 0.125$

$\frac{1}{4} = 0.25 = \frac{2}{8}$ so

$\frac{1}{8} = 0.125$

simplify
equivalent
proper
improper
percent

Year 6 Term 2

The sum of the angles at a point on a straight line is 180°

The sum of the angles at a point is 360°

Vertically opposite angles are equal

The sum of the angles in a triangle is 180°

The sum of the angles in a quadrilateral is 360°

vertically
opposite
radius
diameter
circumference

Parts of circle

circumference
diameter
radius

quadrilaterals

at least 2 lines of symmetry

properties
symmetry
parallel
prism
pyramid

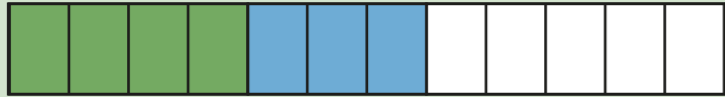|	curved surface	no curved surface
prism		
not a prism		

Can Do Maths

$$\frac{1}{3} + \frac{1}{4}$$

"I can't describe the sum!"
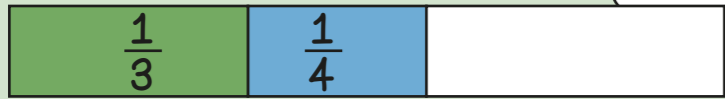
$\frac{1}{3}$ $\frac{1}{4}$

$$\frac{1}{3} = \frac{4}{12} \qquad \frac{1}{4} = \frac{3}{12}$$

Find a common denominator.
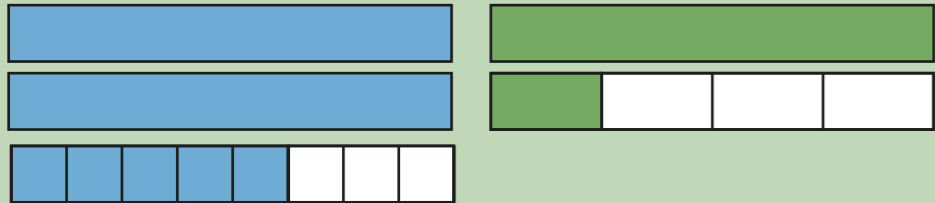
$$\frac{4}{12} + \frac{3}{12} = \frac{7}{12}$$

so

$$\frac{1}{3} + \frac{1}{4} = \frac{7}{12}$$

"I can add fractions with the same denominator."

Adding mixed numbers. $2\frac{5}{8} + 1\frac{1}{4}$

Add the whole numbers.
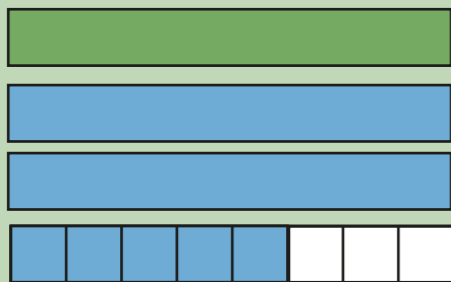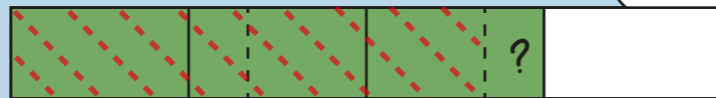
Add the fractions by finding a common denominator.

$$\frac{1}{4} = \frac{2}{8}$$
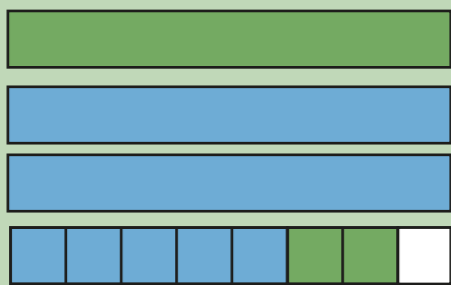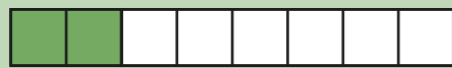
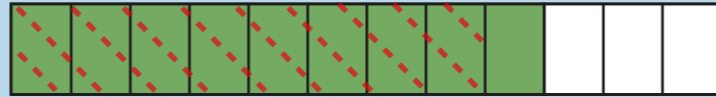$$= 3\frac{5}{8} + \frac{2}{8} \qquad = 3\frac{7}{8}$$

$$\frac{3}{4} - \frac{2}{3}$$

"I can't describe the part that is left!"

?

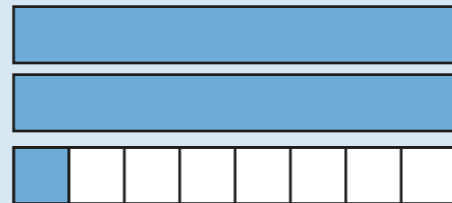$$\frac{3}{4} = \frac{9}{12} \qquad \frac{2}{3} = \frac{8}{12}$$

Find a common denominator.

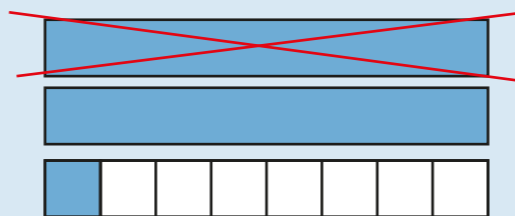$$\frac{9}{12} - \frac{8}{12} = \frac{1}{12}$$

"I can subtract fractions with the same denominator."

Subtracting mixed numbers.

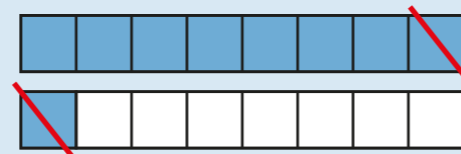$$2\frac{1}{8} - 1\frac{1}{4}$$

Subtract the whole numbers.

$$= 1\frac{1}{8} - \frac{1}{4}$$
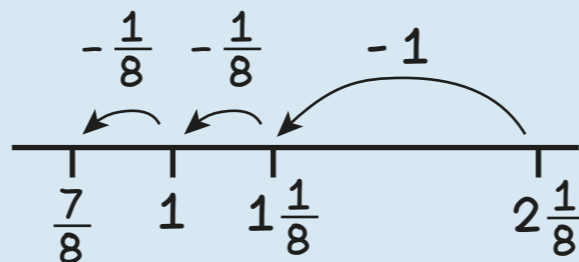
Subtract the fraction by finding a common denominator.

$$\frac{1}{4} = \frac{2}{8}$$

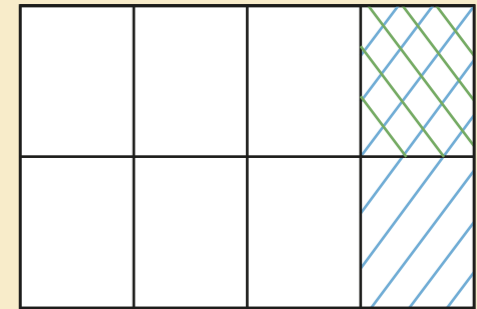$$= 1\frac{1}{8} - \frac{2}{8}$$

$$= \frac{7}{8}$$

Or on a number line.

$-\frac{1}{8}$ $-\frac{1}{8}$ -1

$\frac{7}{8}$ 1 $1\frac{1}{8}$ $2\frac{1}{8}$

$$\frac{1}{2} \text{ of } \frac{1}{4} = \frac{1}{8}$$
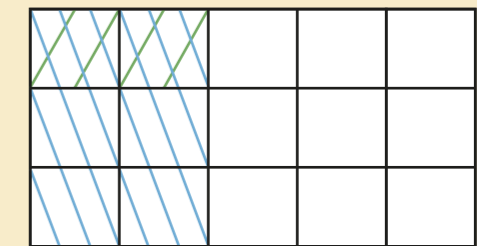
$$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8} \qquad \frac{1}{4} \div 2 = \frac{1}{8}$$

$$\frac{1}{3} \text{ of } \frac{2}{5} = \frac{2}{15}$$

$$\frac{1}{3} \times \frac{2}{5} = \frac{2}{15} \qquad \frac{2}{5} \div 3 = \frac{2}{15}$$
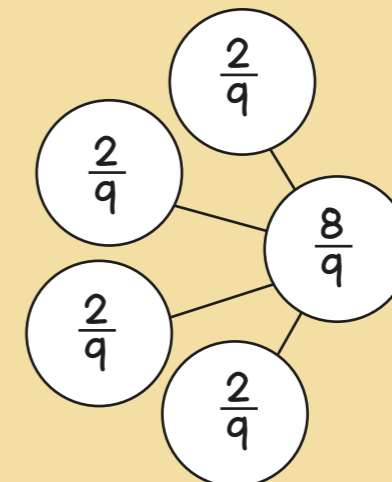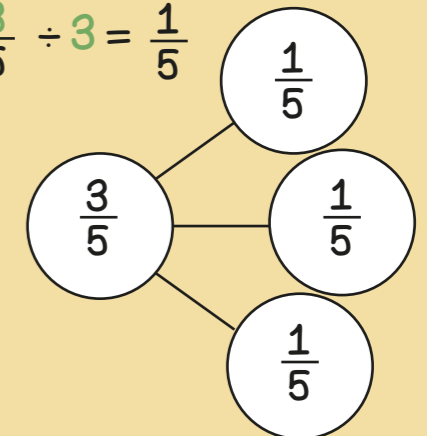
Year 6 Term 3

$$\frac{3}{5} \div 3 = \frac{1}{5}$$

$\frac{1}{5}$ $\frac{3}{5}$ $\frac{1}{5}$ $\frac{1}{5}$

denominator
numerator
proper
improper
equivalent

$$\frac{8}{9} \div 4 = \frac{2}{9}$$

$\frac{2}{9}$ $\frac{2}{9}$ $\frac{8}{9}$ $\frac{2}{9}$ $\frac{2}{9}$

Place Value Chart

M	HTh	TTh	Th	100s	10s	1s	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
					1	3 • 6			
				1	3	6			
		1	3	6	0	0			
					1 •	3	6		
					0 •	1	3	6	

Ten times greater
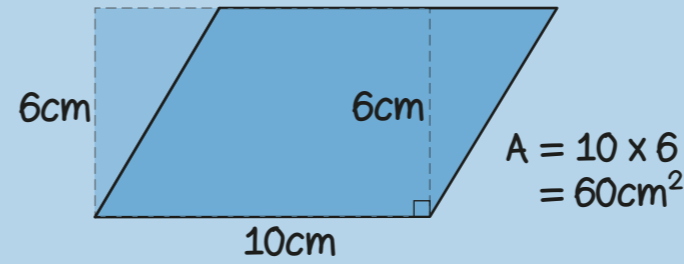
Ten times smaller
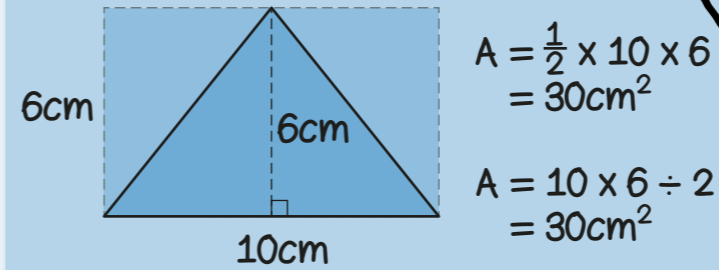
Converting units by multiplying and dividing by 10, 100 and 1000

13.6 x 10
move digits 1 place left

13.6 x 1000
move digits 3 places left

13.6 ÷ 10
move digits 1 place right

13.6 ÷ 100
move digits 2 places right

1m = 100 cm
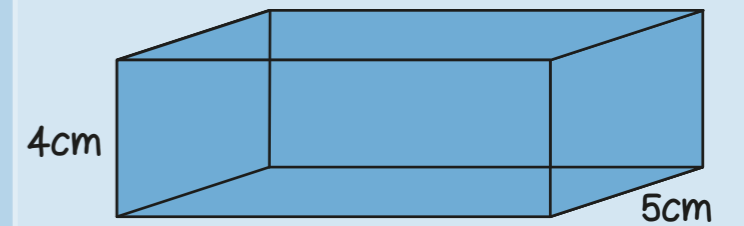13.6 x 100 = 1360
so 13.6m = 1360cm

1cm = 10 mm
13.6 x 10 = 136
so 13.6cm = 136mm

1km = 1000 m
13.6 x 1000 = 13600
so 13.6km = 13,600m

When converting from a larger unit to a smaller unit, multiply because there will be more of them.

1l = 1000 ml
13600 ÷ 1000 = 13.6
so 13,600ml = 13.6litres

1kg = 1000 g
1360 ÷ 1000 = 1.36
so 1360g = 1.36kg

Area of a parallelogram = base x perpendicular height

6cm   6cm   10cm

A = 10 x 6
= 60cm^2

Area of a triangle = $\frac{1}{2}$ x base x perpendicular height

6cm   6cm   10cm

A = $\frac{1}{2}$ x 10 x 6
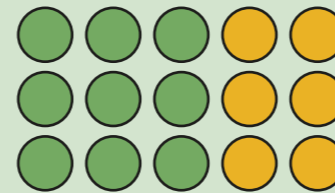= 30cm^2

A = 10 x 6 ÷ 2
= 30cm^2

Volume of a cuboid = length x width x height

4cm   5cm   12cm

V = 12 x 5 x 4
= 12 x 20
= 240cm^3

convert
perpendicular
area
squared
volume
cubed

4cm 4cm 4cm 4cm

V = 4 x 4 x 4
= 16 x 4
= 64cm^3

Percentages

÷ 10   ÷ 2   ÷ 2

0   24   60   120   180   240
0   10   25   50   75   100

Find 50% of 240
Find 25% of 240
Find 10% of 240

12 5%
24 10%
120 50%
60 25%
240 100%
24 10%
24 20%
2.4 1%
4.8 2%

scale factor
similar
equivalent
percentage

---

3 green for every 2 yellow

green	yellow	total
3	2	5
6	4	10
9	6	15

Colin and Coco share £60
Coco gets 3 x more than Colin.

Colin
Coco   } £60

so 1 part = 60 ÷ 4 = 15
So Colin gets £15
and Coco gets £15 x 3 = £45

Scale factor 3

x 3   12cm
4cm   6cm
2cm

Buying a mug costs £8 for the mug plus £4 per colour. How much would it cost to get a mug with 3 colours?
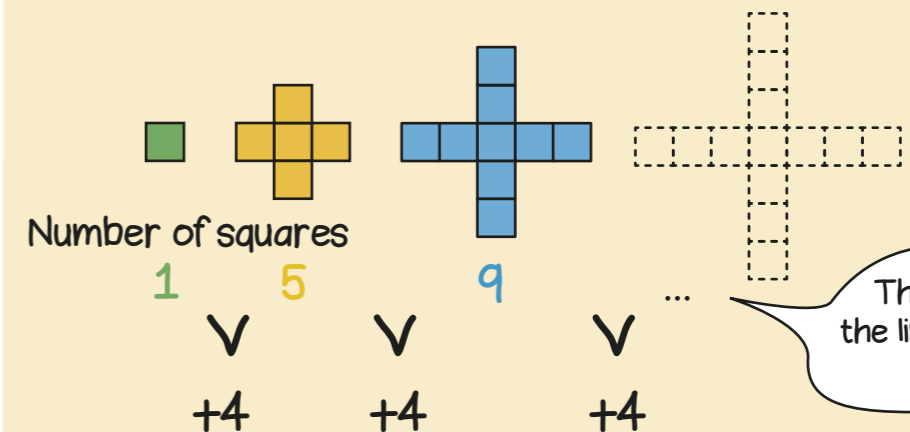£8 + 4 x 3 = £20

$a + a = 2a$
$a \times a = a^2$

If $a = 3$
$2a = 2 \times 3 = 6$
$a^2 = 3 \times 3 = 9$

$a + b = 6$

If $a = 0$ then $b = 6$
$a = 1$ $b = 5$
$a = 2$ $b = 4$
$a = 3$ $b = 3$
$a = 4$ $b = 2$
$a = 5$ $b = 1$
$a = 6$ $b = 0$

variable
unknown
term
linear
sequence
formula

Number of squares

1   5   9   ...

+4   +4   +4

The next term in the linear sequence is 9 + 4 = 13