Year 6 Term 1

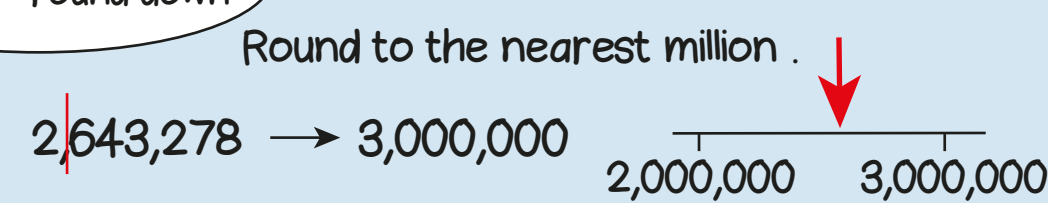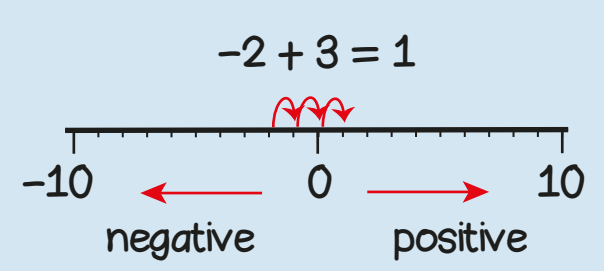| millions	100,000s	10,000s	1000s	100s	10s	1s
2	5	4	3	2	4	1

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   0   10
negative   positive

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

13.6×10
move digits one place left

13.6×1000
move digits 3 places left

Ten times smaller

$13.6 \div 10$
move digits one place right

$13.6 \div 100$
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...

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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...

$0.8 \times 7 = 8 \times 7 \div 10$

$4.2 \times 5 = 42 \div 2$
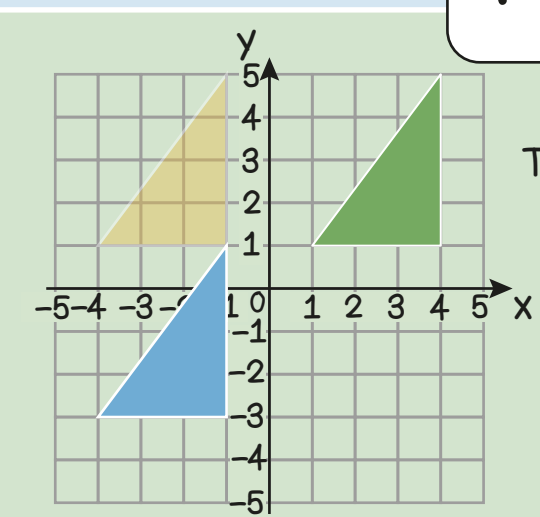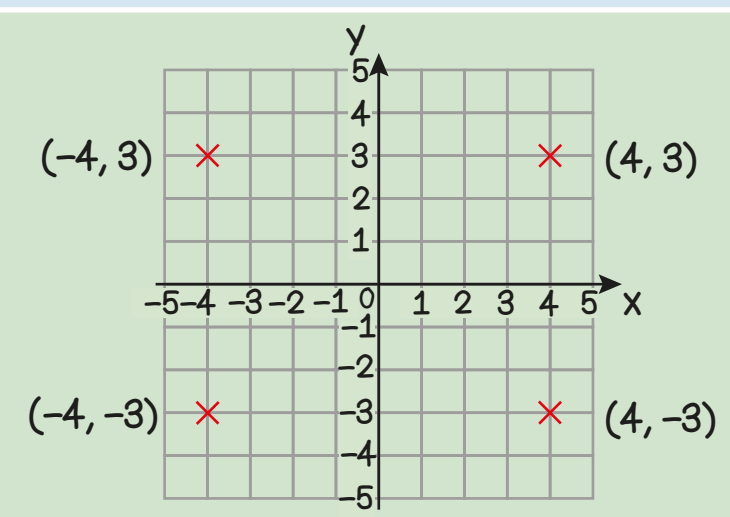
$56,000 \div 80 = 700$

2427
× 38
19416
72810
92226

$0139 \, r3$
$24 | 3^{3}3^{9}3^{21}9$

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

0139.125
$24 | 3^{3}3^{9}3^{21}9.3^{6}0^{12}0\,0$

$3339 \div 24 = 139 \, r3 = 139\frac{3}{24}$

$= 139.13$ (to 2dp)

(−4, 3) ×   × (4, 3)

y
5 4 3 2 1
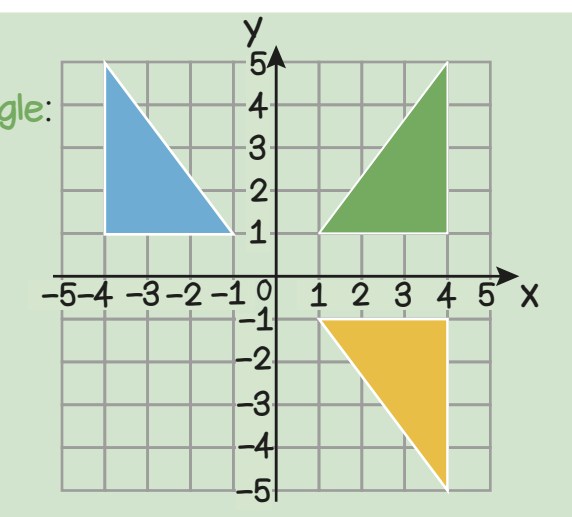−5 −4 −3 −2 −1 0 1 2 3 4 5 x
−1 −2 −3 −4 −5

(−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 $1\frac{1}{2}$

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

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°
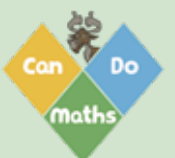
The sum of the angles in a quadrilateral is 360°

vertically opposite radius diameter circumference

Parts of circle

circumference
diameter
radius

quadrilaterals

at least 2 lines of symmetry

properties symmetry parallel prism pyramid

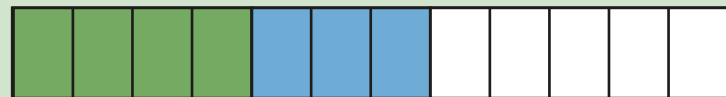|	curved surface	no curved surface
prism		
not a prism		

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

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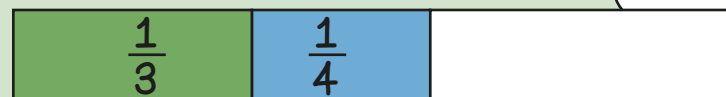
$\frac{1}{3}$ $\frac{1}{4}$

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

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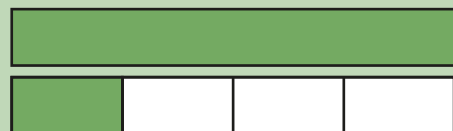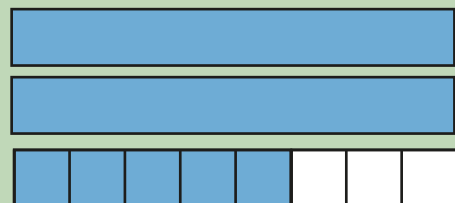
$$\frac{4}{12} + \frac{3}{12} = \frac{7}{12}$$

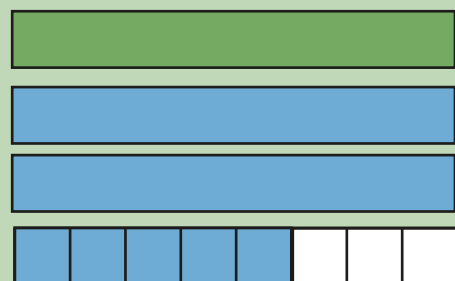I can add fractions with the same denominator.

so

$$\frac{1}{3} + \frac{1}{4} = \frac{7}{12}$$
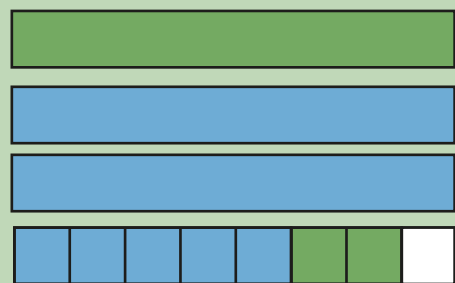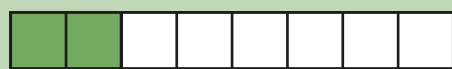
Adding mixed numbers. $2\frac{5}{8} + 1\frac{1}{4}$

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!.

?

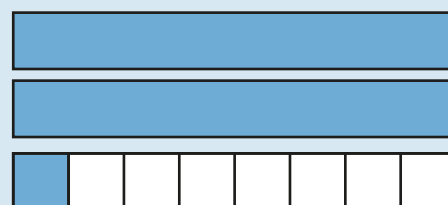$$\frac{3}{4} = \frac{9}{12} \qquad \frac{2}{3} = \frac{8}{12}$$

Find a common denominator.
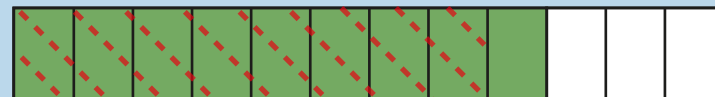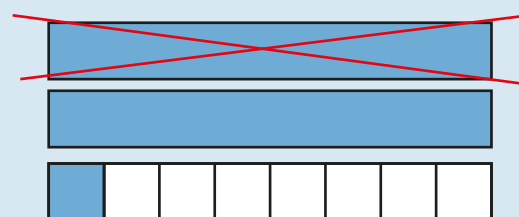
$$\frac{9}{12} - \frac{8}{12} = \frac{1}{12}$$

I can subtract fractions with the same denominator.

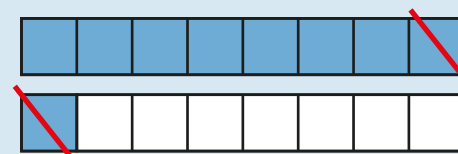Subtracting mixed numbers.

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

Subtract the whole numbers.

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

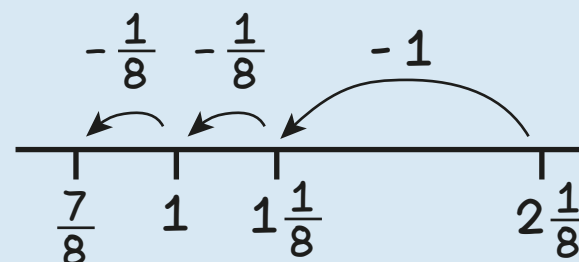Subtract the fraction by finding a common denominator.

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

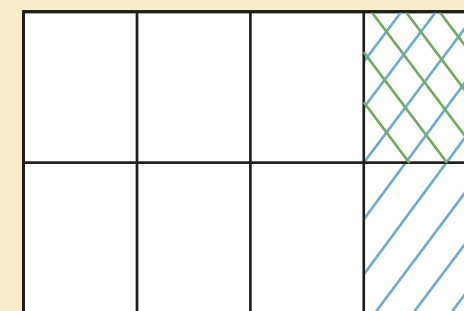$$= 1\frac{1}{8} - \frac{2}{8}$$

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

Or on a number line.

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

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

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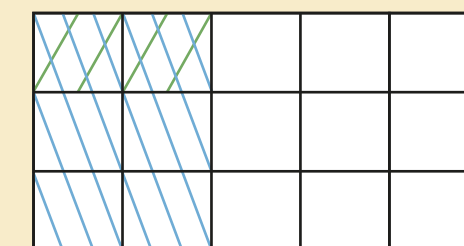
$$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8} \qquad \frac{1}{4} \div 2 = \frac{1}{8}$$

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

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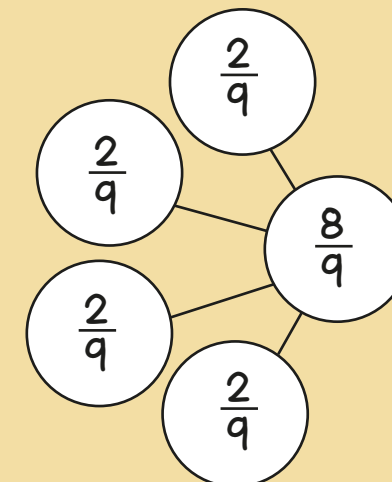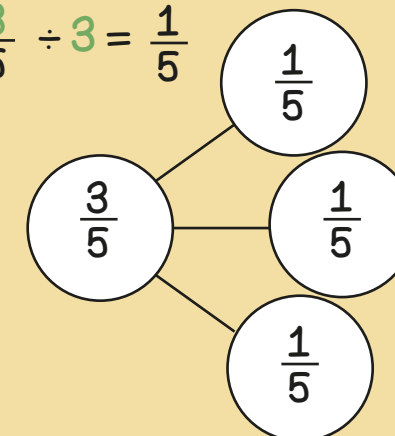
Year 6 Term 3

denominator
numerator
proper
improper
equivalent

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

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

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

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

Can Do Maths

Year 6 Term 4

Place value chart

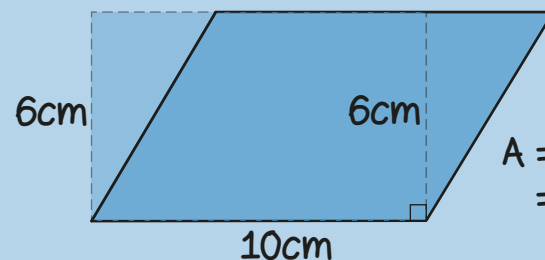| M	HTh	TTh	Th	100s	10s	1s	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
					1	3 • 6			
				1	3	6			
		1	3	6	0	0			
					1 • 3	6			
					0 • 1	3	6		

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

$A = 10 \times 6$
$= 60cm^2$

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

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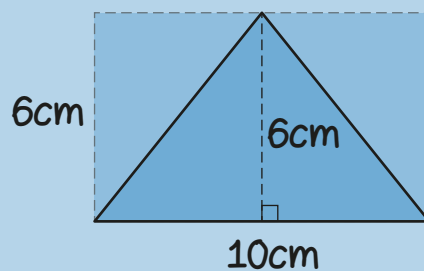
$A = \frac{1}{2} \times 10 \times 6$
$= 30cm^2$
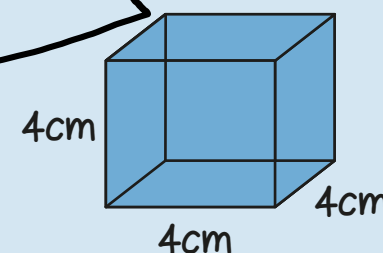
$A = 10 \times 6 \div 2$
$= 30cm^2$

Volume of a cuboid = length x width x height
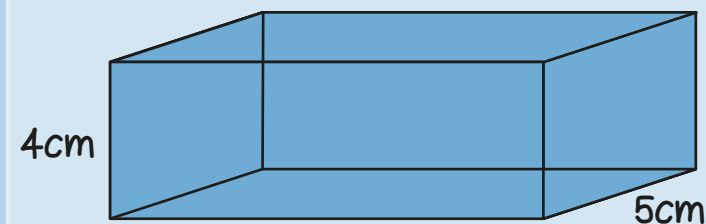
4cm   5cm   12cm

$V = 12 \times 5 \times 4$
$= 12 \times 20$
$= 240cm^3$

convert perpendicular area squared volume cubed

4cm   4cm   4cm   4cm

$V = 4 \times 4 \times 4$
$= 16 \times 4$
$= 64cm^3$

Percentages

0   24   60   120   180   240

÷ 10   ÷ 2   ÷ 2

0   10   25   50   75   100

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

12 5%
24 10%
24 20%
24 10%

240 100%

120 50%
60   25%

2.4 1%
4.8 2%

scale factor similar equivalent percentage

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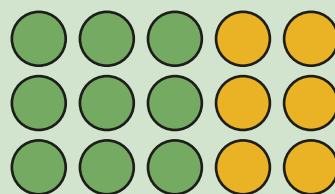
green	yellow	total
3	2	5
6	4	10
9	6	15

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

4cm   12cm
2cm   6cm

Algebra

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

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

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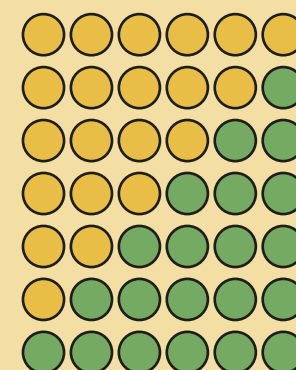£8 + 4 x 3 = £20

$a + b = 6$

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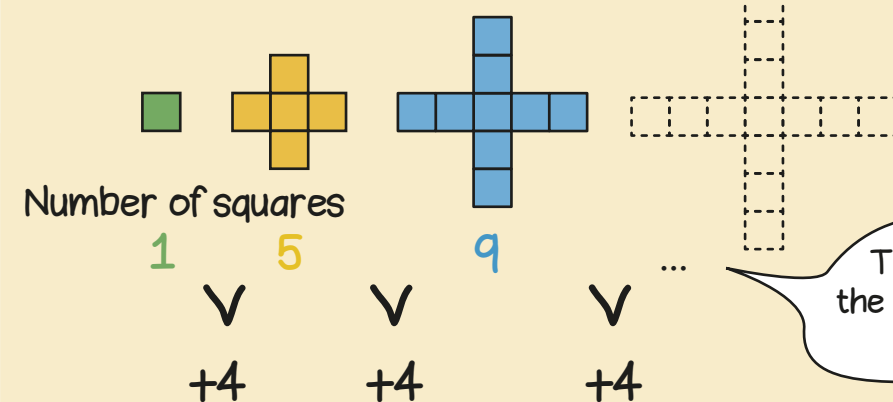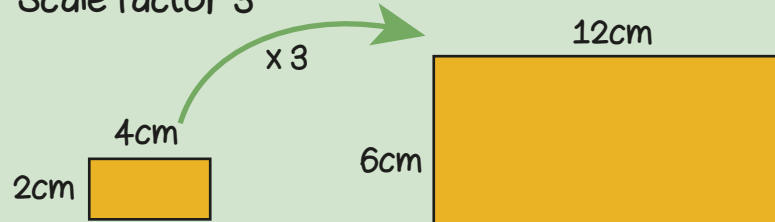
The next term in the linear sequence is 9 + 4 = 13