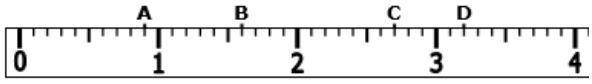
St Andrew's Academy

Mathematics Department

S1 COURSE BLOCK 2

PRE-ASSESSMENT
LEARNING EVALUATION

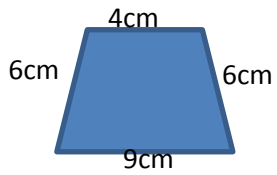
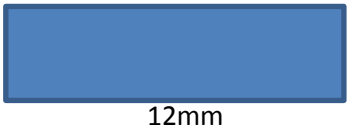
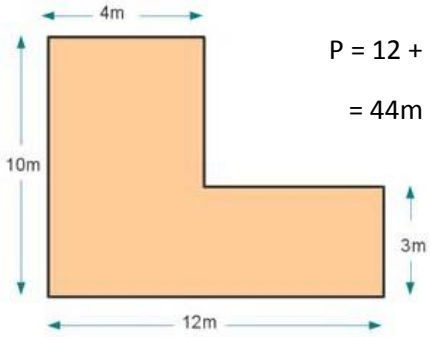
S1 BLOCK 2 **LEARNING EVALUATION**

NUMBER	Red	Amber	Green
○ I can round a number to the nearest whole number, 10, 100, 1000, 1 decimal place and 2 decimal places, e.g. – To nearest whole number: 3.45 -> 3	◯	◯	◯
• To nearest 10: a) 24 -> 20 b) 136 -> 140 c) 6785 -> 6790	◯	◯	◯
• To nearest 100: a) 437 -> 400 b) 8675 -> 8700	◯	◯	◯
• To nearest 1000: a) 1864 -> 2000 b) 42 790 -> 43 000	◯	◯	◯
• To one decimal place: a) 5.53 -> 5.5 b) 34.6735 -> 34.7	◯	◯	◯
• To two decimal places: a) 8.542 -> 8.54 b) 165.9355 -> 165.94	◯	◯	◯
○ I understand the place value using decimals, Th H T U . $\frac{1}{10}$ $\frac{1}{100}$ $\frac{1}{100}$	◯	◯	◯
○ I can read numbers from a decimal scale. 	◯	◯	◯
○ I can multiply decimals by 10, 100 and 1000: e.g. a) 5.6 x 10 = 56 b) 0.78 x 100 = 78 c) 9.03 x 1000 = 9030	◯	◯	◯
○ I can divide decimals by 10, 100 and 1000: e.g. a) 72 ÷ 10 = 7.2 b) 89 ÷ 100 = 0.89 c) 4.9 ÷ 1000 = 0.0049	◯	◯	◯
○ I can multiply decimals by a whole number: e.g. a) 3.83 x 6 =22.98 b) 0.4 x 8 = 3.2 (mentally)	◯	◯	◯
○ I can divide decimals by a whole number: e.g. a) 127.68 ÷ 8 = 15.96 b) 2.7 ÷ 3 = 0.9 (mentally)	◯	◯	◯

S1 BLOCK 2 **LEARNING EVALUATION**

	Red	Amber	Green
ALGEBRA			
○ I can simplify an algebraic expression by collecting like terms: e.g., a) 7d + 3d – d = 9d b) 8a + 4b – 2a + 3b = 6a + 7b	○	○	○
○ I can substitute values into an algebraic expression to gain a numerical answer: e.g. When d = 3, e = 7 and f = 4, find the value of: a) d + e: = 7 + 3, = 10 b) 2e: = 2 x 7, = 14 c) 5d – 6: = 5 x 3 – 6, = 15 – 6, = 9 d) 2e + f: = 2 x 7 + 4, = 14 + 4, = 18 e) 2e + 4d: = 2 x 7 + 4 x 3, = 14 + 12, = 26 f) d^2: = 3^2, = 3 x 3, = 9 g) def - de: =3 x 7 x 4 – 3 x 7, = 84 - 21, = 63 h) $\frac{ef}{2}$: = $\frac{7 \times 4}{2}$, = $\frac{28}{2}$, = 14	○	○	○
○ I can solve equations using the balancing method: e.g. a) 7y = 28 ÷7 ÷7 Y = 4 b) x – 7 = 18 + 7 + 7 X = 25 C) 2b + 5 = 11 -5 -5 2b = 6 ÷2 ÷2 b = 3	○	○	○

S1 BLOCK 2 **LEARNING EVALUATION**

	Red	Amber	Green
LENGTH, PERIMETER AND AREA			
○ I can measure and draw lengths accurately, in mm, cm and m.	◯	◯	◯
○ I can convert from cm to mm and from mm to cm (1cm = 10mm): e.g. a) 7cm - > 7mm b) 12.9cm - > 129mm c) 640mm -> 64cm	◯	◯	◯
○ I can convert from cm to m and from m to cm (1m = 100cm): e.g. a) 300cm - > 3m b) 625cm -> 6.25m c) 2.9m -> 290cm	◯	◯	◯
○ I can convert from m to km and from km to m (1km = 1000m): e.g. a) 5km - > 5000m b) 12.6km -> 12600m c) 5300m -> 5.3km	◯	◯	◯
○ I can calculate the perimeter of a shape: **(Remember sometimes you must work out missing lengths before you work out the perimeter.)** e.g. a)  P = 9 + 6 + 6 + 4 = 25cm	◯	◯	◯
b)  P = 12 + 3 + 12 + 3 = 30mm	◯	◯	◯
c)  P = 12 + 10 + 3+ 8 + 7 + 4 = 44m	◯	◯	◯

S1 BLOCK 2 **LEARNING EVALUATION**

- I can work out the area of a square and a rectangle, ensuring I show all lines of working:

e.g. a) Square

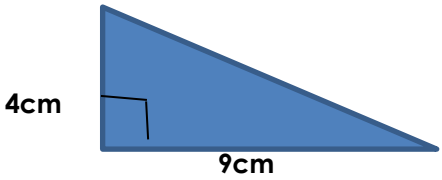
A = l x b
A = 5 x 5
A = 25cm²

b) Rectangle

A = l x b
A = 8.5 x 4
A = 34cm²

- I can work out the area of a triangle, ensuring I show all lines of working:

e.g. a) Right-Angled Triangle



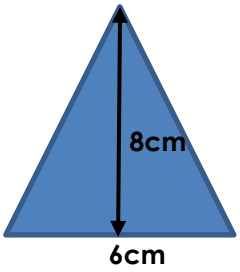
$A = \frac{1}{2} \times l \times b$

$A = \frac{1}{2} \times 9 \times 4$

$A = \frac{1}{2} \times 36$

$A = 18cm^2$

b) Any Triangle



$A = \frac{1}{2} \times b \times h$

$A = \frac{1}{2} \times 6 \times 8$

$A = \frac{1}{2} \times 48$

$A = 24cm^2$

S1 BLOCK 2 **REVISION**

NUMBER REVISION

Exercise 1

1. Round the following numbers to the nearest 10:
a) 93 b) 48 c) 364 d) 2518 e) 56 235

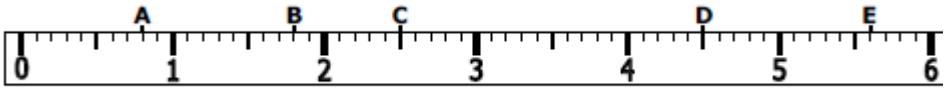
2. Round the following numbers to the nearest 100:
a) 879 b) 417 c) 3254 d) 2898 e) 967 489

3. Round the following numbers to the nearest 1000:
a) 8563 b) 1565 c) 76 963 d) 38 329 e) 754 596

4. Round the following numbers to 1 decimal place:
a) 3.27 b) 17.52 c) 79.2348 d) 536.57736

5. Round the following numbers to 2 decimal places:
a) 1.826 b) 9.812 c) 17.61345 d) 587.65436

6. Write down the number each arrow is pointing to on the scale below:



Exercise 2

1. Calculate:

a) 5.62 x 10 b) 0.936 x 10 c) 4.07 x 100 d) 63.205 x 100
e) 0.0845 x 100 f) 1.48 x 1000 g) 72.97 x 1000 h) 0.0456 x 1000
i) 343 ÷ 10 j) 65.9 ÷ 10 k) 0.7 ÷ 10 l) 638 ÷ 100
m) 23.4 ÷ 100 n) 1.6 ÷ 100 o) 54.8 ÷ 1000 p) 6544 ÷ 1000
q) 8.5 ÷ 1000 r) 0.54 ÷ 1000

Exercise 3

1. Calculate:
a) 23.8 x 6 b) 718.92 x 4 c) 0.87 x 5 d) 17.106 x 8

e) 44.7 ÷ 3 f) 2980.6 ÷ 7 g) 76.14 ÷ 9 h) 37.524 ÷ 2

2. Martin keeps a record of how far he hikes. On his last three hikes he walked 15.8km, 18.7km and 23.5km. How far did he walk in total?

3. A transport lorry weighs 10.87 tonnes when empty. When fully laden, it weighs 39.91 tonnes. How heavy is its load?

4. Eight pupils each bring their teachers £5.30 to pay for a trip. How much is this altogether?

5. Hana's mum pours juice from a jug into six tumblers. Each tumbler holds 0.58 litres. How much juice has she poured out?

6. Anna's total score for figure skating is 68.8. There are eight judges and each gave her the same score. What score did each judge give?

7. Sharjeel's dad bought eight identical panes of glass for his greenhouse. In total they cost £39.12. How much did one pane cost?

8. A physics teacher has electrical wire measuring 9.84m. What is the length of 10 pieces of wire?

9. A bag of coffee beans weighs 2.35kg. How much does one hundred bag of coffee weigh?

10. The total cost for 100 pupils to go on a school trip is £1346. How much did each pupil pay for the trip?

11. A tree trunk which measures 23.15 metres is cut into 10 equal section. What is the length of each section?

12. A small lorry is carrying seven crates. Each crate weighs 1096kg. The maximum the lorry can carry is 8000kg.

Can the lorry carry the crates safely? Explain your answer.

13. Bethany is going to see a film at the cinema. The bus will cost £0.90 each way and the cinema ticket is £2.25. How much change will she have from £5.00?

14. The weights of 2 parcels are 10.35kg and 8.69kg.

What is the difference in weight between the parcels?

ALGEBRA REVISION

Exercise 1

1. Simplifying the following expressions by collecting like terms:

a) $b + b + b + b + b + b + b + b =$
b) $16d - 9d =$
c) $7x + 8 - 5x =$
d) $5g + 8h - 3g + 6h =$
e) $8y + 4x - 2y - x =$
f) $15m + 11n - 9m - 5n =$
g) $6r + 12 - r - 5 =$
h) $6d + 2e + 5 - 2d + 7e - 3 =$
i) $7k^2 + k - 4k^2 + 3k =$
j) $c + 2c^2 + 8 + c + c^2 - 1 =$

2. Simplify:

a) $7 \times f$
b) $8 \times k$
c) $b \times c$
d) $g \times g$
e) $4m \times n$
f) $5p \times 6q$

Exercise 2

1. If $a = 2$, $b = 5$, $c = 6$, $d = 10$, find the value of:

a) $d - c$
b) $a + c$
c) $3b$
d) bc
e) abc
f) $3d - 12$
g) $4a + 3c$
h) $abc - d$
i) $cd - ab$
j) c^2
k) $\frac{bc}{a}$
l) $\frac{3c+a}{4}$

Exercise 3

1. Solve the following equations:

a) $6y = 54$ b) $3y = 24$ c) $2h = 48$ d) $x + 8 = 13$ e) $y - 5 = 16$

f) $14 = d + 7$ h) $20 = y - 6$

2. Solve the following equations:

a) $2x + 3 = 11$ b) $7y - 12 = 16$ c) $5g + 7 = 47$ d) $9p - 11 = 61$

e) $4a + 6 = 22$ f) $3r + 8 = 41$ g) $6b - 19 = 11$ h) $8x - 23 = 41$

LENGTH, AREA AND PERIMETER REVISION

Exercise 1

1. Convert each of the following units:

a) 6cm to mm b) 7.2cm to mm c) 850mm to cm d) 9mm to cm

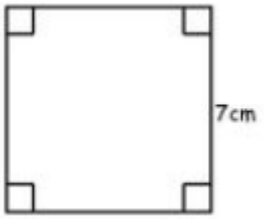
e) 8m to cm f) 12.3m to cm g) 800cm to m h) 1.8m to cm

i) 0.7m to cm j) 3km to m k) 6.3km to m l) 42700m to km

Exercise 2

1. Calculate the perimeter of the following shapes:

a)



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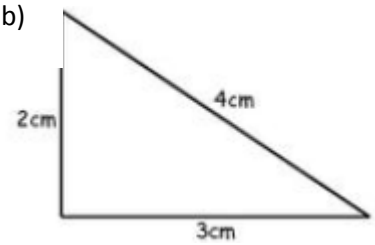
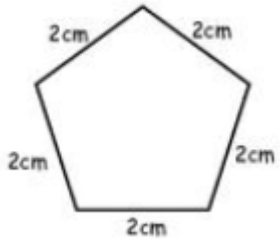
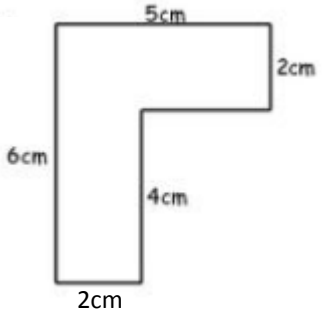


c)

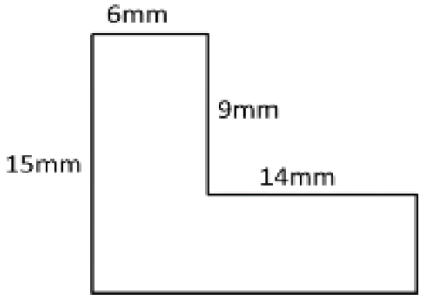


d)

e)



f)

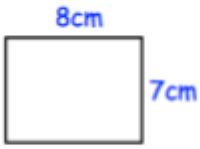


Exercise 3

1. Calculate the area of the following rectangles:

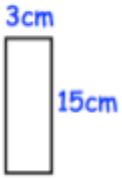
(a)

(b)



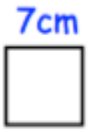
(c)

(d)

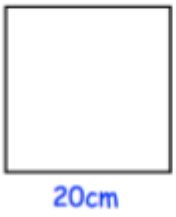


2. Calculate the area of the following squares:

(a)

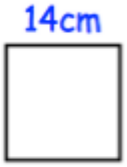


(b)



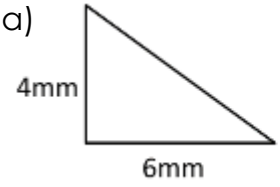
(c)

(d)

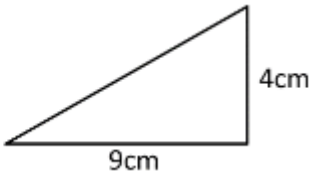


3. Calculate the area of the following triangles

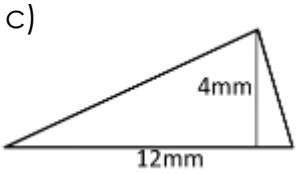
a)



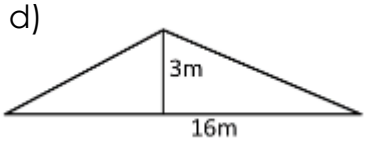
b)



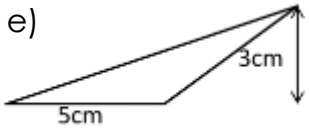
c)



d)

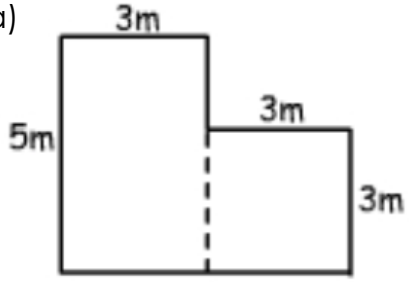


e)



4. Calculate the area of the following shapes:

a)



b)