

## Mr Coles' 9M5 Maths Weekly Task Grid – Week commencing 22<sup>nd</sup> June

Choose **1 purple task**, **1 orange task**, **2 green tasks (answers now included)** and **2 yellow tasks** from the grid. Complete them this week.

<p><b>Task 1</b></p> <p>Make a mind map of any <b>basic algebra</b> information you feel comfortable with so far. Add to it as you go along. Here is a start:</p> <div><div><div>2 x a = 2a</div><div>3 x q = 3q</div><div>2a x 3 = 6a</div><div>a x b = ab</div><div>2a x 3b = 6ab</div><div>a + 2 = <math>\frac{a}{2}</math></div><div>a + a = 2a</div><div>a x a = a<sup>2</sup></div></div></div> <p>Enlarged on next pages</p>	<p><b>Task 2</b></p> <p><b>Expanding Brackets</b> (called <b>Single Brackets</b>) has been set on <a href="#">MyMaths</a>.</p> <p>Make sure you do the lesson first! I again recommend mymaths this week in terms of the lesson, but doing a mix of this and Corbett is fine.</p> <p>Log on with your individual logins (email me if you can't get on). Work through the exercises then attempt the homework.</p>	<p><b>Task 3</b></p> <p>Go for <b>Expanding Brackets</b> on <b>Corbett Maths</b>: Video: <a href="#">Expanding Brackets</a></p> <p>Questions: <a href="#">Expanding Brackets</a></p> <p>Answers: <a href="#">Expanding Brackets</a></p> <p>You don't need to do all questions, maybe around a quarter.</p>	<p><b>Task 4</b></p> <p>Create a poster/PowerPoint/revision cards on <b>Basic Algebra</b>.</p> <p>Website to help:</p> <p>BBC Bitesize – <a href="#">Basic Algebra</a></p> <p>BBC Bitesize – <a href="#">Brackets</a></p>																																																																
<p><b>Task 5</b></p> <p>Make a quiz/PowerPoint/Kahoot on questions involving <b>Expanding Brackets</b>.</p> <p>Questions can involve anything to do with it. The more unique the better!</p> <p>Good ones will be featured on next week's grid.</p>	<p><b>Task 6</b></p> <p><b>Blockbusters</b> (ish)! Find your way across the maze by going through squares that are correct. Pick one from the first column, if it is true like <math>5(x + 4) = 5x + 20</math> then highlight it in a green colour or red if it isn't. You can then move up, down, left or right to a new square. You need to find a route of green to the other side.</p> <div><table><tr><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td></tr><tr><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td></tr><tr><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td></tr><tr><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td></tr><tr><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td></tr><tr><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td></tr><tr><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td></tr><tr><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td><td>12-16</td></tr></table></div> <p>Enlarged on next pages.</p>	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	12-16	<p><b>Task 7</b></p> <p>Fahima buys</p> <p>2 packets of bread rolls costing £1.50 for each packet 1 bottle of ketchup costing £1.60 3 packets of sausages</p> <p>Fahima pays with a £10 note. She gets 30p change.</p> <p>Fahima works out that one packet of sausages costs £2.30</p> <p>Is Fahima right? You must show how you get your answer.</p> <p>Enlarged on next pages.</p>	<p><b>Task 8</b></p> <p>If you aren't sure how to do any of these, just email me. I've enlarged the questions on the next page</p> <div><div><div>1) <math>44.2 \times 7.4</math></div><div>2) Share £120 in the ratio 2:5:1</div><div>3) Decrease 70 by 90%</div><div>4) <math>10 - 70 \div 7 + \sqrt{64}</math></div><div>5) A recipe for 4 biscuits needs 90g of flour. How much flour is needed for 10 biscuits?</div><div>6) Expand <math>x(x - 5)</math></div><div>7) Solve <math>4x - 5 = -25</math></div><div>8) Factorise fully <math>8x + 12</math></div><div>9) What is the LCM of 8 and 7</div><div>10) <math>\frac{3}{8} + \frac{5}{7}</math></div></div></div>
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<p><b>Task 9</b></p> <p>Answer the top questions made by <a href="#">James B.</a> last week on <b>Listing Outcomes</b>!</p> <p>There are two questions, they are on the next pages.</p> <p>Also, Bill eats a lot of junk food and should probably cut down.</p>	<p><b>Task 10</b></p> <p>Try this <a href="#">Brackets game</a>. I suggest Level 3, 4 then 5. Level 1 and 2 teach you about how to apply a negative across the brackets which isn't bad either.</p> <p>The buttons to change the level are underneath the questions.</p>	<p><b>Task 11</b></p> <p>Problem Solving:</p> <p>This hexagon has a perimeter of 24 cm.</p> <div><div><div></div><div></div><div></div></div></div> <p>Three of the hexagons are used to make this shape.</p> <p>What is the perimeter of the shape?</p> <p>Enlarged on next pages.</p>	<p><b>Task 12</b></p> <p><b>Simplifying 1</b> has also been set on <a href="#">MyMaths</a> – this is in case you feel like you need a little help reminding yourself of how algebra works.</p> <p>Or instead, <b>Brackets</b> has been set – this includes expanding double brackets which is a more advanced challenge, you've all done it before...</p> <div><div>ASPIRE</div></div>																																																																

## Task 1

Simple Algebra Rules

[www.cazoommaths.com](http://www.cazoommaths.com)

$$2 \times a = 2a$$

$$3 \times q = 3q$$

$$2a \times 3 = 6a$$

$$a \times b = ab$$

$$2a \times 3b = 6ab$$

$$a \div 2 = \frac{a}{2}$$

$$a + a = 2a$$

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

**Task 6**

$6(x + 5)$ $6x + 30$	$2(2x + 3)$ $4x + 6$	$4(5x - 9)$ $45x - 49$	$4(6t + 1)$ $24x + 4$	$9(6x - 2)$ $54x - 18$	$3(7t - 5)$ $21x - 15$	$5(1 - x)$ $5x + 1$	$x(x - 1)$ $x^2 - x$
$4(x + 2)$ $4x + 2$	$5(2x - 3)$ $10x - 3$	$3(8 - b)$ $24 - b$	$5(5x + 2)$ $25x + 10$	$2(7x - 3)$ $14x - 6$	$9(5 - b)$ $45 - 9b$	$4(3x + 6)$ $12x + 24$	$3(4t + 3)$ $12x + 9$
$5(x + 4)$ $5x + 20$	$x(x + 5)$ $x^2 + 5x$	$7(3x - 2)$ $21y - 14$	$t(t + 3)$ $t^2 + 3t$	$6(2x + 5)$ $12y + 30$	$8(x + 4)$ $8x + 32$	$6(8x + 3)$ $46x + 18$	$9(6 - x)$ $9x - 54$
$3(x + 7)$ $x + 21$	$2(6x - 1)$ $12x - 2$	$3(x - 3)$ $3x - 9$	$8(3 - x)$ $24 - 8x$	$x(x + 6)$ $2x + 6x$	$x(x - 11)$ $x^2 - 11x$	$7(6x - 9)$ $42x - 61$	$x(x - 9)$ $2x - 9x$
$5(x - 6)$ $5x + 30$	$7(2 - x)$ $7x + 14$	$8(7 - h)$ $56 - 8h$	$5(x - 8)$ $5x - 8$	$4(4x - 3)$ $16x - 12$	$3(6x + 5)$ $18x + 15$	$6(y - 1)$ $6y - 6$	$2(5x - 3)$ $10x + 6$
$3(5c - 1)$ $15c - 3$	$6(7 - x)$ $42 - 6x$	$9(3x + 5)$ $24x + 45$	$7(x - 2)$ $7x + 14$	$x(x + 3)$ $x^2 + x^3$	$3(3x + 7)$ $9x - 21$	$9(2y + 1)$ $18y + 9$	$p(p + 4)$ $p^2 + 4p$
$x(x - 7)$ $x^2 - 7x$	$2(3x + 1)$ $23x + 21$	$3(y - 7)$ $3y - 18$	$2(5 - g)$ $10 - 2g$	$5(4x + 1)$ $20x + 1$	$3(9x - 8)$ $27x - 8$	$5(x + 5)$ $5x + 25$	$6(2t + 8)$ $12x + 48$

Task 7

Fahima buys

- 2 packets of bread rolls costing £1.50 for each packet
- 1 bottle of ketchup costing £1.60
- 3 packets of sausages

Fahima pays with a £10 note.  
She gets 30p change.

Fahima works out that one packet of sausages costs £2.30

Is Fahima right?

You must show how you get your answer.

### **Task 8**

- 1)  $44.2 \times 7.4$
- 2) Share £120 in the ratio 2: 5: 1
- 3) Decrease 70 by 90%
- 4)  $10 - 70 \div 7 + \sqrt{64}$
- 5) A recipe for 4 biscuits needs 90g of flour. How much flour is needed for 10 biscuits?
- 6) Expand  $x(x - 5)$
- 7) Solve  $4x - 5 = -25$
- 8) Factorise fully  $8x + 12$
- 9) What is the LCM of 8 and 7
- 10)  $\frac{3}{8} + \frac{5}{7}$

### **Task 9 Question 1**

Bill would like an ice cream sundae. He has five flavours to choose from: Vanilla, Chocolate, Cookies and Cream, Strawberry and Peach. He can choose two flavours for his sundae.

- 1) List all possible combinations.
- 2) Write down the probability that a random sundae contains chocolate ice cream.
- 3) Write down the probability that a random sundae contains a fruit flavoured ice cream.

### **Task 9 Question 2**

Bill would like a pizza. He has five toppings to choose from: pepperoni, ham, mushrooms, pepper and chicken. He can choose two toppings for his pizza.

- 1) List all possible combinations.
- 2) Write down the probability that a random pizza contains a vegetable.
- 3) Write down the probability that a random pizza contains meat and a vegetable.

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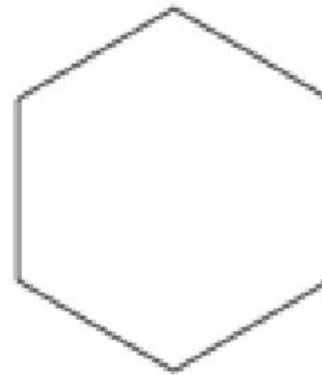
***James B.***

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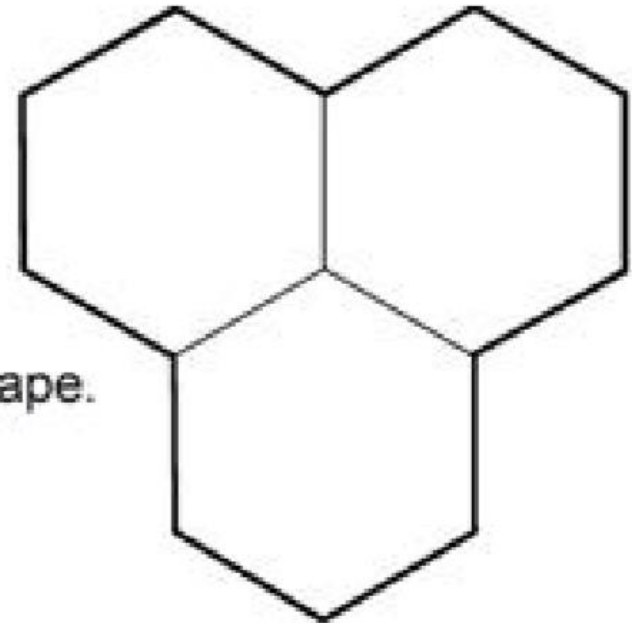
Task 11

## Problem Solving:

This hexagon has a perimeter of 24 cm.



Three of the hexagons are used to make this shape.



What is the perimeter of the shape?

Task 12

## Green Answers (Task 7, 8, 11)

### Quick 10 – Recall

- 1)  $44.2 \times 7.4$  **327.08**
- 2) Share £120 in the ratio 2: 5: 1  
**£30 : £75 : £15**
- 3) Decrease 70 by 90%  
**7**
- 4)  $10 - 70 \div 7 + \sqrt{64}$  **8**
- 5) A recipe for 4 biscuits needs 90g of flour. How much flour is needed for 10 biscuits? **225g**
- 6) Expand  $x(x - 5)$   **$x^2 - 5x$**
- 7) Solve  $4x - 5 = -25$   **$x = -5$**
- 8) Factorise fully  $8x + 12$   
 **$4(2x + 3)$**
- 9) What is the LCM of 8 and 7  
**56**
- 10)  $\frac{3}{8} + \frac{5}{7} = \frac{61}{56} = 1\frac{5}{56}$

Need to know  
formulae/facts

$11^2, 12^2, 13^2, 14^2, 15^2$

**121, 144,  
169, 196, 225**

Use of a  
calculator

Calculate

$$\sin^{-1}\left(\frac{2}{5}\right) = 23.6^\circ$$

Fahima buys

2 packets of bread rolls costing £1.50 for each packet  **$2 \times 1.50 = £3$**

1 bottle of ketchup costing £1.60

3 packets of sausages  **$3 + 1.60 + 0.30 = £4.90$**

Fahima pays with a £10 note.

She gets 30p change.

$$10 - 4.90 = £5.10$$

Fahima works out that one packet of sausages costs £2.30

Is Fahima right?

$$5.10 \div 3 = £1.70 \text{ per sausage pack}$$

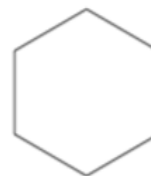
You must show how you get your answer.

**No Fahima is not right.**

### Problem Solving:

This hexagon has a perimeter of 24 cm.

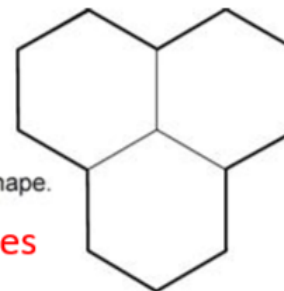
$$24 \div 6 = 4\text{cm}$$



Perimeter  
all sides  
added up

Three of the hexagons are used to make this shape.

**Perimeter of this shape = 12 sides**



What is the perimeter of the shape?  **$12 \times 4 = 48\text{cm}$**