# SUPER 12s

SUPER 12s CAN BE USED AS AN INDIVIDUALISED MASTERY LEARNING PROGRAM.

2 ALGEBRA
2.1 CONVENTIONS
2.1 LEVEL 5

NAME : _____

**Skill description:** Writing algebraic expressions from worded descriptions involving two operations.

**Essential Revision**

1. Identify the coefficient.

$$3 = 2x - 3$$

2. Rewrite using correct algebraic conventions.

$$0 + 1x$$

3. Rewrite using correct algebraic conventions.

$$y \times (-4)$$

4. Write an algebraic term for:

The product of $p$ and $3$

5. Identify the terms.

$$5x + 1 = 11$$

6. Rewrite using correct algebraic conventions.

$$1x \times 1x \times 1x \times 1x$$

7. Rewrite using correct algebraic conventions.

$b \times 5$

8. Write an algebraic expression for:

3 less than $y$

9. Which of these is an equation?

$4b = 5$

$3x - 12$

$4b - 4 + 0$

10. Rewrite using correct algebraic conventions.

$e^1 + 0$

11. Rewrite using correct algebraic conventions.

$6 \div 2c$

12. Write an algebraic term for:

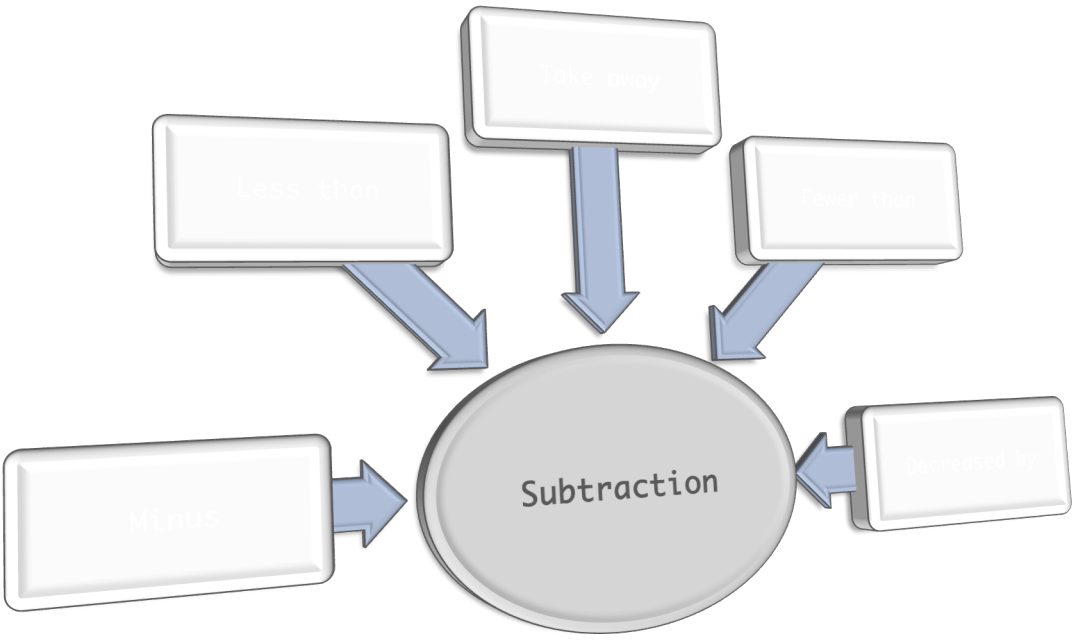
$y$ raised to the $5^{th}$ power

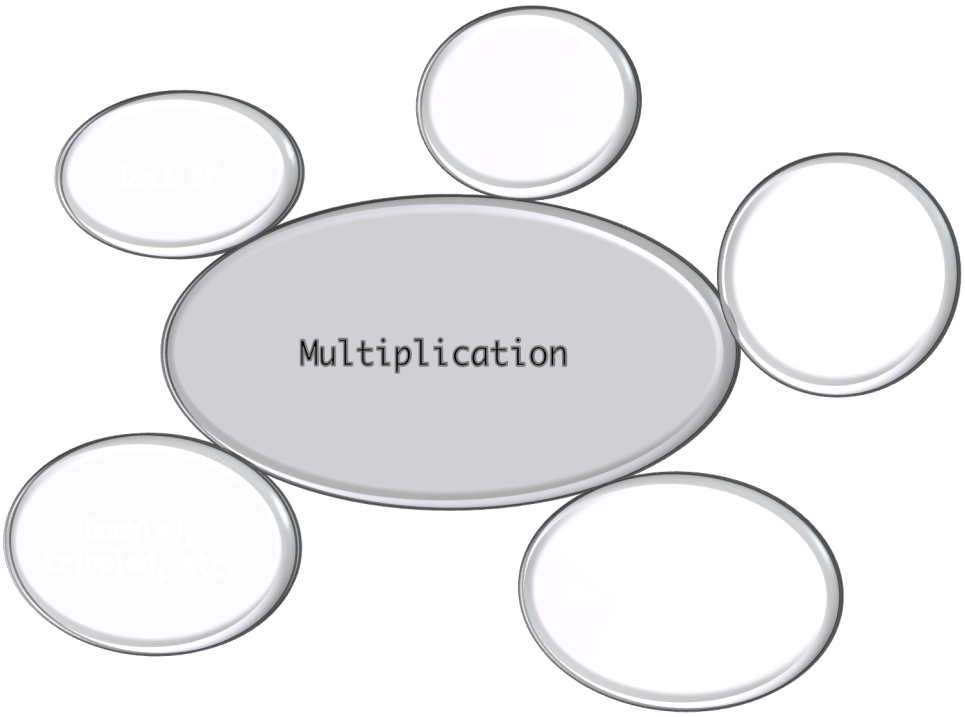
Solutions can be found at the end of the booklet.

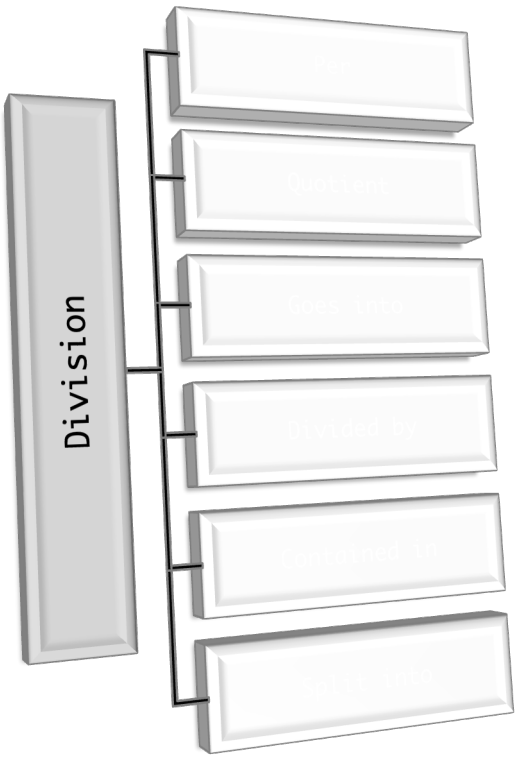
**score** $\frac{\quad}{12}$

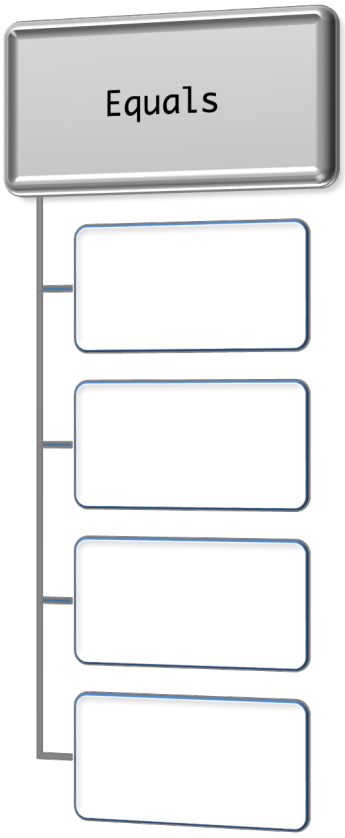
# STRATEGIES TO SOLVE THE PROBLEMS

See how many words you can recall from Level 4 that describe the operations.



**Example 1**

Write an algebraic expression for:

Add $7$ to $x$, then multiply the result by $5$.

**Solution**

Look for the keywords that describe the operations:

'Add $7$ to $x$'

$$x + 7$$

'Then multiply the result by $5$.'

$$5(x + 7)$$

We must remember to use brackets as we multiply the whole 'result' of the sum of $7$ and $x$.

**Example 2**

Write an algebraic expression for:

Reduce $y$ by the sum of $x$ and $9$.

**Solution**

Look for the keywords that describe the operations:

'Reduce $y$'

$$y -$$

'By the sum of $x$ and $9$.'

$$y - (x + 9)$$

**Example 3**

Write an algebraic expression for:

Divide the sum of $4$ and $x$ by $y$.

**Solution**

Look for the keywords that describe the operations:

'Sum of $4$ and $x$'

$$x + 4$$

'Divide the sum… by $y$.'

$$\frac{x + 4}{y}$$


**Example 4**

Write an algebraic expression for:

Raise the product of $r$ and $7$ to the $5^{th}$ power.

**Solution**

Look for the keywords that describe the operations:

'Product of $r$ and $7$'

$$7r$$

'Raise… to the $5^{th}$ power.'

$$(7r)^5$$

## QUESTIONS

Write an algebraic term or expression for:

1. Find the product of $c$ and $d$, then subtract $4$ from the result.

2. Add $5$ to $x$ then multiply the result by $4$.

3. Raise $x$ to the $3^{rd}$ power then add $8$ to the result.

4. Square $y$ then multiply the result by $x$.

5. Double $x$ then subtract $2$ from the result.

6. Add $4$ to $x$ then divide the result by $a$.

7. Reduce $x$ by the sum of $y$ and 6.

8. Double the sum of $x$ and 9.

9. Add 3 to $x$ and raise the result to the 3rd power.

10. Raise $y$ to the 5th power then divide by $p$.

11. Reduce 7 by the product of 3 and $x$.

12. Reduce $y$ by 3 then divide the result by $t$.


score $\frac{\quad}{12}$

# MASTERY TEST

Teacher's signature

I'VE COMPLETED

_____

LEVELS THIS YEAR



## Solutions to Essential Revision

| | |
|---|---|
| 1. $2$ | 2. $x$ |
| 3. $-4y$ | 4. $3p$ |
| 5. $5x,\ 1,\ 11$ | 6. $x^4$ |
| 7. $5b$ | 8. $y-3$ |
| 9. $4b=5$ | 10. $e$ |
| 11. $\frac{6}{2c}$ | 12. $y^5$ |

## Solutions to Questions

| | |
|---|---|
| 1. $cd-4$ | 2. $4(x+5)$ |
| 3. $x^3+8$ | 4. $xy^2$ |
| 5. $2x-2$ | 6. $\frac{x+4}{a}$ |
| 7. $x-(y+6)$ | 8. $2(x+9)$ |
| 9. $(x+3)^3$ | 10. $\frac{y^5}{p}$ |
| 11. $7-3x$ | 12. $\frac{y-3}{t}$ |