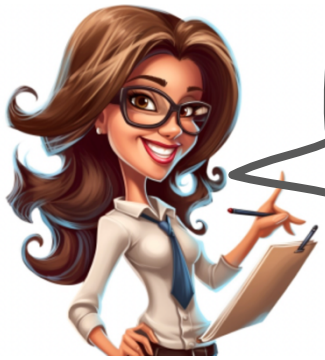
SUPER 12s



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

2 ALGEBRA
2.6 EXPANDING BRACKETS
2.6 LEVEL 6

NAME : _____

Skill description: Expanding brackets using the distributive law and collecting like terms.

Essential Revision

1. Use the distributive law to expand.

$$4(a+9)$$

2. Use the distributive law to expand.

$$9(2b+9)$$

3. Show that

$$2(3a+7)=6a+14$$

by substituting $a=2$.

4. Use the distributive law to expand.

$$-4(y-3)$$

5. Use the distributive law to expand.

$$x(3x-2)$$

6. Use the distributive law to expand.

$$5(x-5)$$

7. Use the distributive law to expand.

$$7(2x-1)$$

8. Show that

$$2(5-4x)=10-8x$$

by substituting $x=2$.

9. Use the distributive law to expand.

$$-9(5b+2)$$

10. Use the distributive law to expand.

$$3a^2(5-a)$$

11. Use the distributive law to expand.

$$p(4x+7)$$

12. Use the distributive law to expand.

$$-5(x-2)$$

Solutions can be found at the end of the booklet.

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

STRATEGIES TO SOLVE THE PROBLEMS

Example 1

Use the distributive law to expand, then collect like terms.

$$5x(x-2)-3x^2$$

Step 1

Multiply the $5x$ and x.

$$5x(x-2)-3x^2=5x^2$$

Step 2

Multiply the $5x$ and -2.

$$5x(x-2)-3x^2=5x^2-10x$$

Step 3

The term $-3x^2$ is carried over in this step.

$$5x(x-2)-3x^2=5x^2-10x-3x^2$$

Step 4

Identify the like terms, then combine.

$$5x^2-10x-3x^2$$

$$2x^2-10x$$

Example 2

Use the distributive law to expand, then collect like terms.

$$3a - 2a(a - 2)$$

Step 1

The term $3a$ is carried over in this step, as we need to expand the bracket first.

$$3a - 2a(a - 2) = 3a$$

Step 2

Multiply the $-2a$ and a.

$$3a - 2a(a - 2) = 3a - 2a^2$$

Step 3

Multiply the $-2a$ and -2.

$$3a - 2a(a - 2) = 3a - 2a^2 + 4a$$

Step 4

Identify the like terms, then combine.

$$3a - 2a^2 + 4a$$

$$7a - 2a^2$$

QUESTIONS

Use the distributive law to expand, then collect like terms.

1. $b^2(2b + 2) + b^2$

2. $x^2 + 5x(x - 2)$

3. $x(3x - 5) - 2x$

4. $4d(d - 3) - 3d^2$

5. $8p - 2p(p - 2)$

6. $3a^2(5 - a) - 7a^2$

7.

$2b(2b-1)+2b^2$

8.

$2p^2+p^2(2p+5)$

9.

$5x(x-2)-3x^2$

10.

$3a(7-a)+2a$

11.

$7b^2-b(b-2)$

12.

$4x^2+x(3x-1)$

SOLUTIONS CAN BE FOUND AT THE END OF THE BOOKLET.

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

MASTERY TEST

Teacher's signature

I'VE COMPLETED

_____

LEVELS THIS YEAR

Solutions to Essential Revision

1. $4a + 36$	2. $18b + 81$
3. $26 = 26$	4. $-4y + 12$
5. $3x^2 - 2x$	6. $5x - 25$
7. $14x - 7$	8. $-6 = -6$
9. $-45b - 18$	10. $15a^2 - 3a^3$
11. $4px + 7p$	12. $-5x + 10$

Solutions to Questions

1. $2b^3 + 3b^2$	2. $6x^2 - 10x$
3. $3x^2 - 7x$	4. $d^2 - 12d$
5. $12p - 2p^2$	6. $8a^2 - 3a^3$
7. $6b^2 - 2b$	8. $2p^3 + 7p^2$
9. $2x^2 - 10x$	10. $23a - 3a^2$
11. $6b^2 + 2b$	12. $7x^2 - x$