INTRODUCTION TO ALGEBRA

MTH 3-14a

I can collect like algebraic terms, simplify expressions and evaluate using substitution.

MTH 3-06a

Having explored the notation and vocabulary associated with whole number powers and the advantages of writing numbers in this form, I can evaluate powers of whole numbers mentally or using technology.

Pupils should be able to:

- Find missing numbers,   e.g. 8 + □ = 15
- Use a simple "function machine"   e.g. 7 → | x 2 ⟩ → ?
- Use a "function machine" in reverse   e.g. ? → | x 3 ⟩ → 21
- Understand the use of letters for unknown numbers in a variety of contexts
- Evaluate simple expressions   e.g. 3x, xy, 4x + 2
- Understand equivalence of expressions, and collect like terms, in simple cases   e.g. 2x + 3y + 5x
- Know the effect of multiplying by zero   e.g. 5a = 0 when a = 0
- Use two stage "function machines"
- Understand and use power notation   e.g. x^3, $3y^2$

PUPILS SHOULD COMPLETE THE FOLLOWING EXERCISE AND ASSESS THEIR PROGRESS BY TICKING ONE OF THE OPTIONS FOR EACH TOPIC IN THE TABLE BELOW

	DEVELOPING	CONSOLIDATING	SECURE
Collect like terms and simplify (Question 1)			
Evaluate expressions (Question 2)			
Equivalent expressions (Question 3)			

mymaths lessons: library/algebra/algebraic manipulation/simplifying 1

library/algebra/expressions and formulae/substitution 1

1.   Write each of the following in a shorter form :

    a)   12 + 3 – 7   b)   3x + 4x   c)   5f + 6f + 2f
    d)   7y – 2y   e)   5h + 4 – 2h   f)   x + 4y + 6x
    g)   12n – 4m -3m   h) $x^2 + 3x^2$

2.   If a = 8, b = 5 and c = 2, calculate

    a) $a + b$ b) $a - b$ c) $b + c$ d) $a + 10$
    e) $a - c$ f) $3a - 6$ g) $2a + 3c$ h) $8c - 3b$
    i) a^2 j) $c^3 - b$ k) $ab \div c$ l) $2a + 4b \div 4c$

3.   Which of these shapes have the same perimeter?