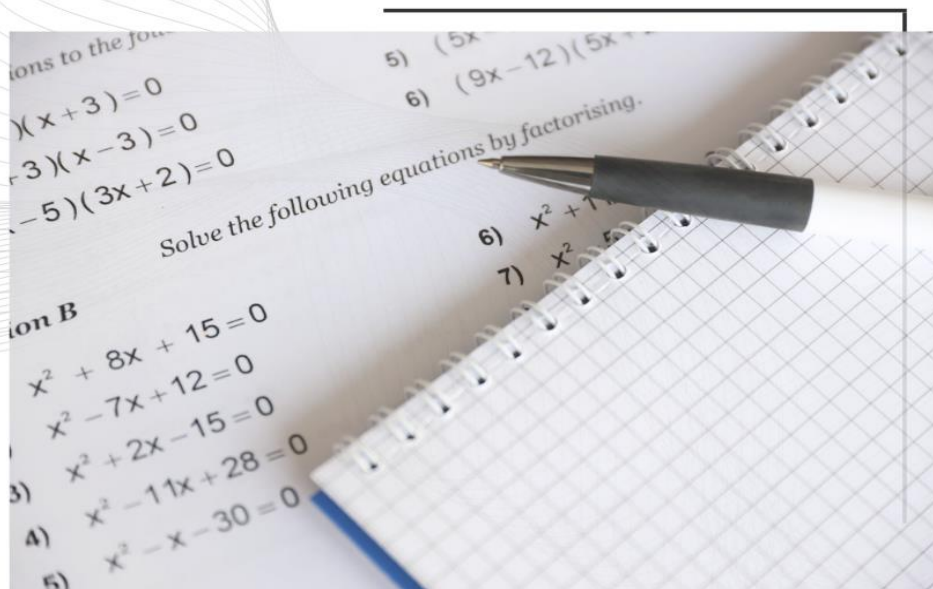# MALMS8

TAILORED LEARNING, PERSONALIZED PROGRESS

SUPPLEMENTARY MODULE 6

Multiplying Simple Monomials and Binomials with Simple Binomials with Simple Binomials and Multinomials, Using the Distributive Property with Various Techniques and Models

GRADE-8

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MULTIPLYING SIMPLE MONOMIALS AND BINOMIALS WITH SIMPLE BINOMIALS AND MULTINOMIALS, USING THE DISTRIBUTIVE PROPERTY WITH VARIOUS TECHNIQUES AND MODELS

Hey, champs, if you're feeling a bit overwhelmed or struggling to keep up, don't worry – you're not alone! Learning algebra can be like solving a puzzle, and sometimes it takes a little extra time to find the right pieces. But guess what? Every stumble is just a step closer to mastering the challenge! In this supplementary session, we'll take it slow and steady, focusing on building a strong foundation in multiplication with monomials and binomials. We'll go back to basics, review key concepts, and practice with patience and persistence until it all clicks.

💡 LEARNING OBJECTIVES

Demonstrate understanding of the basic principles and concepts of multiplication of simple monomials and binomials with simple binomials and multinomials using the distributive property with various techniques and models.
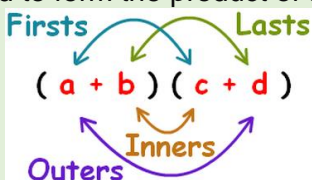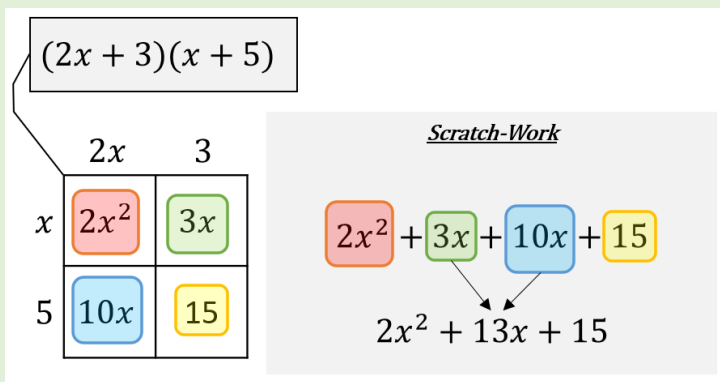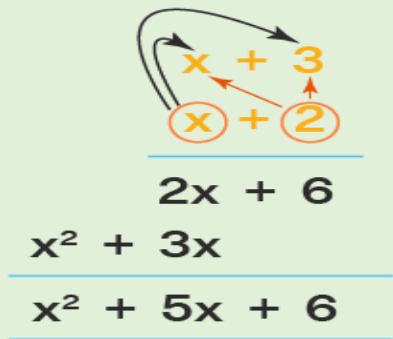
Characterize different techniques and models in multiplying simple monomials and binomials with simple binomials and multinomials using the distributive property.

Exhibit accuracy in identifying various techniques and models using distributive property property in multiplying simple monomials and binomials with simple binomials and multinomials

Getting deeper…

Principle/Concept	Explanation
Distributive Property	The distributive property is a fundamental algebraic property that allows us to distribute a value outside parentheses to each term inside. For example, $$a(b + c) = ab + ac.$$
Multiplying Monomials	Multiplying monomials involves multiplying terms that contain only one variable raised to various powers or coefficients. To multiply monomials, you multiply the coefficients together and add the exponents of the same variables. For instance, $$3x^2 \cdot 2x^3 = 6x^5.$$
Multiplying Binomials	Binomials are expressions with two terms. Multiplying binomials can be done using various methods such as the distributive property, FOIL method (First, Outer, Inner, Last), box method, and vertical method. The result is a trinomial, an expression with three terms.
Techniques and Models	There are several techniques and models for multiplying binomials, including the: 1. Distributive property 2. FOIL method 3. Box method 4. Vertical method Each technique offers a different approach to visualize and solve multiplication problems, catering to different learning styles and preferences.

FOIL Method	The FOIL method is a mnemonic used to multiply two binomials. It stands for First, Outer, Inner, and Last. This method involves multiplying the first terms, then the outer terms, the inner terms, and finally the last terms. The results are then combined to form the product of the binomials. Firsts — Lasts $(a + b)(c + d)$ Inners Outers
Box Method	The box method, also known as the area model, uses a rectangular grid to represent the terms of two binomials. Each box in the grid represents the product of corresponding terms. This method provides a visual way to organize and compute the multiplication of binomials, especially useful for complex expressions. $(2x + 3)(x + 5)$ $2x$ 3 x $2x^2$ $3x$ 5 $10x$ 15 *Scratch-Work* $2x^2 + 3x + 10x + 15$ $2x^2 + 13x + 15$
Vertical Method	The vertical method is a technique for multiplying binomials and polynomials where one expression is written vertically above the other. Each term of the bottom expression is multiplied by each term of the top expression. The resulting products are then added together to obtain the final answer. $x + 3$ $x + 2$ $2x + 6$ $x^2 + 3x$ $x^2 + 5x + 6$