



Planning for your Key Elements to Algebra Success Class

Lesson 30 – Multiplying Monomials & Polynomials

Materials Needed: red and yellow Algebra Tiles Teacher and Student

Objective: The student will learn how to multiply monomials and polynomials

Essential Question: 1. Does the distributive property change when variables are involved? 2. Do you follow the same rules for multiplying monomials when distributing a monomial to a polynomial?

Word Wall Words: Distributive Property

Agenda:

Activity	Time Frame	Notes/Details
Environment	N/A	Groupings – cooperative pairs, whole group and individual Create word wall word for “Distributive Property” Technology – DVD video of lesson 30, overhead projector
Warm-up	5 minutes	Review of multiplying monomials Good Questions: <ul style="list-style-type: none"> • Identify each part of the term $3m^2$. 3=coefficient, m=base, ²=exponent. • What does $2(-4x)$ mean? 2 groups of $-4x$ items. Invite 5 students to the board to post the answers to each question and share their answers with the class. No modification necessary to fit in 5 minute time frame.
Lesson # ____	40-50 minutes	<p><u>Goal</u> – To use Algebra Tiles to help students understand the distribute property when multiplying a monomial by a polynomial</p> <p><u>Lesson Flow:</u></p> <ol style="list-style-type: none"> 1. Complete examples at the concrete level using t-chart on S270 & connecting to the pictorial level having students draw each representation (monomial • polynomial) using examples on S271 – modeling, and S272 & S273 – individually or in pairs. <ul style="list-style-type: none"> • Do #'s 1 & 2 on S271, and #'s 2, 3, 4, and 5 on S272 & S273 (if short on time) Questions to ask: <ul style="list-style-type: none"> • The first monomial/polynomial represents what? Width – represent vertically. • The second monomial/polynomial represents what? Length – represent horizontally. • When we find the product what shape is formed on the inside of the t-chart? Rectangle. • What does the product represent? The area of the rectangle. • When I multiply a negative by a positive, or a positive by a negative my answer will be what color? Red. • When I multiply two positives or two negatives my answer will be what color? Yellow. • What do you notice about your answer? • Can you create another example for your partner to



		<p>solve? Share a few of these as time allows.</p> <ul style="list-style-type: none"> • How could you check their answer? <p>2. Additional practice – concrete/pictorial on S274 – individually.</p> <ul style="list-style-type: none"> • Do #'s 1 & 2 only (if short on time) <p>Questions to ask:</p> <ul style="list-style-type: none"> • Continue using with questions from above. <p>3. Connect to abstract by having students use the distributive property – show by drawing arrows from monomial to each term in the polynomial to multiply on S275 – model (first 2 problems), guided practice (3 & 4), and cooperative pairs (for problems 5–10).</p> <ul style="list-style-type: none"> • Do #'s 1 -6 only (if short on time) <p>Questions to ask/Guiding Learning:</p> <ul style="list-style-type: none"> • Will we always be able to use Algebra Tiles to solve these problems? No. Why or Why not? Answers will vary – because we may not have enough Algebra Tiles, depending on the exponent we may not be able to model an example – no algebra tile to represent x^3. • Relate back to the model how you multiplied each term. What property is this? Distributive. • Have students draw arrows showing how to distribute the monomial to each term in the polynomial. • How could we check these examples? • Create your own example and have your partner solve it. <p>Finish steps O, L, V, and E of the SOLVE problem.</p> <p>Let students know that the <u>quiz</u> on T719-T720 will be given on Friday. <u>Additional Activity</u> – to follow up this lesson T1261-T1262 chain reaction</p> <p><u>Link to Traditional Text</u> – This lesson is being used to introduce multiplying polynomials in place of the Multiplying Monomials and Polynomials lesson in the traditional text. Continue with Lessons 31 and 32 from KEAS. Extend through the traditional text with multiplying polynomials lessons referencing manipulative use that guided discovery for students as well as the box method & graphic organizers (from Lessons 31 & 32).</p>
Closure	5 minutes	Review the Essential Questions – encourage students to answer “why

Notes: