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| Date: | | | Duration of Lesson: 25 Minutes | |
| Title of Unit: Math Talks | | | Title of Lesson: | |
| Lesson Objectives: Students will be able to connect the use of algebra tiles to understanding algebraic expressions | | | | |
| Groupings (e.g., whole class, small groups, co-teaching): Whole Class | | | | |
| Skills & Standards: CCSS.MATH.CONTENT.7.EE.A.1: Use properties of operations to generate equivalent expressions.  Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. | | | | |
| **Progression of Learning & Teaching** | | | | |
| Opener: | * On each desk, there will be a set of algebra tiles for when the students enter the room. * Because this is a discovery lesson, the goals will not be presented at the beginning. * Students will begin by making observations about their tiles | | | **Points to Remember**  Picture from [EMBIBE](https://www.embibe.com/exams/cubic-polynomials)  Notation: |
| Activities & Tasks: | **Instructional Lesson: *(include as much detail as needed for others to understand the lesson)***   * Give students time to work with the tiles. * Ask: “What did you notice? What do you wonder about?” * Student: students will find ways to group their tiles in a way that makes sense to them and that they can explain to others. * We Do: Facilitate a class discussion * What do you notice? * How can the tiles be grouped? * List ideas on the board * “Can you come up with a different way to organize the tiles?” * Decide as a class (with guidance) what the tiles actually stand and can be used for. Be sure to correct any misconceptions that may arise.     Activities/Tasks:   * Sorting of tiles * Discussing | | | Resources:   * Set of algebraic tiles for each student * Individual whiteboard, marker, and eraser for students * Large whiteboard and markers to record student observations * [A Beginner's Guide to Teaching with Algebra Tiles video](https://www.youtube.com/watch?v=AN4MGUP4VXQ) * [Desmos Algebra Tiles activity builder](https://teacher.desmos.com/activitybuilder/custom/58d26f0673718c0482447d2d) * [Desmos Algebra Tiles: Equations and Expressions](https://teacher.desmos.com/activitybuilder/custom/5dcd5529976f87557e48f8fb) * [Desmos Algebra tiles for combining like terms](https://teacher.desmos.com/activitybuilder/custom/5b22ca2822ad447e1c654cb8) * [Desmos Algebra Tile Challenges](https://teacher.desmos.com/activitybuilder/custom/5a80d4e5e5733503557b6a94)     Vocabulary:   * Algebra tiles - Algebra tiles are square and rectangle-shaped tiles that represent numbers and variables * Algebraic Expression – a symbol or a combination of symbols used in algebra, containing one or more numbers, variables, and arithmetic operations * Term – a single mathematical expression * Coefficient – a numerical or constant quantity placed before and multiplying the variable in an algebraic expression * Variable – a symbol (usually a letter) standing in for an unknown numerical value in an expression and equation * Exponent – a symbol written above and to the right of a mathematical expression to indicate the operation of raising to a power * Like terms – Terms whose variables (such as x or y) with any exponents (such as the 2 in ) are the same * Unlike terms - Algebraic terms, which does not have the same literal coefficients, and cannot be raised to the same power * Constant- a value or number that never changes in expression   Scaffolding/Differentiation:   * Be sure to check on each student for understanding |
| Level of Cognitive Complexity: | ☐ Creating  ☐ Evaluating  ☐ Analyzing | ☐ Applying  ☐ Understanding  ☐ Remembering | |
| Key questions: | * What mathematical concept(s) could the tiles be used to help with understanding? | | |
| Closure: | * Exit ticket: Using the algebra tiles, create one expression that contains four terms, two variables and at least one coefficient. | | |
| Next Steps: | * Use the tiles to help when teaching about Algebraic Expressions | | | Formative Assessment Criteria for Success:   * After further instruction, student will be able to solve homework assignments by combining like terms in Algebraic Expressions. |