**Algebra Unit 1 Relationships and Reasoning**

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| **Know:** at the end of this unit, students will know… | **Understand:** at the end of this unit, students will understand that… | **Do:** at the end of this unit, students will be able to… |
| * Units of measurement * Conversion rates between units * Expression and its parts * Equation and its parts * Order the operations * Exponential and Linear Equations * Inequalities * Formula | * I understand that context creates meaning. * I understand that the structure of expressions helps make sense of the relationships they model. * I understand that equations and expressions model relationships. * I understand that the solution to a problem is the result of mathematical reasoning. | * Use the context of a problem to answer questions and justify solutions. * Explain how changes affect the value of a model and interpret the parts of an expression. * Create and manipulate equations with two or more variables to represent relationships that solve problems. * Write or verbalize complete evidence of the solution process. |

**Essential Questions:**

* How can we use what we know about units and structure to help us make sense of problems?
* What does it mean to find the solution to a problem?
* Why does the context of a problem matter?
* What makes a solution viable?

Learning Targets

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| 1 | 2 | 3 | 4 |
| A) I understand that context creates meaning as evidenced by: (N.Q.1, N.Q.2, N.Q.3) | | | |
| I can use units appropriately in my solution in relation to the context of the problem | I can choose and interpret units consistently in formulas and solutions | I can use the context of a problem to answer questions and justify my solution | I can explain how the meaning of a problem is essential to sense-making for a given problem |
| B) I understand that the structure of expressions help make sense of the relationships they model as evidenced by:  (A.SSE.1a, A.SSE.1b) | | | |
| I can name the *parts* of an expression | I can match the *parts* of an expression to a given situation | I can identify a group of two or more parts as a single entity within the context of a problem or pattern | I can use the structure of an expression to change/adapt the model for multiple outcomes |
| C) I understand the effect of changing a value in an expression as evidenced by: | | | |
| I can interpret how a change in value affects the original problem | I can explain how changes to the value of a *part* of an expression affect the overall value of a model | I can interpret a solution to an equation in the context of a problem | I can interpret a solution to an inequality in the context of the problem |
| D) I understand that equations and expressions model relationships as evidenced by:  (A.CED.1, A.CED.2,A.CED.3, A.CED.4) | | | |
| I can write expressions that match written descriptions of numbers *(more than, twice, less than, etc.)* | I can create expressions to model a problem and use it to find a solution | I can create an expression to generalize a pattern or relationship using variable(s) | I can rearrange equations representing the same relationship to highlight a quantity of interest |
| E) I understand that the solution to a problem is the result of mathematical reasoning as evidenced by: | | | |
| I can write or verbalize the answer, not my solution process | I can write or verbalize some evidence of my solution process | I can write or verbalize complete evidence of my solution process | I can write or verbalize organized and reliable evidence of my solution process and can justify the steps in my solution |