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Sequencing Rational

The sequencing of a math curriculum is crucial to successfully teaching the intended concepts. Math is very sequential in nature, meaning that skills often build off of one another. This curriculum combines class relations and logical prerequisite organization methods. The curriculum is initially organized into five sub-units that follow the class relations approach. This means that each sub-unit has a central theme such as expressions, equations, etc. These sub-units are then organized in a logical prerequisite where each sub-unit builds off of the concepts learned in the previous. This method of building allows students to see how the concepts are related and how they all fit into the larger unit as a whole.

The first stage of the curriculum on patterns and expressions sets the stage for the unit. Expressions and patterns are used to establish a hands-on model for concepts in the following sub-units. Students are introduced to seeing algebra as physical manipulatives, symbolic form and written form. The skills in this sub-unit help the learner attain the necessary skills to tackle more abstract concepts in the following sub-units.

Sub-unit two moves the learner into the next major skill of the unit, solving equations. The learning activities of this unit use the hands-on model to see the relationship between integers, order of operations, and solving equations. Students then make the transition of applying the hands-on model to real-world application of solving equations. Following sub-unit one and two, the student should have a conceptual understanding of the difference between an expression and equation.

Sub-unit three is short and to the point. Students use the skills attained in sub-unit two and apply it to a new scenario, inequalities. Students then learn how to model this concept using number lines. Application to word problems follows the initial learning process. Students should now have a conceptual understanding of expressions, equations, and inequalities.

Sub-unit four is where the real work begins. Students begin work with linear equations by working with patterns, a concept they are very familiar with by 7th grade. Students use their knowledge of patterns to transform data into tables, graphs, written, and symbolic form. These four forms are the acceptable ways of writing linear equations. After exposure to the four ways of writing a linear equation, students then work through a series of labs that apply the forms of linear equations to real world data. Students then use the lab data to make informed decisions about topics. This process not only teaches students the concept but also provides the learning in a real- life context while helping students appreciate the connection between math and science.

Stage five expands the previous learning to linear inequalities. This final sub-unit of the unit allows students to determine when in life an exact answer is necessary and when an approximation/estimate is ok. In completion of the unit, students should have a conceptual understanding of what expressions, equations, inequalities, linear equations, and linear inequalities are and when to use them.

Throughout the unit, it is critical that previously learned concepts are compared and contrasted to others. This allows the students to see how the concepts are related and how they are built off of one another. All concepts are taught initially with hands-on models, then symbolic form, and finally application. This ensures that the appropriate background knowledge

has been built prior to requiring learners to apply their learning to a new situation. This method also ensures that concrete and abstract thinkers alike can be successful with this unit.