ILLINOIS STATE BOARD OF EDUCATION

MATHEMATICS GRADE 7

Theory of Action: Academic standards represent a collective commitment around what students should learn each year. The state assessment asks students to demonstrate their knowledge, skills, and understanding related to these standards using a common measure. The resulting data allows us to see patterns in performance that should guide school and district improvement, helping identify areas of strength and opportunity.

Role of PLDs in Defining Proficiency: Performance level descriptors bridge the state assessment to classroom instruction and the systems of formative assessments that guide local instruction and choices about individual students. ***Academic proficiency represents a range of observable student performance characteristics***. There are multiple pathways to proficiency, and students rely upon their strengths differently within that range of performance.

Proficiency and Difficulty: A student's ability to demonstrate proficiency is influenced by the complexity of the texts or stimuli presented, tasks they're asked to complete, and the contexts in which they are engaged. As student performance improves, students are typically able to handle more challenging texts/stimuli, tasks, and contexts, and are able to demonstrate their skills and knowledge more accurately and consistently.

Claim 1: Ratios & Proportional Relationships[i]   *Student performance indicates the ability to ...*

Level 4 **Above Proficient**	Efficiently compute unit rates with complex fractions, apply proportional relationships by identifying them, find constants of proportionality, construct, and use equations, interpret graphs, and solve complex ratio and percent problems with real-world contexts.
Level 3 **Proficient**	Compute unit rates with complex fractions, solve proportional relationships by identifying them, find constants of proportionality, construct, and use equations, interpret graphs, and solve complex ratio and percent problems.
Level 2 **Approaching Proficient**	Calculate unit rates, identify proportional relationships, identify constants of proportionality, interpret graphs, solve one-step ratio problems, and solve one-step percent problems.
Level 1 **Below Proficient**	Demonstrate a basic understanding of ratios, proportional relationships, and unit rates.

Claim 2: The Number System[ii]   *Student performance indicates the ability to ...*

Level 4 **Above Proficient**	Explain four basic operations (addition, subtraction, multiplication, and division) with rational numbers by representing them in various contexts. Use models and apply properties to solve multi-step problems; show awareness of contexts in which quantities combine to make zero; use number lines; and convert between mixed numbers and decimals.
Level 3 **Proficient**	Perform calculations with rational numbers, including both positive and negative values and those represented as fractions and decimals; explain real-world applications and number line representations; use models; apply the properties of operations; convert between fractions and decimals; and solve complex problems.
Level 2 **Approaching Proficient**	Apply the four basic operations to solve real-world and mathematical problems involving integers. Use number lines, models, properties of operations, and real-world contexts to understand and represent the relationships between positive and negative numbers.
Level 1 **Below Proficient**	Use the basic four operations to answer questions involving integers. Represent positive numbers using models.

Claim 3: Expressions & Equations[iii] *Student performance indicates the ability to …*

Level 4 **Above Proficient**	Derive and solve equations, including applying properties of operations. Represent the properties of operations with rational coefficients to construct multi-step equations and inequalities. Solve real-world and mathematical problems with rational numbers, using variables and constructing and interpreting equations and inequalities.
Level 3 **Proficient**	Use properties of operations to manipulate linear expressions with positive and negative rational coefficients, formulate equations and inequalities to solve specific forms of these equations, and graph and interpret the solution sets in real-world contexts.
Level 2 **Approaching Proficient**	Use operational properties to manipulate expressions and solve equations and inequalities involving rational numbers and integers. Graph solutions.
Level 1 **Below Proficient**	Identify equivalent expressions, solve single-step inequalities, use variables to represent quantities, and identify solutions on a number line.

Claim 4: Statistics and Probability[iv] *Student performance indicates the ability to …*

Level 4 **Above Proficient**	Explain how statistical concepts like random sampling; measures of center; and variability, probability, and simulation can be used to make inferences, predictions, and comparisons about populations and events. Evaluate the consistency of models with data.
Level 3 **Proficient**	Use statistical principles like random sampling; measures of center; and variability, probability, and simulation to make inferences, compare populations, and predict probabilities.
Level 2 **Approaching Proficient**	Use statistical concepts and models to draw inferences, generate samples, and calculate probabilities. Use the results to compare populations.
Level 1 **Below Proficient**	Use provided data analysis to make inferences and to analyze the data distribution.

Claim 5: Geometry[v] *Student performance indicates the ability to …*

Level 4 **Above Proficient**	Apply geometric concepts and formulas to solve problems involving scale drawings, circles, 3D figures, and angles. Explain how to solve problems involving area, volume, and surface area of various shapes, including composite shapes.
Level 3 **Proficient**	Apply scale factors, geometric principles, and formulas to analyze and replicate geometric figures, including determining actual dimensions and creating scaled drawings, solve problems related to angles, area, volume, and surface area for both two- and three-dimensional objects using relevant mathematical concepts.
Level 2 **Approaching Proficient**	Identify scale factors, angle measurements, cross sections, and formulas for area and circumference. Use angle relationships to solve problems related to the dimensions of various two- and three-dimensional shapes.
Level 1 **Below Proficient**	Identify geometric shapes and cross-sections without scale, calculate area and circumference using given formulas, and solve problems involving the area of two-dimensional figures, but without applying angle relationships for unknown measures.