

**Content Standard A1
Eighth Grade Level
Numeration**

*Students understand mathematical facts concepts, principles, and theories.
They model numbers and their representations, relationships, operations and systems.*

State Mathematics Performance Standards 6 th -8 th	KGBSD Performance Standards	State Grade Level Expectations (GLE's)
M1.3.1 Read, write, model, and order real numbers, explaining scientific notation, exponents, and percents.	1.1 Use the rational number system and pi. Use scientific notation and exponents	<p><u>Numeration: Understanding Numbers</u> The student demonstrates understanding</p> <ul style="list-style-type: none"> • of real numbers by <p>[8] N-1 ordering <u>real</u> numbers (M1.3.1)</p> <p>[8] N-2 distinguishing between a whole number in scientific notation and real numbers in standard form (M1.3.1)</p> <p>[8] N-3 converting between expanded notation (multiples of ten <u>with exponents</u>) and standard form (M1.3.3)</p> <ul style="list-style-type: none"> • of <u>rational numbers</u> (fractions, decimals, or percents including <u>integers</u>) by <p>[8] N-4 identifying, describing, or illustrating equivalent <u>representations</u> (M1.3.4 & M3.3.5)</p> <p>[8] N-5 expressing products of numbers using exponents (M1.3.1 & M1.3.3)</p> <p><u>Numeration: Understanding Meaning of Operations</u> The student demonstrates conceptual understanding of mathematical operations by describing or illustrating</p> <p>[8] N-6 the effects of arithmetic operations on rational numbers (percents) (M1.2.3)</p> <p>[8] N-7 the use of inverse operations (addition/subtraction or multiplication/division) (M1.2.3)</p>
M1.3.2 Model counting in a different base system.	2.1 Model counting in a different base system	
M1.3.3 Translate between equivalent representations of the same number. Select a representation that is appropriate for the situation.	3.1 Translate describe and model equivalent forms of rational numbers	
M1.3.4 Describe and model the relationship of fractions to decimals, percents, ratios, and proportions.	4.1 Describe and model the relationship of fractions, decimals, ratios, percents and proportions	
M1.3.5 Use, explain, and define the rules of divisibility, prime and composite numbers, multiples, and order of operations.	5.1 Explain and define concepts of number theory (primes, composites, multiples, factors, greatest common factor and least common multiple) and the order of operations	
M1.3.6 Use commutative, identify, associative, and distributive properties with variables.	6.1 Use the commutative, associative, and distributive properties with variables and real numbers	

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		<p>[using models, explanations, number lines, or real-life situations L]</p> <p><u>Numeration: Number Theory</u> The student demonstrates conceptual understanding of number theory by</p> <p>[8] N-8 applying the rules for order of operations to rational numbers (M1.3.5)</p> <p>[8] N-9 identifying or writing the prime factorization of a number using exponents (M1.3.5)</p> <p>[8] N-10 [using distributive property <u>with real numbers L</u>] (M1.3.6)</p>