

K-12 MAJOR STRAND GLE's ACROSS GRADE LEVELS

Scope and Sequence

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Number and Operations

ESTIMATION

K	1	2	3	4	5	6	7	8	ALG	GEO	Adv. ALG
Estimate and justify number of objects in a collection (DLE)	Estimate and justify size (DLE)	Estimate sums and differences of whole numbers	Estimate and justify sums and differences of whole numbers	Estimate and justify the products of whole numbers	Estimate and justify products and quotients of whole numbers and sums and differences of decimals and fractions	Add and subtract positive rationals	Be able to compute / estimate/ justify using operations on rational numbers, including integers Estimate square roots to the nearest whole number.	Estimate with rational numbers	Judge reasonableness of numerical computations	Judge reasonableness of numerical computations for length, area, volume	Judge reasonableness of numerical computations for Complex numbers

(NO Continued)

COMPARING NUMBERS

K	1	2	3	4	5	6	7	8	ALG	GEO	Adv. ALG
<p>Rote counting (100) recognition of numbers to 31, connecting number words to quantities</p> <p>Recognize $\frac{1}{2}$ of a shape</p> <p>Write numbers 0 – 10. (DLE)</p> <p>Recognize $\frac{1}{2}$ of a shape</p>	<p>Read, write, and compare whole numbers less than 100 including use of a number line.</p> <p>Recognize $\frac{1}{2}$ and $\frac{1}{4}$ of a shape</p>	<p>Read, write, and compare numbers less than 1000 – including use of a number line.</p> <p>Recognize fractional parts of a shape</p>	<p>Read, write, and compare whole numbers up to 10,000 and classify numbers by characteristics odd/even.</p> <p>Represent fractional parts of a whole using $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ (including use of a number line)</p>	<p>Read, write, and compare whole numbers less than 100,000 and classify and compare numbers as even, odd, multiples, and factors</p> <p>Use models/ benchmarks (0, $\frac{1}{2}$, 1) and equivalent forms to judge the size of fractions (including use of a number line)</p>	<p>Read, write, and compare whole numbers less than 1,000,000 and classify and compare numbers by characteristics (odd and even factors and multiples prime and composite, and square numbers</p> <p>Recognize & represent equivalent forms of commonly used fractions and decimals (including use of a number line)</p>	<p>Order and compare rational numbers</p> <p>Create fact families</p>	<p>Order and compare rational numbers including integers (number line)</p> <p>Record equivalent forms of fractions, decimals, and percents</p> <p>Create fact families</p>	<p>Order and compare rational numbers on a number line.</p> <p>Recognize equivalent representations of fractions, decimals, percents, exponents, and scientific notation.</p>	<p>Order and compare rational and irrational numbers with a variety of representations (finding approximate locations on a number line)--square roots, rational numbers</p>	<p>Order and compare rational and irrational numbers --square roots, rational numbers, and PI</p>	<p>Order and compare rational and irrational numbers with a variety of representations</p>

COMPUTATION

K	1	2	3	4	5	6	7	8	ALG	GEO	Adv. ALG
Use concrete objects to compose and decompose numbers up to ten	Compose and decompose whole numbers to 20 Skip count 2's, 5's, & 10's Represent/model a given situation involving addition and subtraction of whole numbers Describe and represent mental and other strategies used to add and subtract Strategies to	Skip count by multiples less than ten. Compose and decompose numbers using place value and known facts Describe or notate mental strategies used for problem solving using addition and subtraction (including 2-digit numbers) Demonstrate quick recall with basic numbers related to adding and	Apply and describe strategies to compute multi digit add/sub. Recognize equivalent representations for the same number and generate them by decomposing and composing numbers including expanded notation. Describe effects and relationships between operations. Use models to represent	Represent and recognize multiplication & related division using various models, including equal intervals on the number line, equal size groups (e.g. sets and arrays), and distributive property Recognize equivalent representation for the same number and generate them by decomposing and composing numbers including expanded notation.	Represent and recognize division using various models including quotative and partitive Describe the effects of add/sub of fractions and decimals Apply properties of operations (commutative, associative, distributive) Describe and represent the mental strategy used to compute division and multiplication problems	Solve problems using ratios and rates Apply properties of operations including order of operations Add/sub mult/divide rational numbers including fractions, decimals, and mixed numbers.	Compose and decompose numbers including exponential notation Identify and apply commutative, associative, and distributive, properties. Describe effects and apply all operations on rational numbers including integers Identify and apply scale factor changes to perimeter.	Use fractions, decimals, and percents to solve problems Use order of operations Compute with rational numbers Solve problems involving proportions	Describe the effect of operations (including x./,exponents, roots) Solving problems involving proportions	Describe the effects of scale changes to length, area, and volume Solve geometric problems with proportions	Apply operations to matrices Solve problems with proportions

	develop fluency with addition and subtraction up to 20	<p>subtracting up to 20</p> <p>Add/sub 2-digit numbers with regrouping</p> <p>Represent a given situation involving multi-digit whole number addition or subtraction</p>	<p>mathematical relations (+-x /)</p> <p>Use mental and other strategies to develop fluency with basic number relationships (9x9) including division</p> <p>Skip count by multiples of numbers less than 10 (DLE)</p>	<p>Describe effects of multiplying and dividing whole numbers as well as the relationship between the two operations.</p> <p>Represent a mental strategy used to compute a given multiplication problem (2-digit by 2-digit)</p> <p>Demonstrate fluency with basic number relationships (12 X12) of multiplication and related division facts</p> <p>Apply and describe strategies used to compute 2-digit multiplication and related division</p>	<p>Compose and decompose numbers</p> <p>Apply and describe the strategy used to compute division up to a 3-digit number by a 2-digit number. and addition and subtraction of fractions (unlike denominators) and decimals</p> <p>Demonstrate fluency with basic number relationships 12 x 12 of multiplication and related division facts</p>						
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				Add and subtract fractions with like denominators							
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