

Math GLE's Version 2.0 - Grade 6

Strand 1: Number and Operations

1. Understanding numbers, ways of representing numbers, relationships among numbers and number systems
 - A. Read, write and compare numbers: MA 5 1.10 DOK 1
 - Apply and understand whole numbers to millions, fractions and decimals to the thousandths (including location on the number line)

 - B. Represent and use rational numbers: MA 5 1.10 DOK 2
 - Recognize and generate equivalent forms of fractions, decimals and benchmark percents

 - C. Compose and Decompose Numbers: MA 5 1.6 DOK 2
 - Recognize equivalent representations for the same number and generate them by decomposing and composing numbers

 - D. Classify and describe numeric relationships: none

2. Understand meanings of operations and how they relate to one another
 - A. Represent operations: None
 - B. Describe effects of operations: MA 1 1.10 DOK 2
 - Describe the effects of multiplication and division on fractions and decimals

 - C. Apply properties of operations: MA 1 1.10 DOK 2
 - Apply properties of operations (including order of operations) to positive rational numbers

D. Apply operations on real and complex numbers: MA 5 1.6 DOK 1

- Identify square and cubic numbers and determine whole number roots and cubes

3. Compute fluently and make reasonable estimates

A. Describe or represent mental strategies: None

B. Develop and demonstrate fluency: None

C. Compute problems: MA 1 3.1 DOK 1

- Multiply and divide positive rational numbers

D. Estimate and justify solutions: MA 1 3.2 DOK 3

- Estimate and justify the results of addition and subtraction of positive rational numbers

E. Use proportional reasoning: MA 1 3.2 DOK 2

- Solve problems using ratios and rates

Strand 2: Algebraic Relationships

1. Understand patterns, relations and functions

A. Recognize and extend patterns: None

B. Create and analyze patterns: MA 4 1.6 DOK 2

- Represent and describe patterns with tables, graphs, pictures, symbolic rules or words

C. Classify objects and representations: MA 4 1.6 DOK 2

- Compare various forms of representations to identify patterns

D. Identify and compare functions: MA 4 1.6 DOK 1

- Identify functions as linear or nonlinear from tables or graphs

E. Describe the effects of parameter changes: None

2. Represent and analyze mathematical situations and structures using algebraic symbols
 - A. Represent mathematical situations: MA 4 3.3 DOK 2
 - Use symbolic algebra to represent unknown quantities in expressions or equations and solve one-step equations
 - B. Describe and use mathematical manipulation: MA 4 3.2 DOK 2
 - Use the commutative, distributive and associative properties to generate equivalent forms for simple algebraic expressions
 - C. Utilize equivalent forms: None
 - D. Utilize systems: None
3. Use mathematical models to represent and understand quantitative relationships
 - A. Use mathematical models: MA 4 3.6 DOK 2
 - Model and solve problems, using multiple representations such as tables, expressions, and one- step equations
4. Analyze change in various contexts.
 - A. Analyze change: MA 4 1.6 DOK 3
 - Construct and analyze representations to compare situations with constant or varying rates of change

Strand 3: Geometric and Spatial Relationships

1. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.
 - A. Describe and use geometric relationships: MA 2 1.10 DOK 1
 - Identify similar and congruent shapes
 - B. Apply geometric relationships: none
 - C. Compose and decompose shapes: None
2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.
 - A. Use coordinate systems: MA 2 1.10 DOK 2
 - Use coordinate systems to construct geometric shapes
3. Apply transformations and use symmetry to analyze mathematical situations
 - A. Use transformations on objects: MA 2 3.3 DOK 3
 - Describe the transformation from a given pre-image using the terms reflection/flips, rotation/turn and translation/slide
 - B. Use transformations on functions: None
 - C. Use symmetry: MA 2 1.6 DOK 2
 - Create polygons and designs with rotational symmetry
4. Use visualizations, spatial reasoning and geometric modeling to solve problems
 - A. Recognize and draw three dimensional representations: MA 2 3.3 DOK 2
 - Use spatial visualization to identify isometric representations of mat plans
 - B. Draw and use visual models: MA 2 3.3 DOK 3
 - Draw or use visual models to represent and solve problems

Strand 4: Measurement

1. Understand measurable attributes of objects and the units, systems and processes of measurement

A. Determine unit of measurement: MA 2 3.1 DOK 3

- Identify and justify the unit of measure for area and volume (customary and metric)

B. Identify equivalent measures: None

C. Tell and use units of time: MA 5 3.1 DOK 2

- Solve problems involving elapsed time (hours and minutes)

D. Count and compute money: None

2. Apply appropriate techniques, tools and formulas to determine measurements

A. Use standard or non standard measurement: none

B. Use angle measurement: MA 2 DOK 1

- Identify and justify an angle as acute, obtuse, straight, or right

C. Apply geometric measurements: MA 2 1.10 DOK 2

- solve problems involving the area or perimeter of polygons

D. Analyze precision: None

E. Use relationships within a measurement system: MA 2 1.6 DOK 1

- Convert from one unit to another within a system of measurement (mass and weight)

Strand 5: Data and Probability

1. Formulate questions that can be addresses with data and collect, organize and display relevant data to answer them.

A. Formulate questions: MA 3 1.2 DOK 3

- Formulate questions, design studies and collect data about a characteristic

B. Classify and organize data: None

C. Represent and interpret data: MA 3 1.8 DOK 2

- Interpret circle graphs; create and interpret stem-and-leaf plots

2. Select and use appropriate statistical methods to analyze data

A. Describe and analyze data: MA 3 1.10 DOK 2

- Find the range and measures of center, including median, mode and mean

B. Compare data representations: none

C. Represent data algebraically: none

3. Develop and evaluate inferences and predictions that are based on data.

A. Develop and evaluate inferences: MA 3 3.5 DOK 3

- Use observations about differences between 2 samples to conjectures about the populations from which the samples were taken

B. Analyze basic statistical techniques: None

4. Understand and apply basic concepts of probability

A. Apply basic concepts of probability: MA 3 1.10, 3.2 DOK 2

- Use a model (diagrams, list, sample space, or area model) to illustrate the possible outcomes of an event

B. Use and describe compound events: None