Math GLE's - Grade 2

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
   - *** Read, write and compare whole numbers less than 1000**

   B. **Represent and use rational numbers** MA 5, 1.10 DOK 1
   - Recognize *** unit fractions of a shape**

   C. **Compose and Decompose Numbers MA** 1, 1.6 DOK 2
   - Compose or decompose numbers using a variety of strategies, such as using known facts, tens ***place value** or landmark numbers to solve problems

   D. **Classify and describe numeric relationships MA** 5 1.6 DOK 1
   - Skip count by *** multiples of numbers less than 10**

2. Understand meanings of operations and how they relate to one another

   A. **Represent operations MA** 1 1.10 DOK 2
   - Represent a given situation involving ***multi-digit whole number** addition or subtraction

   B. **Describe effects of operations:** None

   C. **Apply properties of operations**: None

   D. **Apply operations on real and complex numbers**: None

3. Compute fluently and make reasonable estimates

   A. **Describe or represent mental strategies** MA 1 3.2 DOK 2
   - Describe or notate the mental strategy used to compute addition or subtraction of whole numbers, including *** 2-**digit numbers

   B. **Develop and demonstrate fluency** MA 1 1.6 DOK 1
   - Demonstrate fluency ***including quick recall** with basic number relationships of addition and subtraction for sums up to 20

C. **Compute problems** MA 1 3.2 DOK 2

- Apply and describe the strategy used to compute **<u>*2-digit</u>** addition or subtraction problems **<u>with regrouping</u>**

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

<u>* estimate sums and differences of whole numbers</u>

E. **Use proportional reasoning**: None

<u>Algebraic Relationships</u>

1. Understand patterns, relations and functions

A. **Recognize and extend patterns** MA 4 1.6 DOK 2

- Describe and extend simple numeric patterns and change from one representation to another

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

- Describe how simple <u>growing patterns</u> are generated

C. Classify objects and representations

- **<u>*none</u>**

D. **Identify and compare functions**: None

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 1.10 DOK 2

- **using addition or subtraction,** represent a mathematical situation as an <u>expression</u> or number sentence

B. **Describe and use mathematical manipulation** MA 4 3.2 DOK 2

- **<u>*Solve problems with whole numbers using the commutative and associative properties of addition</u>**

C. **Utilize equivalent forms**: None

D. **Utilize systems**: None

3. Use mathematical models to represent and understand quantitative relationships
   A. Use mathematical models MA 1 1.6 DOK 2
   - *Model* situations that involve addition and subtraction of whole numbers, using pictures, objects or symbols

4. Analyze change in various contexts.
   A. Analyze change MA 1.6 DOK 2
   - Describe qualitative change, such as students growing taller

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 2
   - Describe attributes and parts of 2- and 3-dimensional shapes (circle, triangle, trapezoid, rectangle, rhombus, sphere, rectangular prism, cylinder, pyramid)

   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 3.1 DOK 1
   - Identify locations with simple relationships on a map (coordinate system)

3. Apply transformations and use symmetry to analyze mathematical situations
   A. **Use transformations on objects** MA 2 1.6 DOK 2
   - Use manipulatives to model *** slides and turns**

   B. **Use transformations on functions**: None

   C. **Use symmetry** MA 2 1.10 DOK 2
   - *** create shapes that have symmetry**

Use visualizations, spatial reasoning and geometric modeling to solve problems

A. Recognize and draw three dimensional representations

- **<u>*none</u>**

B. **Draw and use visual models**: None

<u>Measurement</u>

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

Determine unit of measurement MA 2 3.1 DOK 2

- Select an appropriate unit and tool for the <u>attribute</u> being measured **<u>* (size, temperature, time, weight) and to the nearest inch, centimeter, degree, hour and pound</u>**

B. **Identify equivalent measures**: None

C. **Tell and use units of time MA** 2 1.10

- Tell time to the nearest **<u>* 1/4 (quarter) hour</u>**

D. **Count and compute money** MA 1 1.10 DOK 2

- **<u>* make change from a dollar</u>**

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

A. Use standard or non standard measurement MA 2 1.6 DOK 2

- **<u>* Use standard units of measure (cm and inch) and the inverse relationships between the size and the number of units</u>**

B. **Use angle measurement**: None

C. **Apply geometric measurements**: None

D. **Analyze precision**: None

E. **Use relationships within a measurement system**: None

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
      - pose questions and gather data about themselves and their surroundings

   B. **Classify and organize data** MA 3 1.8 DOK 3
      - sort and classify items according to their *attributes* and organize data about the items

   C. **Represent and interpret data** MA 3 1.8 DOK 2
      - represent *** one-to-many correspondence** data using pictures and bar graphs

2. Select and use appropriate statistical methods to analyze data

   A. **Describe and analyze data**: None

   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:** None

   B. **Analyze basic statistical techniques:** None

4. Understand and apply basic concepts of probability

   A. **Apply basic concepts of probability**: None

   B. **Use and describe compound events:** None