Math GLE'S - Grade 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

   - * read, write, and compare whole numbers less than 100

   B. **Represent and use rational numbers**: MA 5, 1.10 DOK 1

   * recognize $\frac{1}{2}$ and $\frac{1}{4}$ of a shape

   C. **Compose and Decompose Numbers** MA 1 1.6 DOK 2

   - *Compose or decompose whole numbers up to 20 using multiple strategies such as known facts, doubles and close to doubles, tens, and ones place value

   D. **Classify and describe numeric relationships**: MA 5 1.6 DOK 1

   * skip count by 2's, 5's and 10's

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

   A. **Represent operations** MA 1 1.10 DOK 2

   - *Represent/ model a given situation involving addition and subtraction of whole numbers using pictures, objects, or symbols

   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 represent the mental strategy used to compute addition and subtraction problems

   B. **Develop and demonstrate fluency** MA 1, 1.6 DOK 1

   - * use strategies to develop fluency 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 solve addition or subtraction problems

D. **Estimate and justify solutions**: None

E. **Use proportional reasoning**: None

Algebraic Relationships

1. Understand patterns, relations and functions

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

- Extend patterns of sound, shape, motion or a simple numeric pattern

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

- Describe how simple repeating patterns are generated

C. Classify objects and representations

- * none

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 expression or number sentence

B. **Describe and use mathematical manipulation**: MA 4, 1.10 DOK 2

* apply the commutative and associative properties of addition to whole numbers

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 the addition of whole numbers, using pictures, objects or symbols
4. Analyze change in various contexts.
   A. **Analyze change:** None

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
      - *** identify, name, and describe 2- and 3-dimensional shapes using physical models (circle, rectangle, trapezoid, triangle, rhombus, sphere, rectangular prism, cylinder, pyramid)**

   B. **Apply geometric relationships**: None

   C. **Compose and decompose shapes**: MA 2, 1.6 DOK 2
      * use models to compose and decompose 2- dimensional shapes

2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.
   A. **Use coordinate systems** MA 2, 1.10 DOK 2
      - describe, name and interpret positions is space (left, right)

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 flips

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

   C. **Use symmetry**: MA 2, 1.10 DOK 1
      * recognize shapes that have symmetry

4. Use visualizations, spatial reasoning and geometric modeling to solve problems
   A. Recognize and draw three dimensional representations
      - *none

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

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 2

- Select the appropriate tool for the attribute being measured
  *(**size, temperature, time, and weight**)

B. **Identify equivalent measures**: None

C. **Tell and use units of time** MA 2, 1.10 DOK 1

- Tell time to the * **nearest half-hour**

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

- Count money to * **a dollar, including half dollars**

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

A. **Use standard or non standard measurement** MA 2 1.10, DOK 1

- Use repetition of a single unit to measure something larger than the unit (e.g., measuring the length of the room with a single meter stick, length of a book with paper clips)

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 2, 1.8 DOK 3

- sort and classify items according to their *attributes*

C. **Represent and interpret data** MA 3, 1.8 DOK 2

- represent ***one- to – one 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