Kindergarten Math

Overview: The objective of the Kindergarten Math Program is to embed Math concepts through out the school day with meaningful and relevant experiences. This program should be a developmentally appropriate, multisensory approach that uses manipulatives and hands-on activities to meet the NYS Math Standards. Problem solving will be integrated through out each of the following units:

> Numbers and Numeration
> Operations with Whole Numbers and Integers
> Fractions and Decimals
> Probability and Statistics
> Geometry and Measurement
> Problem Solving

1. **Numbers and Numeration**
   *When teaching this unit the numerals will be introduced in this order:
   0-5
   6-10
   11-19
   20-31
   a. One to one correspondence
   b. Identify, make and count groups (sets)
   c. Recognize and match numerals to groups of objects
   d. Written formation of numerals 0-12
   e. Ordinal numbers (First, second, etc.)
   f. Compare groups of objects (more, less, same…)
   g. Rote counting by 1's and 10's to 100
   h. Begin to recognize number sequences using terms such as "before, after, between"
   (I.e. _____, 3, 4, _____)

2. **Operations with Whole Numbers and Integers**
   a. Use manipulatives to join groups of objects to 10
   b. Use manipulatives to separate groups of objects from 10
   c. Draw pictures and use manipulatives to represent problems
   d. Introduce symbols: +, -, =
   e. Write an addition/subtraction sentence and match to manipulatives

3. **Fractions and Decimals**

a. Part vs. Whole – Half equals a "fair share"
b. Sharing of sets such as cookies or crayons as objects

4. **Probability and Statistics**
   a. Classification/Sorting
      1. Same and Different
      2. Sort by Color, shape and size
      3. Identify additional attributes of objects (i.e. Number of holes, smooth, etc.)
      4. Record data using graphs, diagrams, tables
      5. Interpret graphs, tables and diagrams
   b. Patterning
      1. Identify patterns with 2 or 3 elements
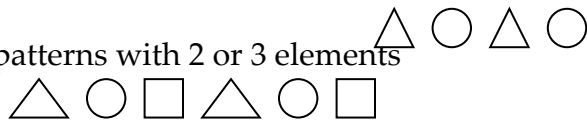
      2. Copy patterns with 2 or 3 elements
      3. Extend patterns with 2 or 3 elements
      4. Create own pattern using 2 or 3 elements
      5. Describe identical patterns- Show them in different modes

5. **Geometry and Measurement**
   a. Geometry
      1. Identify then name the 6 shapes: circle, rectangle, square, triangle, rectangle,
         Oval, diamond and identify their attributes

   b. Measurement
      1. Compare objects by using linear terms (i.e. taller, wider, longer, shortest…)
      2. Estimate then measure objects using nonstandard units (i.e. cubes, paper clips)
      3. Compare capacities of different containers with rice, sand, water, etc.
      4. Estimate then measure the capacity of a container using nonstandard units (candy, cubes, balls, etc.)
      5. Compare weights of different objects using nonstandard units (heavier, Lighter, more, less, etc.)
      6. Estimate then measure weights of objects using nonstandard units
      7. Introduce standard English units of measurement i.e. inches

   c. Time and Money

1. Compare duration of time (longer, less time)
2. Tell time to the hour using analog and digital clocks
3. Write time
4. Calendar – today, tomorrow, yesterday; days of week, months, give date
5. Sequence events
6. Identify and name penny, nickel, dime
7. Value of penny, nickel, dime
8. Identify which item costs more/less

6. Problem Solving
  a. Positions
      1. Top, middle, bottom
      2. Above (over), below (under)
      3. Inside, outside
      4. Before, after, between (in the middle)
      5. Left, right
  b. Mathematical Reasoning
      1. Develop number concepts through sorting and classifying
      2. Integrate comparison of sets and counting with other activities (real life Situations)
      3. Relate counting to repeated patterns
      4. Draw pictures and use manipulatives to represent problems