Math Interventions
Staff Development

Monday, October 8, 2018

Presenters: Marisela Magadan and Laura Garcia

Agenda

1. Understanding Numbers through number sense

2. Using Number Sense activities

   - Ten Frames
   - Rekenrek
   - Subitizing

3. Lunch Break 11:30 – 1:00

4. 2nd grade TEKS and interventions

5. Examples of interventions

6. Teachers will create a chart showing activities they implement in class.
   .
   .

7. Share information

8. Dismissal

Math Interventions

Numerical Representations And Relationships

Readiness Standards	
2.2(B)*	use standard, word, and expanded forms to represent numbers up to 1,200
2.2(D)*	use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and symbols (>, <, or =)
2.3(B)*	explain that the more fractional parts used to make a whole, the smaller the part; and the fewer the fractional parts, the larger the part

Supporting Standards

2.2(A)*	use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones
2.2(C)	generate a number that is greater than or less than a given whole number up to 1,200
2.2(E)*	locate the position of a given whole number on an open number line
2.2(F)*	name the whole number that corresponds to a specific point on a number line
2.3(A)	partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words
2.3(C)*	use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole
2.3(D)	identify examples and non-examples of halves, fourths, and eighths

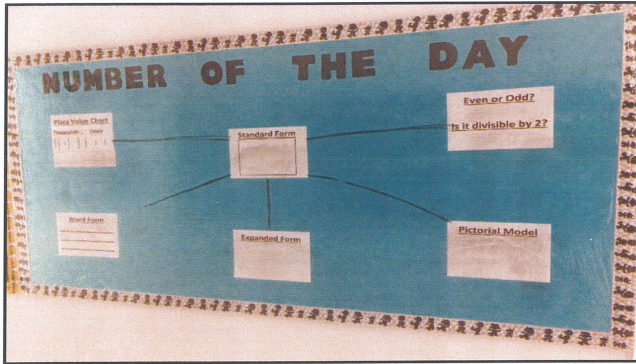## Readiness Standards

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Examples
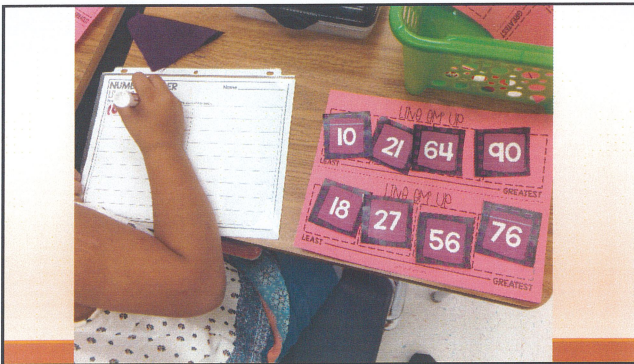
Computations and Algebraic Relationships

Readiness Standards

2.4(C)*   solve one-step and multi-step word problems involving addition and subtraction within 1,000 using a variety of strategies based on place value, including algorithms

2.4(D)*   generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000

Supporting Standards

2.4(A)   recall basic facts to add and subtract within 20 with automaticity

2.4(B)*   add up to four two-digit numbers and subtract two-digit numbers using mental strategies and algorithms based on knowledge of place value and properties of operations

2.6(A)*   model, create, and describe contextual multiplication situations in which equivalent sets of concrete objects are joined

2.6(B)*   model, create, and describe contextual division situations in which a set of concrete objects is separated into equivalent sets

2.7(A)*   determine whether a number up to 40 is even or odd using pairing of objects to represent the number

2.7(B)   use an understanding of place value to determine the number that is 10 or 100 more or less than a given number up to 1,200

2.7(C)   represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem
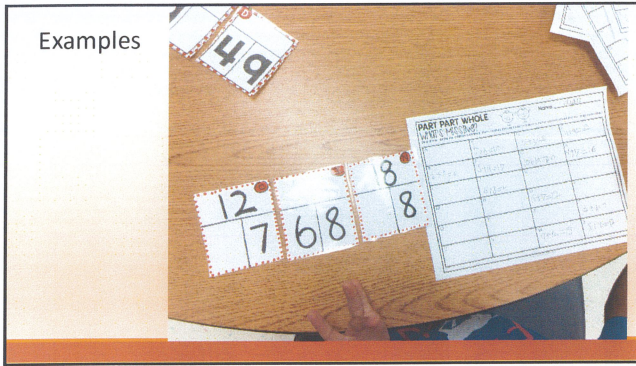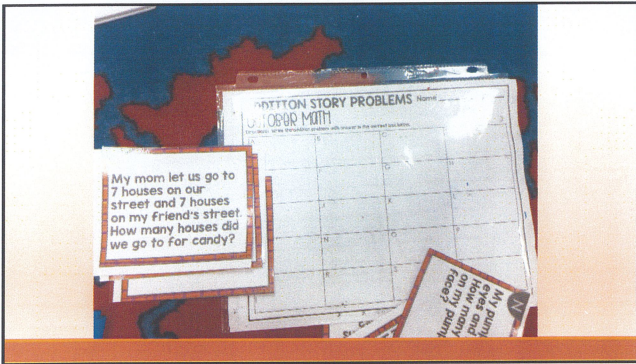
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Examples

Geometry and Measurement

Readiness Standards

2.8(B)* classify and sort three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes as special rectangular prisms), and triangular prisms, based on attributes using formal geometric language

2.8(C)* classify and sort polygons with 12 or fewer sides according to attributes, including identifying the number of sides and number of vertices

2.9(E)* determine a solution to a problem involving length, including estimating lengths

2.9(G)* read and write time to the nearest one-minute increment using analog and digital clocks and distinguish between a.m. and p.m.

Supporting Standards

2.8(A) create two-dimensional shapes based on given attributes, including number of sides and vertices

2.8(D) compose two-dimensional shapes and three-dimensional solids with given properties or attributes

2.8(E) decompose two-dimensional shapes such as cutting out a square from a rectangle, dividing a shape in half, or partitioning a rectangle into identical triangles and identify the resulting geometric parts

2.9(A)* find the length of objects using concrete models for standard units of length

2.9(B) describe the inverse relationship between the size of the unit and the number of units needed to equal the length of an object

2.9(C)* represent whole numbers as distances from any given location on a number line

2.9(D) determine the length of an object to the nearest marked unit using rulers, yardsticks, meter sticks, or measuring tapes

2.9(F)* use concrete models of square units to find the area of a rectangle by covering it with no gaps or overlaps, counting to find the total number of square units, and describing the measurement using a number and the unit

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Data Analysis
And
Personal Financial
Literacy

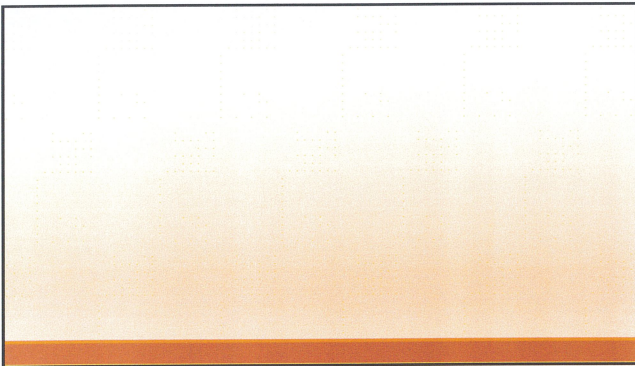| **Readiness Standards**	
2.5(A)	determine the value of a collection of coins up to one dollar
2.10(C)*	write and solve one-step word problems involving addition or subtraction using data represented within pictographs and bar graphs with intervals of one

Supporting Standards

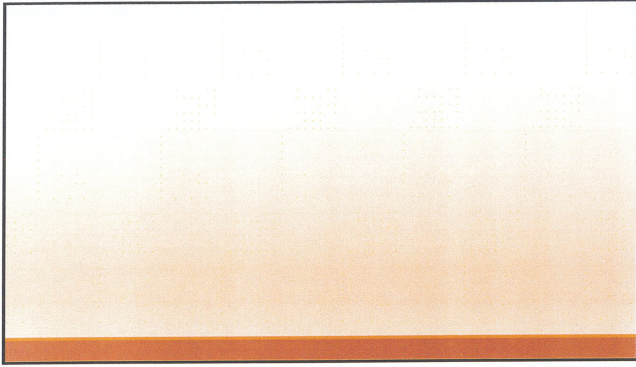|	
2.5(B)	use the cent symbol, dollar sign, and the decimal point to name the value of a collection of coins
2.10(A)	explain that the length of a bar in a bar graph or the number of pictures in a pictograph represents the number of data points for a given category
2.10(B)*	organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more
2.10(D)*	draw conclusions and make predictions from information in a graph
2.11(A)	calculate how money saved can accumulate into a larger amount over time
2.11(B)	explain that saving is an alternative to spending
2.11(C)	distinguish between a deposit and a withdrawal
2.11(D)	identify examples of borrowing and distinguish between responsible and irresponsible borrowing
2.11(E)	identify examples of lending and use concepts of benefits and costs to evaluate lending decisions
2.11(F)	differentiate between producers and consumers and calculate the cost to produce a simple item

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Understanding Numbers Through Number Sense

What is Number Sense?

A person's ability to use and understand numbers:

· knowing their relative values,
· how to use them to make judgments,
· how to use them in flexible ways when adding, subtracting, multiplying or dividing
· how to develop useful strategies when counting, measuring or estimating.

- Students who struggle in math often lack number sense.
- Without number sense, it is a struggle to find relationships among numbers or equations.
- It becomes difficult to figure out measurement, geometry and data problems.
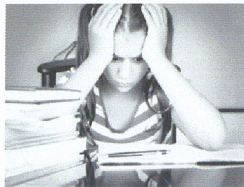
- With number sense, children become more apt to attempt problems and make sense of mathematics.
- As students build number sense, mathematics takes greater meaning.
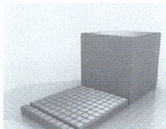- It becomes more about reaching understanding than following rigid sets of rules.
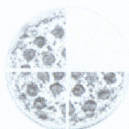

Number sense will facilitate with problem solving, reasoning, and discussing math ideas.
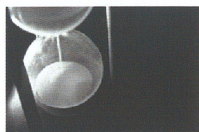
Examples
of using
number sense:

A sense of what numbers
mean.

Someone with a sense of what numbers mean has
a visual model and concrete understanding of
quantities.

Real world meaning of
quantity and numbers.

Students will make comparisons, interpret
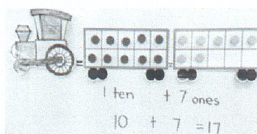data, estimate, and answer the question.

Flexibility, automaticity, and fluidity with numbers.

Students can solve problems quickly and efficiently because they use the five- and ten- structures of numbers.

Ability to perform mental math.

Students are able to solve in their heads by decomposing or breaking apart numbers into tens and ones.

Flexibility with problems.

Students are able to show different ways to solve problems.

Ability to determine reasonableness of an answer.

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