

## Tips for Helping at Home

- Take time to learn some of the math games we are playing with number cards, dot cards, coins, and counters.
- Look for addition and subtraction situations at home (numbers under 25 are about right for many 1st graders).
- Your child may work out the answers by using counters such as pennies, buttons or paper clips. Or, your child might draw pictures, write down steps, or work mentally.

## How to help when your student gets stuck. . .

- What do you need to find out? Student should be specific.
- What information do you have?
- What strategies are you going to use?
- Does that make sense?
- How do you know?
- How did you get answer?
- Does your answer seem reasonable?
- What else is there to do?



## Web Resources

You will find web resources at:

<http://www.dreamsbeginhere.org/static/aboutdcps/departments/acadprog/mathematics/index.asp>

<http://mathforum.org/students>

<http://www.rainforestmaths.com/>

## Mathematical Emphasis

### Investigation 1– Visualizing Numbers

- Counting quantities up to about 20
- Developing strategies for counting and comparing the number of dots in dot patterns
- Developing strategies for organizing collections of objects so that they are easy to count and combine
- Using numerals to record how many, for quantities up to about 20

### Investigation 2—Building Numbers in Different Ways

- Finding combinations of numbers up to about 15
- Finding the total of two quantities up to 10
- Finding the larger of two quantities up to about 20

### Investigation 3—Counting

- Reading, writing, and sequencing numbers to 100
- Counting quantities up to about 40
- Finding the total of two quantities, one that's just a few and another up to about 40

### Investigation 4—Addition and Subtraction

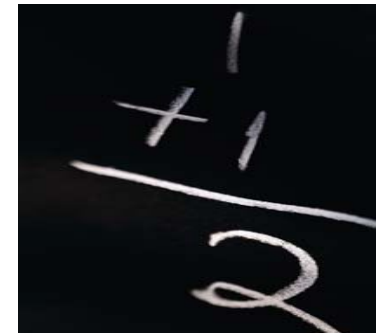
- Visualizing combining and separating problem situations
- Developing strategies for solving combining and separating problems
- Recording strategies for solving combining and separating problems, using pictures, numbers, words, and equations



## Duval County Public Schools



## Investigations in Number, Data, and Space



### Building Number Sense Grade 1

### The Number System

#### Unit Goals:

- Students develop "good" number sense
- Students gain knowledge about how numbers are structured in our number system
- Students build a large repertoire of known number relationships
- Students model what it means to add and subtract

#### Proposed Time Frame:

7 weeks

## Vocabulary

- **Combinations**—numbers that work together to make new numbers

- **Equation**—a number sentence written with an equal sign

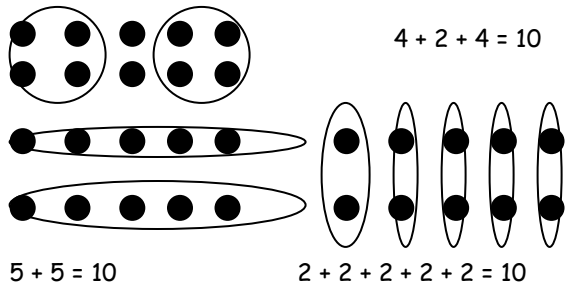
$$2 + 2 = 4$$

Can be read as "two plus two is the same as 4."

- **Solution**—the final answer

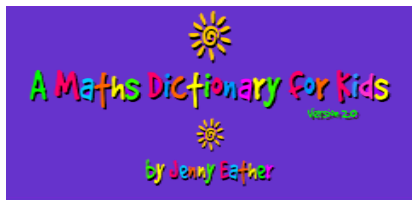
- **Representation**—using pictures, numbers, and/or words to clearly show data or how a problem is solved

- **Visualizing**—using pictures to see how numbers can break into parts in different ways.



## Glossary

<http://www.amathsdictionaryforkids.com/>



Kliman, M. Investigations in Number, Data, and Space: Building Number Sense. Dale Seymour Publications, 1998.

## Strategies for Learning Number Combinations

In order to develop good computation strategies, students eventually need to become fluent with the addition combinations (number combinations with two addends, also called addition pairs) from  $0 + 0$  to  $10 + 10$ . These combinations are part of the repertoire of number knowledge that contributes to the rich interconnections among number that we call number sense.

Students learn these combinations best by using strategies, not simply by rote memorization. Relying on memory alone is not sufficient, as many of us know from our own schooling. If you forget, as we do at times, your are left with nothing. If, on the other hand, your learning is based on your understanding of numbers and their relationships you have a way to rethink and restructure your knowledge when you don't remember something you thought you "knew."

Knowing the combinations should be judged by fluency in use, not necessarily by instantaneous recall. Through repeated use and familiarity, students will eventually come to know most of the addition combinations immediately, and a few by using some quick and comfortable numerical reasoning strategy. For example: instead of seeing  $8 + 5$  a student may see the five broken apart into a 2 and 3. This would then allow the student to "see" the 2 combined with the 8 to make 10 and then the 10 and 3 combine to make 13.

Board C

12	11	10	9	8
7	7	6	5	4
3	2	2	3	4
5	6	6	7	7
8	9	10	11	12

## Game

### Five in a Row

**Materials:** Game board, counters (about 20), two number cubes (or Number Cards 1–6)

**Players:** 2

**Object:** Cover five squares in a row horizontally, vertically, or diagonally

**How to Play:**

1. Roll the number cubes (or turn up two Number Cards)
2. Find the sum of the rolls. Look on the board for a square that matches the sum. Place a counter on that square.
3. Continue this way until you have covered five squares in a row. If no move can be made (if the sum is covered), roll again.

**Variations:**

- A. You and your partner have your own boards. The game is over when both of you have five in a row.
- B. Play with three people.
- C. Roll three number cubes on each turn. Look at all 3 numbers. Make sums with any two of the numbers rolled.

Board A

2	3	4	5	6
6	7	7	8	9
10	11	12	11	10
9	8	7	7	6
6	5	4	3	2

Board B

2	2	3	3	4
4	5	5	6	6
6	7	7	7	7
8	8	9	9	10
10	11	11	12	12

Copy game boards on a separate sheet of paper