

Math Curriculum
Conversations
3rd – 5th Grades

February, 2014

Process Standards

Standards of Mathematical Practice

Content Standards

Domains:

Counting and Cardinality

Operations and Algebraic Thinking

Numbers and Operations in Base Ten

Numbers and Operations in Fractions

Measurement and Data

Geometry

2 Digit Addition Strategies

Adding by Place Value

Add the tens

$$34 + 21 =$$

Add the ones

$$30 + 20 = 50$$

$$4 + 1 = 5$$

$$50 + 5 = 55$$

Incremental Addition

$$34 + 21 =$$

$$34 + 10 + 10 + 1 = 55$$

44

54

55

Compensation Addition

$$34 + 21 =$$

$$(34 + 1)$$

$$(21 - 1)$$

35

+

20

= 55

Make a friendly number
10, 20, 30, 40, 50,
60, 70, 80, 90, 100...

Multiplication and Division: Strategies to attain fluency:

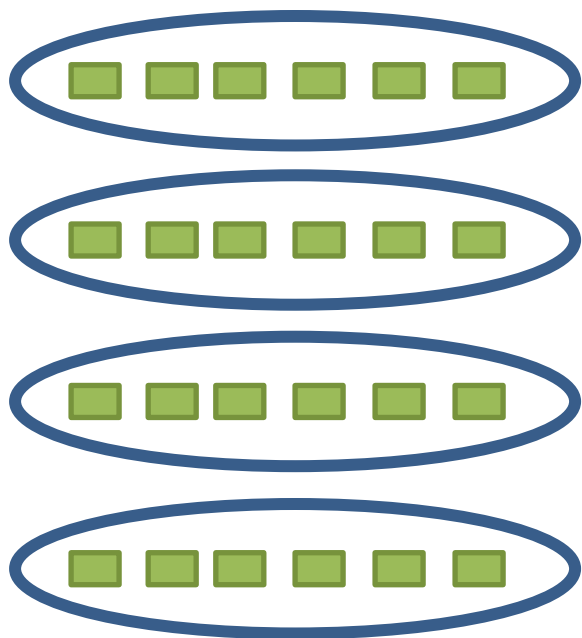
- Multiplication by 0's and 1's
- Doubles facts
- Tens facts relating to place value
- Five facts
- Skip counting
- Square numbers
- Nines
- Decomposing into known facts ($6 \times 7 = 6 \times 6$ and 1 more)
- Turn around facts (Commutative Property)
- Fact Families

Focus on the Operations

- Commutative property If $6 \times 4 = 24$, then $4 \times 6 = 24$ – the order of the numbers does not matter
- Associative property $3 \times 2 \times 5 = 3 \times 5 = 15$ then $15 \times 2 = 30$ OR $5 \times 2 = 10$ then $3 \times 10 = 30$ – the sum/product stays the same when the grouping of addends or factors changes
- Distributive property $8 \times 5 = 40$ and $8 \times 2 = 16$, can find out 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2)$ – can be considered mental math.
- Zero property
- Multiplicative identity property of 1
- Multiplication and division are inverse operations (fact families)

Ways to solve word problems:

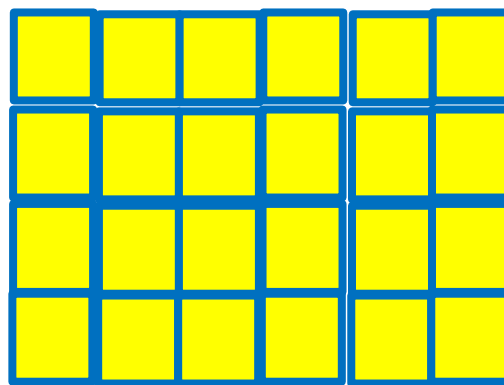
- There are 24 desks in the classroom. If the teacher puts 6 desks in a row, how many rows are there?



Equal Groups

$$6 \times a = 24$$

$$24 \text{ divided by } 6 = a$$



Array

[array game](#)

[Illustrative Mathematics website](#)

[Math Coach's Corner](#)

[Academic Skill Builders](#)

[Youtube Learnzillion fractions on a number line](#)

[K-5 Math Teaching Resources](#)

[Math Solutions by Marilyn Burns](#)

Division:

- There are some students at recess. The teacher divides the class into 4 lines with 6 students in each line. Write a division equation and determine how many students are in the class. a divided by 4 = 6
- The bag has 92 hair clips. Laura and her 3 friends want to share them equally. How many clips will each person receive? (partitive division)
- Max the monkey loves bananas. There are 24 bananas. If he has 4 bananas a day, how many days will the bananas last? (measurement division where number of groups is unknown)

$$\text{Day 1} = 24$$

$$\text{Day 2} = 24 - 4 = 20$$

$$\text{Day 3} = 20 - 4 = 16\dots$$

Division

splitting things into

to the equal groups

Ex. $27 \div 9 = \square$

Strategies To Use

Repeated
Subtraction

$$\begin{array}{r} 27 \\ - 9 \\ \hline 18 \\ - 9 \\ \hline 9 \\ - 9 \\ \hline 0 \end{array}$$

Fact
Family

$$9 \times \square = 27$$

$$\square \times 9 = 27$$

$$27 \div 9 = \square$$

$$27 \div \square = 9$$

Draw a
Picture

