MATH NEWS

Third Grade Newsletter   Fall/Winter

Math Tips for Families   Unit 3: Operations

Overview: The first two parts of this unit focus on multiplication and its additive quality-the relationship between multiplication and repeated addition. In the third part, it focuses on all 4 operations and how they are represented in word problems: multiplication, division, addition & subtraction, and their relationships. There is also be an emphasis on creating equal EXPRESSIONS (It is similar to an equation, but without an equal sign: 2 x 3   6 ÷ 3   957+ 212), not just finding products and missing factors.

We will also focus on solving basic multiplication and division problems efficiently (fast and correct) by using strategies, NOT by memorization.

☑ Foundation Skills (what came before)

Students used addition and subtraction within 100 to solve one and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing (with unknowns in all positions) by using drawings and equations with a symbol to represent the unknown number.

They used addition to find the total number of objects arranged in arrays with up to 5 rows and up to 5 columns and wrote an equation to express the total as a sum of equal addends.

➡ Words to Know

divide: to share a number into equal groups

equal groups: groups that have the same amount in each

factor: one of the numbers being multiplied to find a product 2 x 3 = 6

multiply: adding a number to itself a certain number of times. *2 x 3 is 2 groups of 3 so 3 + 3*

partition: to separate into equal parts

product: the result when two numbers are multiplied   2 x 3 = 6

quotient: the result when two numbers are divided, the missing factor 6 ÷ 3 = 2

❓ Using Questions

- Can you find every day arrays?

- Are we trying to figure out a part of something or the whole amount?
- How can you figure out how many will be in the total when you have a bunch of groups of the same number?
- How can you figure out how many are in each group?
- What is the same about subtraction and division? How about addition and multiplication?
- How are multiplication and division related?

Possible Multiplication Strategies (2 x 6)

Repeated addition or skip counting

2+2+2+2+2+2= 12   or   2 4 6 8 10 (12)

Use With Greater Numbers **7 x 12**

Decomposing factors into smaller factors

(2 + 5) x 12   becomes (2 x 12) + (5 x 12)

Landmark or Friendly numbers

7 x (10 + 2) becomes (7 x 10) + (2 x 10)

Partial products

	10	2	
7	70	14	= 84

Doubling and halving   25 x 6

Double 25 **x** half of 6 is 50 **x** 3

Possible Division Strategies (12 ÷ 2)

Repeated subtraction

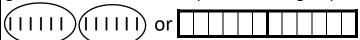 12-2=10, 10-2=8, 8-2=6, 6-2=4, 4-2=2, 2-2=0

Skip Count (count by 2s until you get to 12, then look at how many times you skip counted)

1   2   3   4   5   6
2, 4, 6, 8, 10, 12

Rewrite as a Missing Factor problem

☐ x 2 = 12?

Partition into Fair Shares draw two groups, then split the 12 up one at a time until it's gone; then count how many are in **each** group)

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Key California Content Standards for this Unit

3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

3.OA.5 Apply properties of operations as strategies to multiply and divide. Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)

3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

How You Can Help Activities for Home

- Have your student set out groups of small objects in arrays (equal groups in rows and columns) and write the accompanying multiplication equation.
- Encourage your student to practice multiplication facts for 2s, 3s, 4s, 5s, and 10s until they know them fluently.
- Pose equal sharing problems to your child (If you have 10 stickers and wanted to share them equally with your friend, how many stickers would each of you have?)
- At the grocery store, look for items that are bundled in groups (juice boxes, raisin boxes, etc.) and pose questions about them. (If there are 8 juice boxes in each package, how many packages would you need for 16 kids?)

Routines & Yearlong Topics

- Telling time to the nearest hour, half hour, quarter hour, and minute
- Counting money to get to multiples

Pennies
1- 2-3-4

Twos
2,   4,   6,   8

Nickels
5-10-15-20

Quarters
25,   50,   75,   100

dimes
10-20-30-40

TUSD~ *Supporting community & family understanding*