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Georgia Tech

CSI: MATHEMATICS
Curriculum Support Information

A mathematics resource for parents, teachers, and students

GEORGIA DEPARTMENT OF EDUCATION
Kathy Cox, State Superintendent of Schools

Further investigations:

Break My Eggs. This game can be played with two or more players. Write numbers (0-10) in the holes on the bottom of an empty egg carton. Label one hole BONUS for 10 extra points. Put two manipulatives (marbles, dried beans, etc.) in the egg carton. Close the lid and let your child shake the carton. Using the numbers on which the manipulatives landed, the player multiplies. The answer is the points earned for that turn. If one or both of the manipulatives land on the hole labeled BONUS, add 10 points to the score and shake again. Keep a total of points. Players may play as teams or keep score individually.

A Fair Share. Give your child the responsibility of sharing a box of markers, a bag of candy, or a package of baseball cards equally among two, three, or four family members or friends. Remember that it won't always work out equally and it is okay to have remainders.

Terminology:

Factors: Two or more whole numbers multiplied together to get a given number called the product.
Product: The result of multiplication.
Array: The arrangement of objects in equal rows. Example:

6					
2	● ● ● ● ● ●				
	● ● ● ● ● ●				

Quotient: The result of division.
Dividend: Number being divided; total amount being divided into groups. Ex. 24÷8=3; 24 is the dividend, 8 is the divisor, and 3 is the quotient.
Divisor: Number dividing into the total; may be the number of groups or the number of items in a specific number of groups.
Remainder: Amount left over after dividing a number.
Equal: Having the same value.
Commutative Properties: In addition and multiplication, numbers may be added or multiplied together in any order.
Associative Properties: In addition and multiplication, no matter how the numbers are grouped, the answers will always be the same.
Identity Properties: When a number is added to zero, the result is the number itself, and when a number is multiplied by one, the result is the number itself.

Multiplication and Division of Whole Numbers

Students will: Third Grade 2 of 6
- Use mental math to multiply and divide
- Demonstrate fluency with the multiplication facts up to 10 X 10
- Use estimation to determine reasonableness of products and quotients
- Read, interpret, solve, and compose simple word problems dealing with multiplication and division
- Use inverses to verify accuracy of computation
- Write and solve expressions using symbols in place of numbers
- Represent numbers from tenths to ten-thousands place and accurately read and express in written and oral forms
- Demonstrate understanding of the relative sizes of digits in a number

Classroom Cases:

1. Tyler and Hailey are playing a game called "Chance". They get three points every time they draw a blue card and five points every time they draw a red card. Whoever gets 75 points first wins the game. Tyler has 41 points now, and he has 9 cards. How many cards does he have of each color? Explain your thinking using words, numbers, or pictures.

Case Closed - Evidence:
I thought of multiples of 3 and multiples of 5 and added them together to try to get 41.
3: 3, 6, 9, 12, 15, 18, 21   5: 5, 10, 15, 20, 25, 30, 35, 40, 45

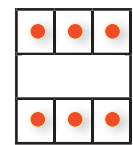Tyler could have two blue cards and seven red cards because 2×3=6, 7×5=35, and 6+35 =41 points, and 2+7= 9 cards.
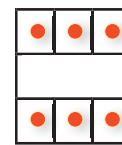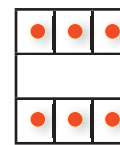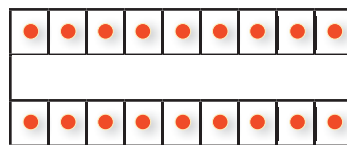
2. There are 24 slices of pizza. How many slices would each person get if there were: Three people? Four people? Six people? Eight people? Twelve people?

Case Closed - Evidence:
Three people would each get 8 slices; four people would each get 6 slices; six people would each get 4 slices; eight people would each get 3 slices; twelve people would each get 2 slices.

3. There are 18 people coming for dinner. How can we set up tables to seat everyone? No one will sit at the head or the foot of the tables. Draw rectangles to represent the tables and mark ● to show where someone will sit.

Case Closed - Evidence:

Clues:
Multiplication is repeated addition. For example, if three book bags contains two books each, then we know that 2 + 2 + 2 = 6 is the same as 3 x 2 = 6. Division is counting things out and then putting them into equal groups. For example, if we have eight books and two book bags, how many books can we put into each bag equally? (8 divided by 2 = 4)

Book'em:
The Hershey's Milk Chocolate Multiplication Book by Jerry Pallotta
The Doorbell Rang by Pat Hutchins
Amanda Bean's Amazing Dream by Cindy Neuschwander
One Hundred Hungry Ants by Elinor Pinczes
2X2=Boo! A Set of Spooky Multiplication Stories by Loreen Leedy
Best of Times by Greg Tang

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