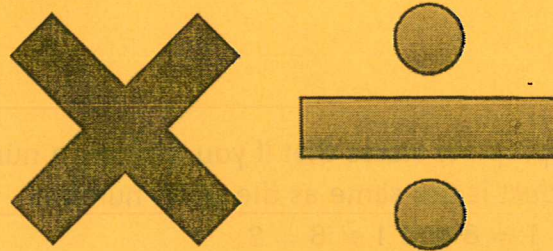# Chapter 3
Understand Multiplication and Division

Study Buddy

MULTIPLICATION

DIVISION

MATH at HOME

Dear Family,

Today my class started the **Understand Multiplication and Division** chapter. I will be learning how to use multiplication and division properties. I will also learn to identify factors and multiples. Here are my vocabulary words that I will be using during my lessons.

Love, _____

p.s. Look on the back of this letter to find some quick practice tips that we can do together along with an activity and books for us to read at home.

Vocabulary

Commutative Property: the property states that the order in which two numbers are multiplied does not change the product
$7 \times 2 = 2 \times 7$

Associative Property: the property states that the grouping of the factors does not change the product
$3 \times (6 \times 2) = (3 \times 6) \times 2$

Identity Property: the property states that if you multiply a number by 1, the product is the same as the given number
$8 \times 1 = 8$ and $1 \times 8 = 8$

Zero Property: the property states that any number multiplied by zero is zero
$0 \times 5 = 0$

fact family: a group of related facts using the same numbers
$5 \times 3 = 15, 3 \times 5 = 15, 15 \div 5 = 3, 15 \div 3 = 5$

factor: a number that divides into a whole number evenly
The factors of 24 are 1, 2, 3, 4, 6, 8, 12, and 24.

multiple: a multiple of a number is the product of that number and any whole number
15 is a multiple of 5 because $3 \times 5 = 15$.

Ch. 3 Vocabulary Continued

dividend: the first number in a division problem; the number being divided

divisor: the second number in a division problem; the number you are dividing by

quotient: the answer to a division problem

product: the answer to a multiplication problem

At Home Activity

Pretend you are planning a birthday party and putting together the party favor bags. Together with your child, discuss how many people you will invite, what will be in each party favor bag, how many of each item will be in each bag, and so on. Write a shopping list with the total number of each item needed.

10 party hats
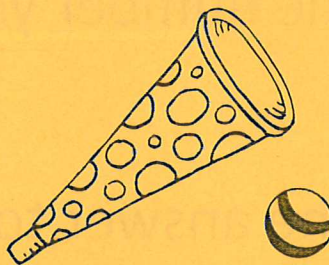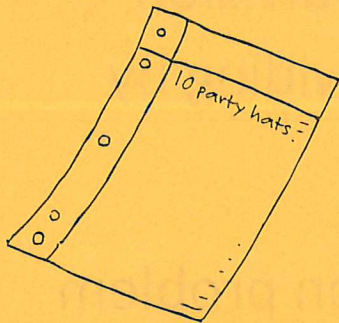
Travel Talk

Have students multiply and divide numbers found on road signs. For example: The speed limit sign says 35 m.p.h.; multiply 3 × 5. A billboard advertises a 50% sale; have students divide 50 ÷ 10.

Books to Read

Anno's Mysterious Multiplying Jar
by Mitsumasa Anno

The King's Chessboard
by David Birch

Spaghetti and Meatballs For All
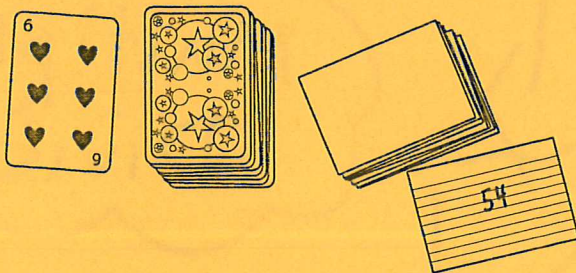by Marilyn Burns

Game Time

Dealing Dividends and Divisors

Ready

You will need:
deck of cards
20 index cards
pen or marker

Set

Remove all wild cards, face cards, and aces from the deck of cards. Write the following list of numbers on the index cards, 1 per card: 8, 12, 14, 15, 16, 18, 20, 21, 24, 27, 28, 30, 32, 35, 36, 40, 45, 48, 54, 63
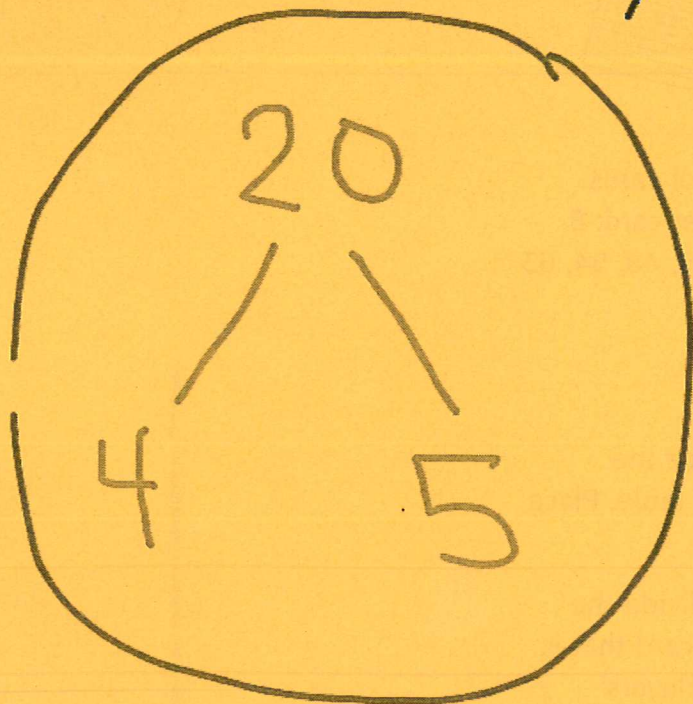
Go!

1. Shuffle the playing cards. Deal 5 to each player. Place the remaining playing cards facedown in a stack on the table. Place the index cards facedown next to the playing cards.

2. Turn over 1 playing card and 1 index card. Players divide the value on the index card by the value of the playing card that is turned over. If the quotient is held in one or more players' hands, those players lay down the card.

3. Turn over a new index card and playing card.

4. Have players check their own cards for the quotient. The first player to lay down all of her or his cards wins.

Example: If the index card turned over is a 54 and the playing card is a 6, then any player with a 9 in their hand can lay it down.

Note: If all of the playing cards or index cards are turned over before someone wins, reshuffle the cards and continue play.

Grade 4 • Chapter 3 Understand Multiplication and Division

Fact Family (Multiplication & Division)

20

4   5
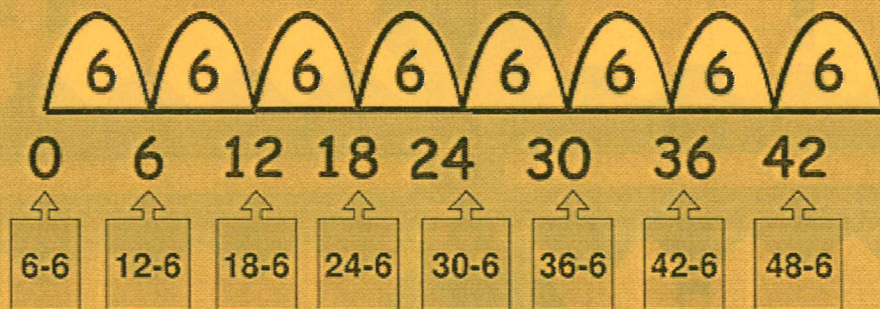
$4 \times 5 = 20$

$5 \times 4 = 20$

$20 \div 4 = 5$

$20 \div 5 = 4$

$$48 \div 6 = 8$$

How many 6's have been subtracted?

That means, there are 8 sixes in 48!

Multiplication Properties Quick Reference Sheet

Commutative Property

You can multiply the factors in any order, and the product will be the same.

Example: 5 x 4 = 20
4 x 5 = 20

Associative Property

You can group the factors in different ways, and the product will be the same.

Example: (3 x 4) x 2 = 24
3 x (4 x 2) = 24

Zero Property

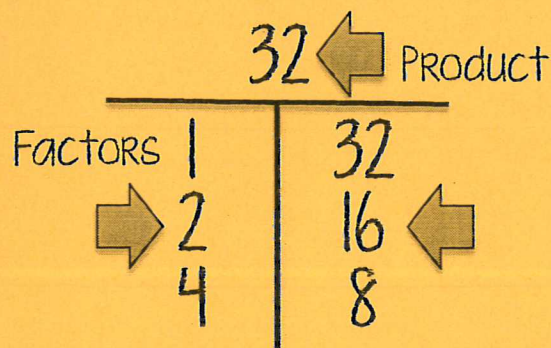The product of any number and zero is zero.

Example: 6 x 0 = 0

Identity Property

The product of any number and one, is that number.

Example: 8 x 1 = 8

FACTORS

Two factors are multiplied together to get a product.

32 ← Product

Factors → 1 | 32
2 | 16 ←
4 | 8

Two ways to think about this...

*What can I multiply together (factors) to get my number (product)?

$1 \times 32 = 32$
$2 \times 16 = 32$
$4 \times 8 = 32$

So the numbers 1, 2, 4, 8, 16 & 32 are factors of 32.

*What numbers can I divide evenly into my number?

MULTIPLES

The product of a given number and another factor multiplied together.

$4 \times 9 = \underline{36}$

Multiple ↑

Find the multiples of 4...

$4 \times 1 = 4$
$4 \times 2 = 8$
$4 \times 3 = 12$
$4 \times 4 = 16$
$4 \times 5 = 20$
$4 \times 6 = 24$
$4 \times 7 = 28$
$4 \times 8 = 32$
$4 \times 9 = 36$

4, 8, 12, 16, 20, 24, 28, 32, 36 and so on are multiples of 4.

Skip counting by 4 also will give you the multiples!

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