

## Tips for Helping at Home

- Questions to ask:

What is it that you don't understand (have the student be specific)?

What about putting things in order?

Could you try it with simpler numbers?

Can you guess and check?

Does this make sense?

What can you do to explain your answer to show others what you are thinking?

Does your answer seem reasonable?

- Think about when you use multiplication and division in your everyday life and enlist your child's help in solving these problems. For example, how many people are we expecting for a party? How many cookies do we need if we want to give each person 4 cookies?
- Play the Division Bingo game your child brings home for homework.
- Encourage your child to explain his or her strategies for multiplying and dividing numbers.



## Mathematical Emphasis

### Investigation 1—Multiplication Tables

- Looking for and using the multiplication patterns of numbers
- Becoming familiar with the multiples of larger numbers
- Identifying factors of larger numbers

### Investigation 2—Double-Digit Multiplication

- Using familiar landmark numbers to solve problems
- Partitioning large numbers to multiply them more easily
- Solving double-digit multiplication problems

### Investigation 3—Multiplication and Division Choices

- Understanding how division notation can represent a variety of division situations
- Creating a context that is representative of a division equation
- Using familiar landmark numbers to solve problems
- Using multiplication and division relationships in order to solve problems
- Exploring factors of large numbers (including triple-digit numbers) and developing conjectures about divisibility
- Finding multiples

## Websites

<http://cms.everett.k12.wa.us/math/Fourth Grade>

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

<http://www.aplusmath.com/games/matho/MultMath o.html>



## Grade 4

# Packages and Groups

## Multiplication and Division



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## Vocabulary

**Division:** The process of sharing a number of items to find how many groups can be made or how many items will be in each group

**Multiplication:** The process of finding the total number of items in equal-sized groups, or of finding the total number of items in a given number of groups when each group contains the same number of items

**Multiple:** The product of a given whole number and another whole number

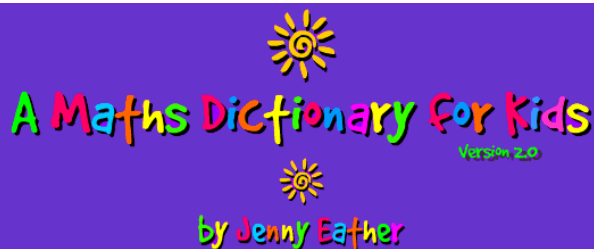
**Factor:** A number that is multiplied by another number to find a product

**Equation:** A number sentence which shows that two quantities are equal

Example:  $5 \times 6 = 30$

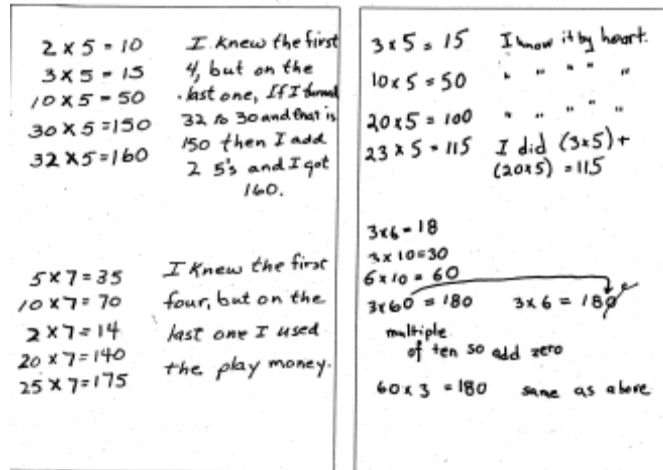
## Glossary

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



## About Cluster Problems

Cluster problems are sets of problems that help students think about using what they know to solve harder problems. The cluster problems in this unit are designed to help students make sense of multiplying two-digit numbers. They build an understanding of the process by pulling apart multiplication problems into manageable sub-problems, solving each of the smaller problems, then putting the parts back together.



Cluster problems are intended to help students learn how to look at a problem and build a strategy to solve it based on the number relationships they know. When working on cluster problems with your child, encourage them to add to the clusters any problems they think of that they use to solve the final problem in the cluster.

Economopoulos, K. Investigations in Number, Data, and Space: Packages and Groups. Dale Seymour Publications, 1998.

## Game

### Division Bingo

Materials:

- Completed Multiplication Table: 1 per game for each player.
- One deck of Numeral Cards (0-9)
- Counters (such as pennies or beans) to cover the numbers

How to play:

1. Take turns drawing a Numeral Card. Every player then covers one number that is a factor of the card drawn.
2. If a Wild card is picked, the player who picked it decides on the number to be used. For strategy, the player should choose a number that helps his or her game, but does not help the other players.
3. The goal is to cover five numbers in a row—either across, up and down, or diagonally—and get Bingo.
4. Players may choose to continue until the other players also get five in a row.