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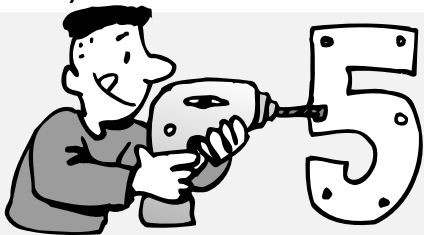
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## NOTE TO PARENTS

Although this book has been specifically designed to be used by classroom teachers for teaching multiplication facts, the materials are extremely helpful when used by parents and children at home.

If you have purchased this book to use at home with your child, I recommend that all of the fill-in-the-blank pages be inserted into vinyl page protectors and worked with a dry-erase overhead transparency marker. The page protectors can be washed and the page can be reused. Put all the page protectors and worksheets into a vinyl, two-pocket binder. The pen, flash cards and other materials can be kept in the binder pockets, thus creating a handy, portable math kit.

I think you will find that these methods work extremely well both at home and in the classroom. It's a book you can count on!



### DEDICATION

To my husband, Joe, who has always supported me through my many and varied projects.  
To my children who always motivate me.



### ACKNOWLEDGEMENTS

A special thanks to all these people who have helped and supported me in my work on *Math Phonics™—Multiplication*: Lorraine Jeter who was the first to listen and give me her vote of confidence; Diane Degood who taught me word processing in her “spare” time; Principal Larry Conrardy who allowed me to offer my materials to his teachers at St. Francis School in Wichita, Kansas; Mary Lou Harding for helping me film a demonstration video; Sandi Rongish for her time and support; Bonnie Sheahon, Kay Suchan, Becky Low, Julie Stuckey, Diana Dechant, Melissa Peterson and Cindy Goodwin for listening and trying some of my suggestions; and to Walter Lohrentz, who taught me to multiply. A special thanks to Wesley Learned and Judy Mitchell for their detailed suggestions which helped me to finally devise the best format. Lastly, thanks to God the father for giving me the gift of life.

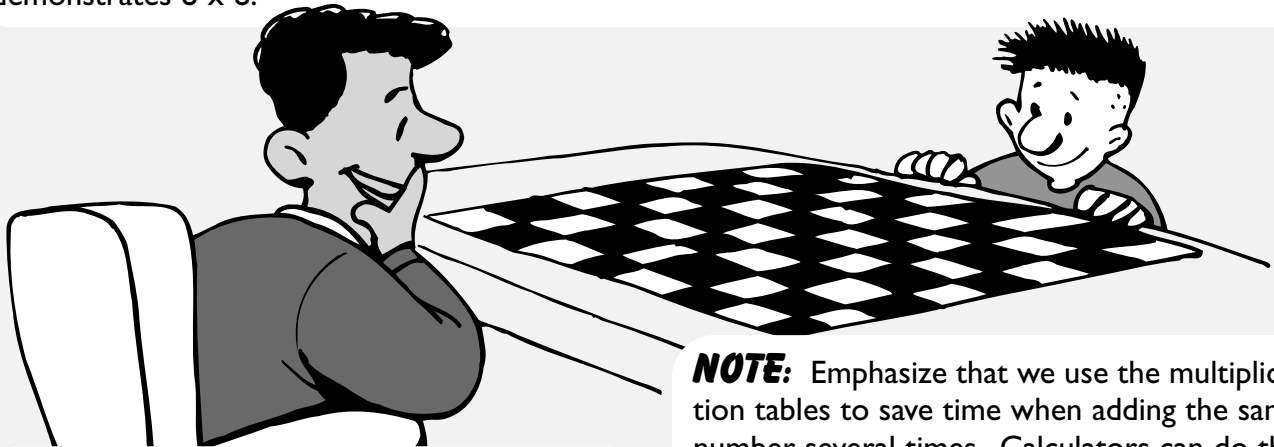
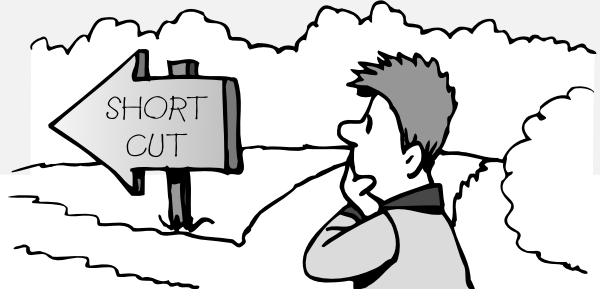
# LESSON PLAN 1

**OBJECTIVE:** Understanding the Concept of Multiplication. Students will understand the basic concept of multiplication by use of concrete examples. It is necessary for them to grasp *how* we find the answers to the multiplication facts before beginning to memorize them.

**MATERIALS:** Rectangular Array for 4s (page 13), pocket folders, parents' note (page 12)

**INTRODUCTION:** Tell students that multiplication is the shortcut to adding the same number several times. Show them one example in the room, such as floor tiles or perhaps rows and columns of windowpanes. Counting the number of desks in one row and multiplying by the number of rows would be another example.

Bring an example from home if necessary. An egg carton demonstrates  $2 \times 6$ . A checkerboard demonstrates  $8 \times 8$ .



**DO:** Use the Rectangular Array for 4s. Use a situation that might occur in students' lives such as bringing treats to school. The student can't remember how many are in the class, but the teacher did say that there are seven rows with four in each row. Tell students to use the Rectangular Array to find the correct answer. If necessary, explain that for  $4 \times 1$ , they should count the boxes in the first row, for  $4 \times 2$ , they count the boxes in the first two rows and so on.

Tell students to fill in all the correct answers in the right-hand column of blanks.

Explain that when the two numbers being multiplied are reversed, the answer is still the same.



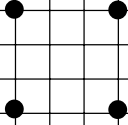
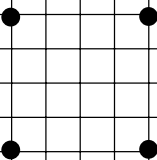
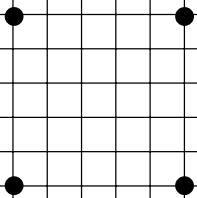
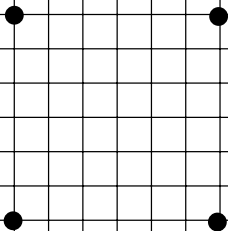
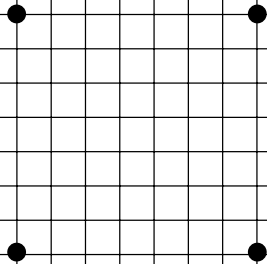
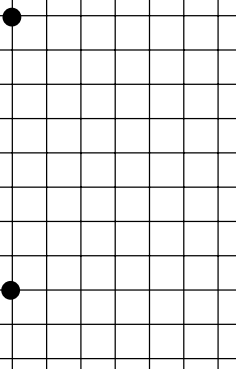
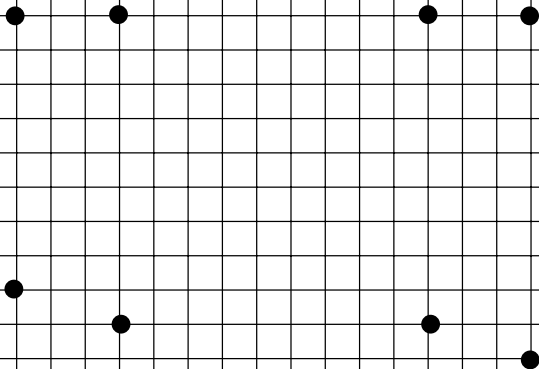
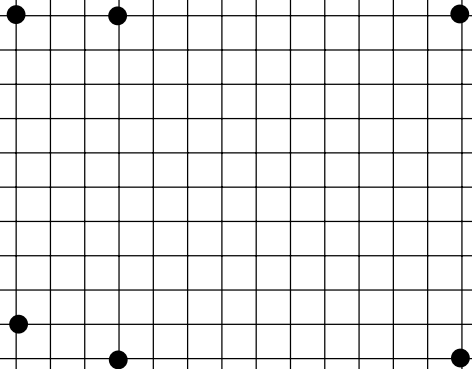
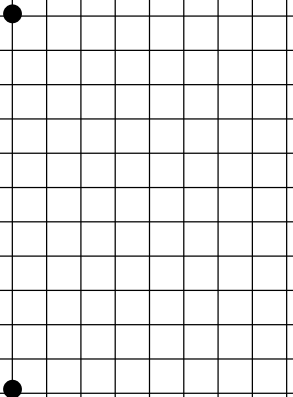
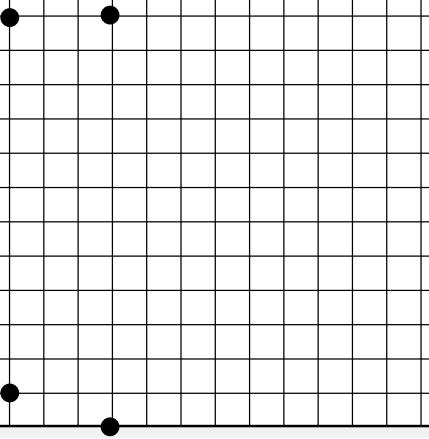
**NOTE:** Emphasize that we use the multiplication tables to save time when adding the same number several times. Calculators can do this for us, but it is very important to be able to do this without help because we may not always have a calculator.

**ASSIGNMENT:** Students should find at least three examples of items in a rectangular array at home or on the way home. Small windowpanes in a large window or tiles in a floor are good examples. Sometimes newspaper advertisements show multiplication facts. For example, a light bulb ad might show two packs of light bulbs with four bulbs in each pack for an example of  $4 \times 2$ . Have them find more than three examples if they can.



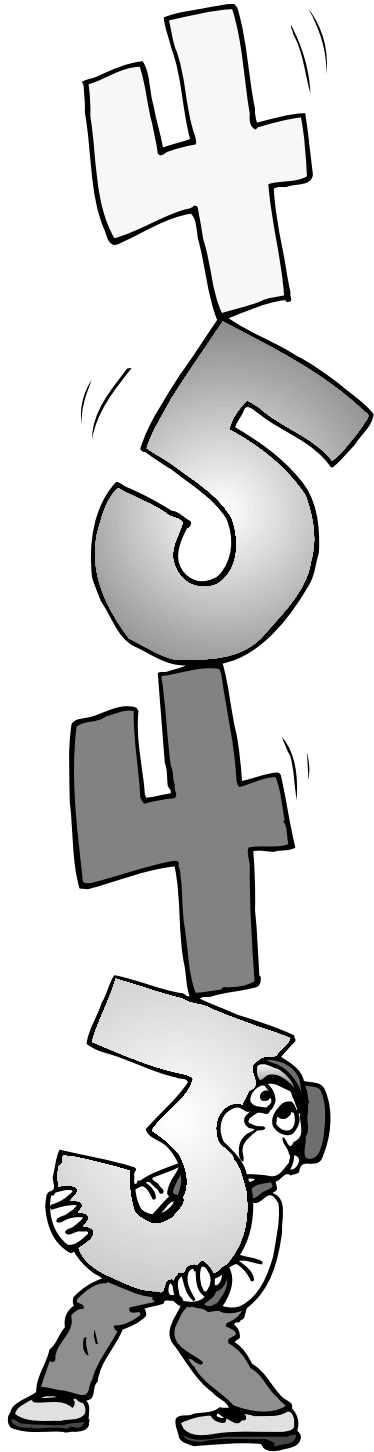


# PERFECT SQUARES

$0 \times 0 = 0$	$1 \times 1 = 1$	$2 \times 2 = 4$	$3 \times 3 = 9$
			
$4 \times 4 = \underline{\quad}$	$5 \times 5 = \underline{\quad}$	$6 \times 6 = \underline{\quad}$	$7 \times 7 = \underline{\quad}$
			
$8 \times 8 = \underline{\quad}$	$9 \times 9 = \underline{\quad}$	$10 \times 10 = \underline{\quad}$	
			
$11 \times 11 = \underline{\quad}$	$12 \times 12 = \underline{\quad}$		
			

Name \_\_\_\_\_

## WORKSHEET FOR 3s, 4s AND 5s



21.  $3 \times 4 = \underline{\quad}$

22.  $4 \times 10 = \underline{\quad}$

23.  $3 \times 5 = \underline{\quad}$

24.  $4 \times 7 = \underline{\quad}$

25.  $3 \times 9 = \underline{\quad}$

26.  $3 \times 6 = \underline{\quad}$

27.  $4 \times 12 = \underline{\quad}$

28.  $3 \times 7 = \underline{\quad}$

29.  $4 \times 6 = \underline{\quad}$

30.  $3 \times 11 = \underline{\quad}$

31.  $5 \times 10 = \underline{\quad}$

32.  $5 \times 11 = \underline{\quad}$

33.  $4 \times 11 = \underline{\quad}$

34.  $5 \times 5 = \underline{\quad}$

35.  $3 \times 12 = \underline{\quad}$

36.  $5 \times 12 = \underline{\quad}$

37.  $4 \times 8 = \underline{\quad}$

38.  $4 \times 10 = \underline{\quad}$

39.  $3 \times 3 = \underline{\quad}$

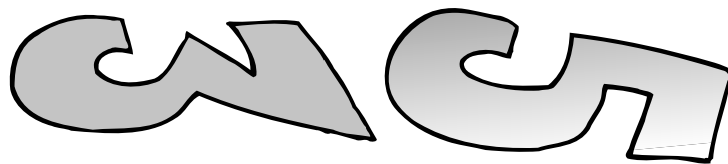
40.  $3 \times 10 = \underline{\quad}$

41.  $3 \times 11 = \underline{\quad}$

42.  $4 \times 12 = \underline{\quad}$

43.  $5 \times 11 = \underline{\quad}$

44.  $3 \times 12 = \underline{\quad}$

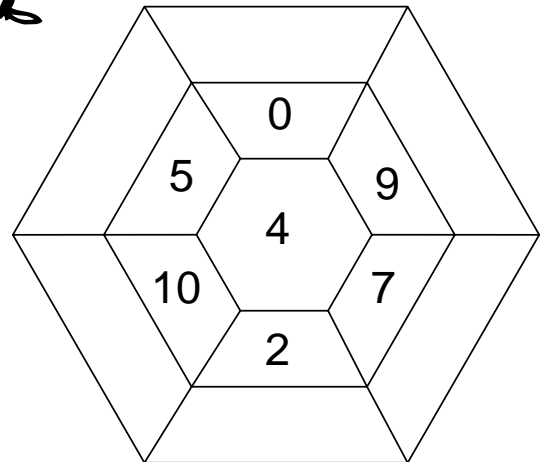
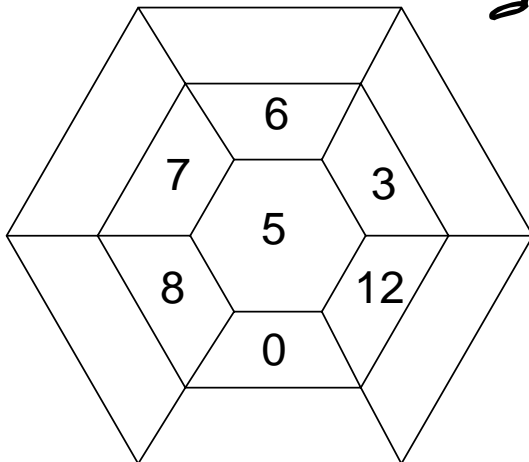
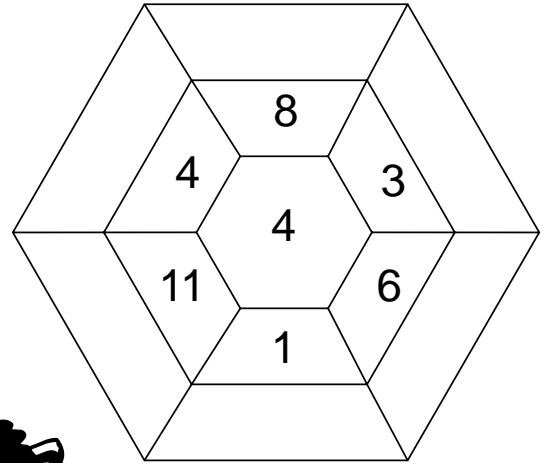
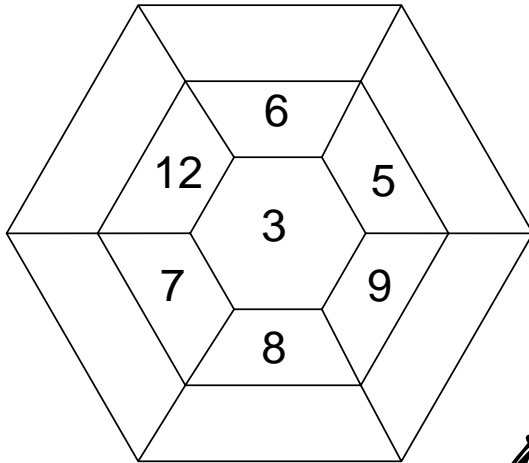


Count by 4s: 4, 8, 12, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Count by 5s: 5, 10, 15, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**WEB WORK**

**Directions:** Multiply the number in the center of the web by each number around it. Put each answer in the outer section of the web.



**CHALLENGE:** Can you make up a shortcut rule for multiplying a number by 1,000?