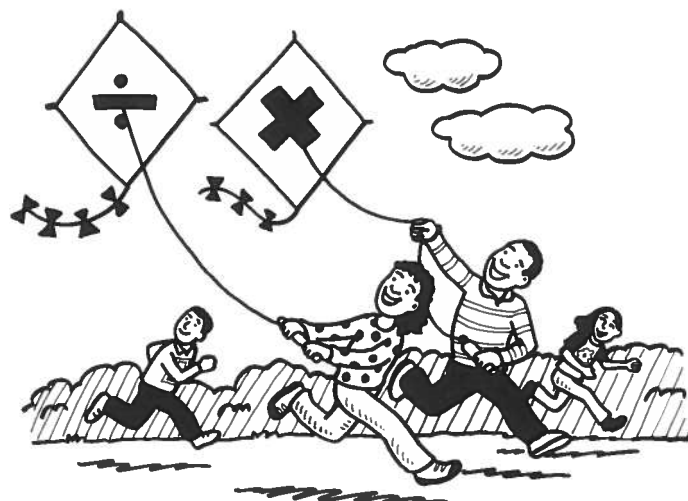


Fun with Multiplication and Division

Mastering multiplication and division will help your child now and give her a strong foundation for higher math later on. Make practice enjoyable with these ideas.



Hooray, arrays!

Creating *arrays* is a good way for your youngster to see “groups” in multiplication. (Note: An array is an arrangement of objects or symbols in rows and columns.)

Name a number, and ask your child to organize a group of toys into as many different arrays as possible to represent that number. For

12, she might put blocks into 6 different arrays: 1 row of 12; 12 rows of 1; 2 rows of 6; 6 rows of 2; 3 rows of 4; and 4 rows of 3. As she makes each one, she can say the multiplication problem (1×12 ; 12×1 ; 2×6 ; 6×2 ; 3×4 ; 4×3). Then, let her pick a number for you to turn into arrays.

Idea: Have your youngster think of a division problem using the numbers from her array ($12 \div 2 = 6$). You'll help her understand the idea that multiplication and division are *inverse* (opposite) operations.

Equation hunt

Encourage your child to use times tables to beat boredom with this activity perfect for a waiting room (or anyplace else).

Ask him to pick a number from 1 to 12. Take turns finding something to represent each multiplication fact in the times table for that number. For example, if he chooses 7, you might

spot $7 \times 1 = 7$ people in a waiting room, $7 \times 2 = 14$ shoes on their feet, or $7 \times 3 = 21$ for the page number in a magazine.

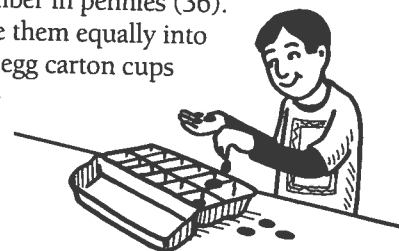
Keep going until you can't come up with any more equations. The last person to find one gets to pick the next number.

A simple math tool

Understanding that 6×4 means 6 groups of 4, and that $15 \div 3$ means breaking 15 into 3 groups of 5, is easier when your youngster can see it for himself. Here's how to use an egg carton and pennies to help.

For multiplication, suggest that he fill the egg carton according to the equation. The first number tells how many cups to use, and the second tells how many pennies go in each cup. For 7×6 , he would fill 7 cups with 6 pennies each. Counting the pennies—or skip counting by 6s (6, 12, 18)—will give the answer to the equation (42).

For a division problem, such as $36 \div 4$, your child can count out the first number in pennies (36). Then, he should divide them equally into the smaller number of egg carton cups (4). He will see that 36 divides into 4 groups of 9, or $36 \div 4 = 9$. If the number doesn't divide equally, he will have a remainder.



continued



Don't go over 100

The object of this game is to create a multiplication problem with a *product* (answer) closest to 100—without going over.

On separate sheets, have each player write five problems like this: $_ \times _ \times _ = _$. Take turns rolling two dice and filling any blank on your paper with the numbers shown. Players will need to think carefully about which equation to put the numbers in! For instance, if your youngster already has $3 \times 7 \times _$, she should fill the last blank with 4, 3, 2, or 1 to keep that answer from going over 100 ($3 \times 7 \times 4 = 84$, but $3 \times 7 \times 5 = 105$).

When all the blanks are filled, solve the problems, and check the answers with a calculator. The winning product is the one closest to 100 without going over. In a tie, the next-closest one wins. *Idea:* Play again, and this time total your five products. The one who gets closest to 500 without going over wins.

The great giveaway

Be the first to *lose* all your points in this division and multiplication card game.

Shuffle a deck of cards (face cards removed, ace = 1), and place the deck facedown. Each player starts with 100 points.

Let the youngest person go first. He flips over a card and says a division problem with that number as the answer. For 5, he

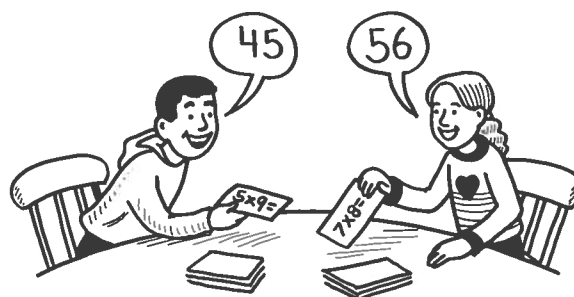
could say, “ $25 \div 5 = 5$.” He should use multiplication to check his answer ($5 \times 5 = 25$). If he's correct, he deducts the card from his score ($100 - 5 = 95$). If not, he must *add* that number to his score ($100 + 5 = 105$). Then, the next player goes.

Keep playing until someone gets rid of all his points (players can go beyond 0—they don't have to hit it exactly). That's the winner!

Flashcard war

This spin on flashcards makes a fun competition for two players.

Have your child write multiplication and division problems on 20 separate index cards, leaving the answers blank. *Examples:* $12 \times 2 = _$, $8 \times 6 = _$, $72 \div 9 = _$.



Shuffle the cards, and deal them into two facedown stacks, one for each person. For each round, players turn over the top card on their pile, solve the problem, and shout out the answer. The person with the higher correct number wins both cards. *Example:* If one player has 5×9 (45), and the other has 7×8 (56), the player with 7×8 gets both cards. In a tie, both players turn over another card and the winner collects all four cards.

Continue playing until all the cards are used. Whoever has the most wins.

Tips for memorizing math facts

Knowing multiplication and division facts by heart makes it easier for your youngster to do more advanced math. Suggest that she make a poster of reminders like these:

- 0: Anything multiplied by 0 equals 0 ($99 \times 0 = 0$).
- 1: Multiplying or dividing any number by 1 gives the same number she started with ($1 \times 42 = 42$, $86 \div 1 = 86$).
- 2: Multiplying by 2 is the same as adding the original number to itself ($6 \times 2 = 6 + 6$). Dividing



by 2 is the same as splitting it in half ($12 \div 2$ is the same as half of 12, or 6).

- 5: Use skip counting to check numbers multiplied by 5 ($5 \times 4 = 20$ is the same as counting by 5s four times: 5, 10, 15, 20).
- 10: To multiply by 10, place a zero at the end of the number you began with ($8 \times 10 = 80$).

Encourage her to add new strategies to the list as she discovers them.