

Teaching Addition to Children – Math Carrying and Borrowing Tips

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Tips for teaching carrying and borrowing

Once these simple straightforward concepts are mastered children will be able to carry and borrow with ease.

CARRYING is a mathematical action you perform when adding two numerals (1, 2, 3, 4, 5, 6, 7, 8, 9, and 0) together in a mathematical problem. Numerals are commonly referred to as numbers (a series of numerals such as 12, 123, and 585). I will address them as such in these instructions. In performing these procedures with a child, you will need a place to sit, a surface to work on (I will call a table), 31 popsicle sticks/pennies/like pieces of candy, et cetera, 2 pencils, at least 2-3 sheets of blank paper, patience, a willingness to teach, and the belief this process may be easier than you think.

Allow the child to get a visual image by counting out twenty-four of the items you've chosen to work with, and placing them in a column on the table. Then, have him/her count out seven items and align them below the twenty-four. Ask how much is twenty-four plus seven. The answer, thirty-one should be given.

Have the child write twenty-four plus seven in a columned math problem on a piece of paper. You do the same. The twenty-four should be above the seven. There should be a plus sign to the

left of the seven, further out than the number two.

Draw a vertical line between the number two and the number four, down passed the seven, and across the horizontal line (that should be written below the minus sign and the seven). Have the child do the same. After the vertical line crosses the horizontal line, there should be enough space to separate the numbers that are going to be written below the horizontal line. Explain that the tens column is the column the number two is in; and that numbers four and seven are in the ones column.

NOTE: The purpose of the vertical line is to help the child grasp the concept that the numbers are lined up in columns. Make sure your and the child's numbers are lined up properly.

Tell the child that the numbers in the ones column must be added together before the numbers in the tens column are added together. Ask the child how much you get when you add four to seven. Once the correct answer, eleven, has been given, explain that you are going to "put down" one of the number ones below the seven just below the horizontal line in the ones column, but that you'll have to "carry" the other number over to the tens column because you cannot have two numbers next to each other in the ones column. Write a number one below the horizontal line. Place the other number one above the number two. Have the child do the same.

Tell the child that the number you carry will always be the numeral to the left of the added numbers. In this case, since the added numbers make eleven, you're carrying the same numeral you're going to keep. However, this will not always be the case.

NOTE: A zero may be placed to the left of the seven and just under the number two so the child can get a visual image that there are zero items in the tens place.

Now the carried number one must be added to the two. Ask how

much is one plus two. After the correct answer, three, is given, you and the child write a number three below the horizontal line just below the number two.

The problem has been completed. The child can see the answer to the problem, thirty-one, is the same as the answer when he/she added their items together on the table.

Repeat this process until the child is comfortable the carrying concept.

BORROWING is a mathematical action you perform when subtracting high valued numerals from low valued numerals in a mathematical problem.

Allow the child to get a visual image by counting out 31 items (as in carrying above) by placing them in a column on the table. Have him/her count out twenty-four items and align them near the upper area, and align the remaining seven below. Ask which is more, twenty-four, or seven.

Ask how many items will be left in the column of twenty four if you take seven items away. Have child consider the problem and allow him/her to remove seven items from the column of twenty-four. After the child counts the remaining seventeen items in said column, tell him/her that is the number you should have after you subtract seven from twenty-four on paper.

Instruct the child to align four items horizontally on the table. Below the four items, instruct him/her to align seven items horizontally. Ask which column has more. After the correct answer, seven, is established, tell the child to take seven items away from the column of four. This action helps the child understand the concept that you cannot subtract more from less; and gives him/her a chance to think about how to solve the problem.

Write twenty-four minus seven in a columned math problem on a

piece of paper. Have the child do the same. Explain that just like with the tangible items, you cannot take seven away from four and that you'll have to "borrow" from the "tens" column. Explain that the tens column is the column the number two is in on the paper; and that numerals four and seven are in the ones column. Then draw a vertical line as with "carrying" above.

Going back to the tangible items, have the child form two columns of ten items, and a column of four items to the right of the column of ten so that the combined columns symbolize twenty-four items in a problematic structure. There should be a space between the twenty-four items and the four items. The column of seven items should be below the column of four.

Next have him/her "borrow" one of the columns of ten items by placing them closer to the column of four items. Tell the child to count the items. After the correct number, fourteen, has been totaled, ask if he/she can take seven items away from fourteen items and how many will be left. Let him/her perform the process of moving seven items from the ones column. After the questions have been answered and it has been established that seven items will be left, ask why he/she was able to take seven away from fourteen. Child should answer fourteen is more than seven. Transfer this concept to the math problem on paper.

Reiterate the fact that you are going to "borrow" ten from the tens column. Draw a diagonal line through the number two; this is called "crossing out". Place a one about one half the size of the four just to the upper left of the number four. Have the child do the same. Reiterate the fact that you have "borrowed" ten from the tens place; and ten plus the four that were already there makes fourteen. Make sure the child understands that there are now fourteen invisible items in the ones column where there used to be only four.

Place a small number one next to the crossed out number two.

Have the child do the same. Ask how many invisible items are left in the tens column. Although there is only a numeral one in this column now, the correct answer is, there are ten invisible items left-this is the tens column. Numbers in the tens column are in degrees of ten. To reinforce this concept, return the child's attention to the items on the table. Ask how many tangible items are left in the column that used to be twenty after you borrowed ten of the items and gave them to the four. The answer should be ten.

Ask how much will be left after you take seven from the fourteen. After the correct answer, seven, has been established, you and the child write the answer, seven, below the horizontal line, just below the number four. Now, you and the child bring down the one that is remaining in the tens column and place it next to the seven below the horizontal line on your papers. Tell the child there are zero items to add to the one in the tens column.

NOTE: A "0" may be placed to the left of the seven, just below the initial number in the tens column-in this case, number 2- to help the child understand there are zero tens available to subtract from the one.

These simple tips should make carrying and borrowing a cinch once children master them. Start using two numerals at the "tops" and at the "bottoms" of problems after the child conquers these basics of adding or taking away one numeral. Eventually, the child will be able to add or subtract three, four, and more numerals in a row; and to "add" three, four and more "rows" of numbers.