

Cover Art The Open Primary class of Dorothy Messner and Paula Crivello at R.H. Down School.

Art Staff DENIS MURPHY ROY LIPSCHUTZ Art and Production Manager LIESELOTTE ESSER

ROBERT BECK

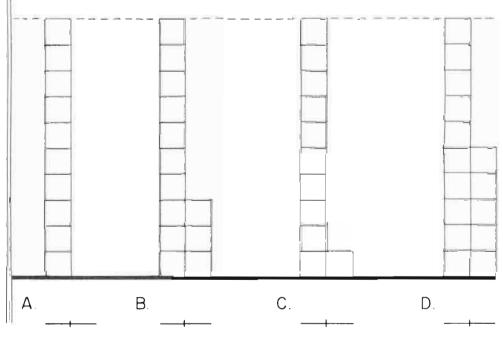
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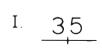
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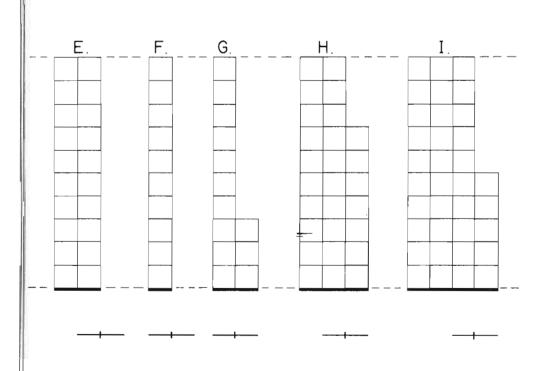
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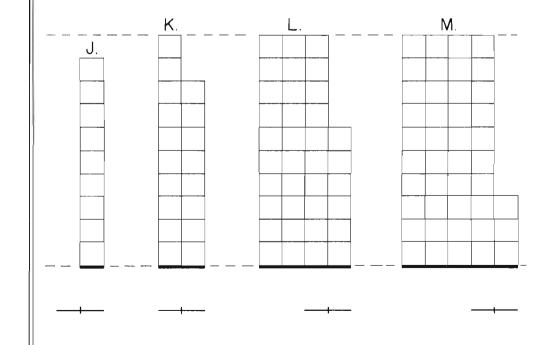
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K. ____

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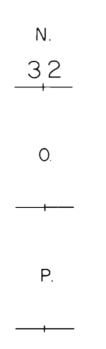
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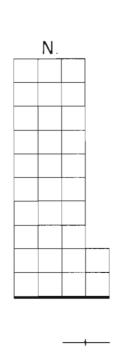


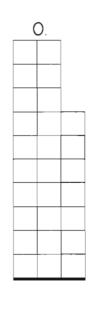
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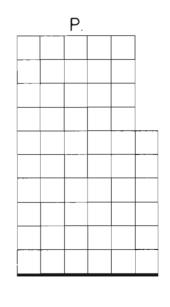
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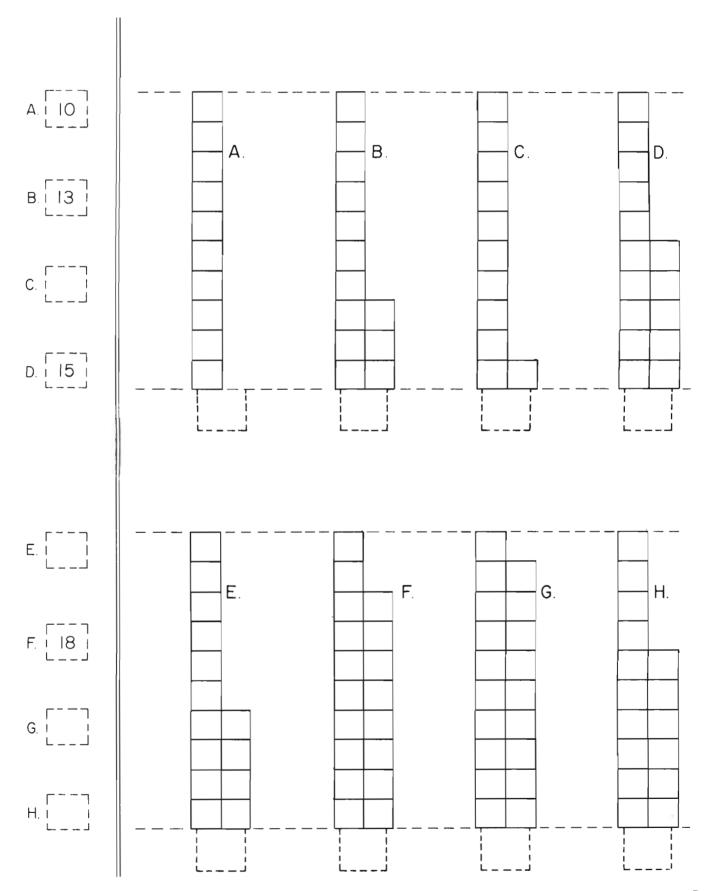
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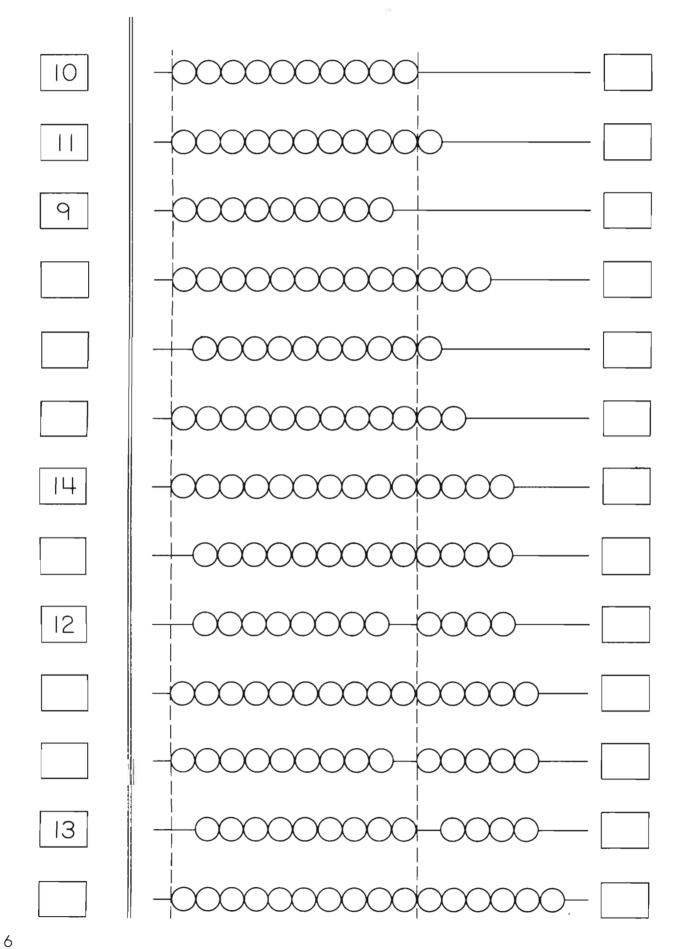


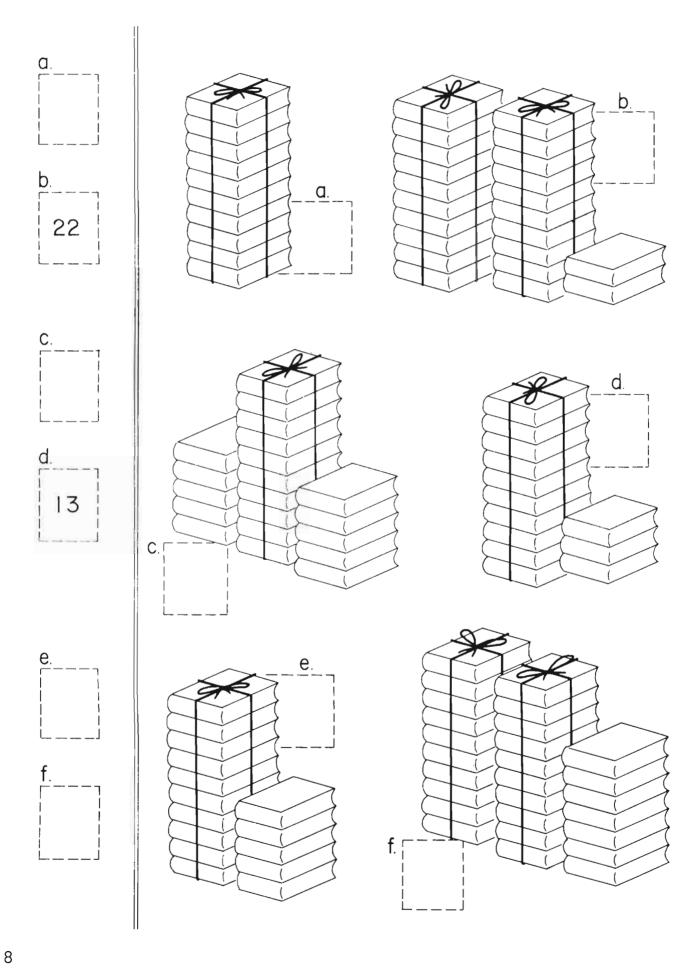










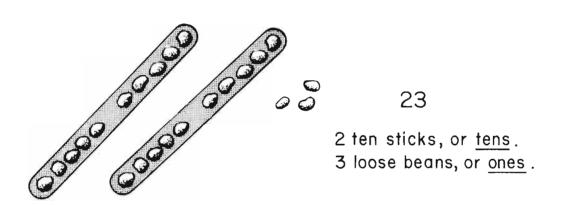


How do you feel? ¿Cómo se siente?

Dear Parents,

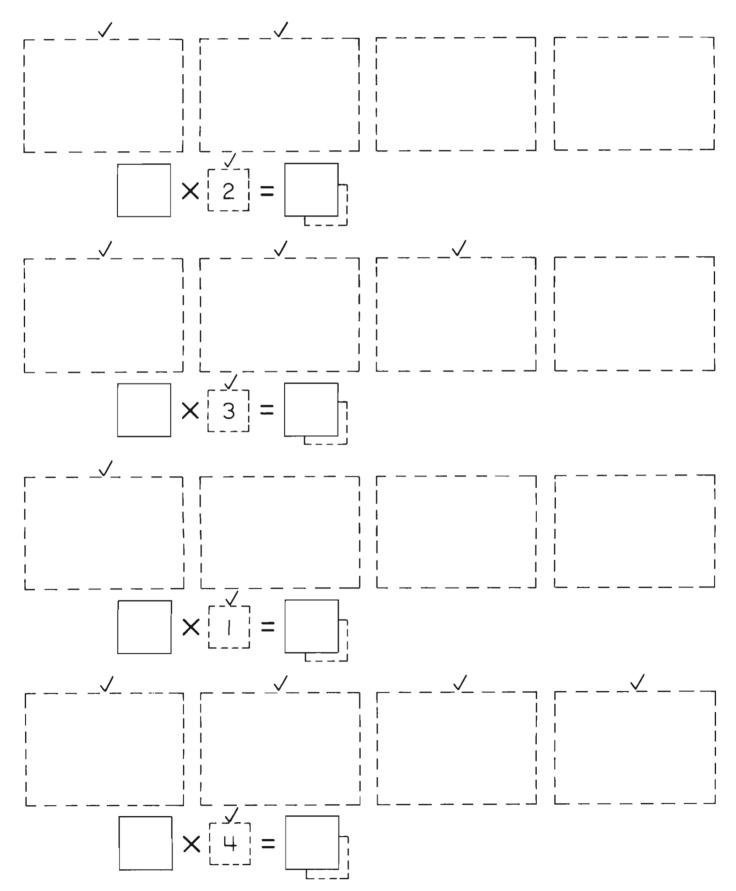
The check-up exercise on the back of this page shows progress in that increasingly familiar task of "counting on". We still can't be sure, unless we actually watch the child carefully during the test, if counting on is really happening, or if each book or bead is being counted. You can subtly check on this by casually asking your child how the sum was arrived at by showing the reverse side of this page and asking that you be shown how to do it. (Children take great delight in showing adults how to do things, as long as they don't think it's a trap-so be careful!)

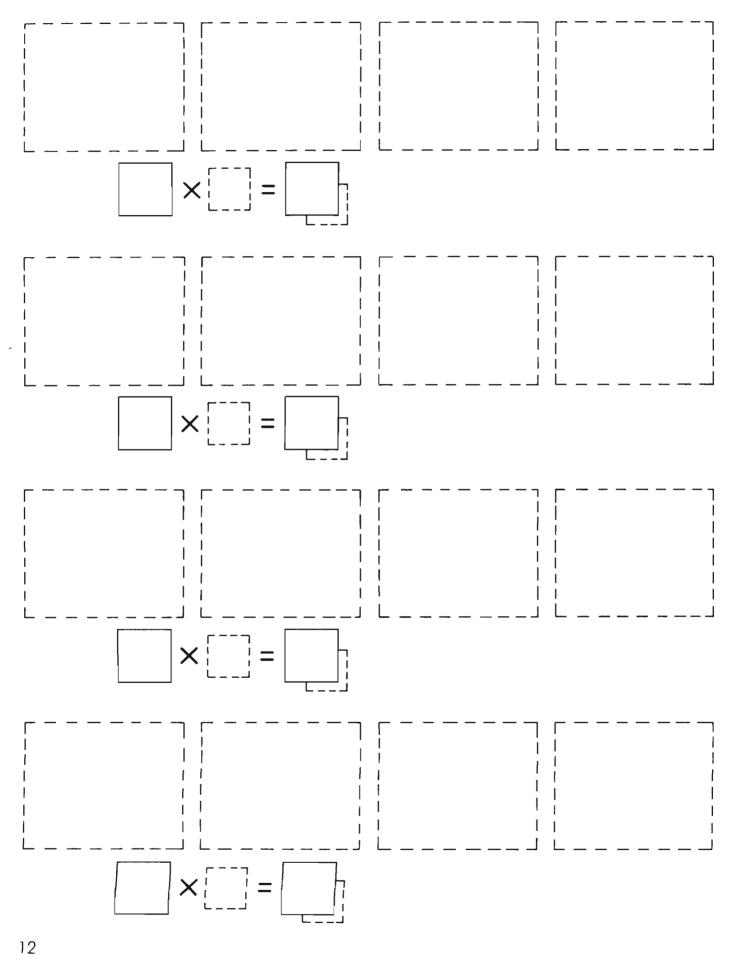
If you made the "bean-sticks" suggested earlier, you can help your child practice "counting on" by using "ten-sticks" and loose beans, and asking the sum. For example:

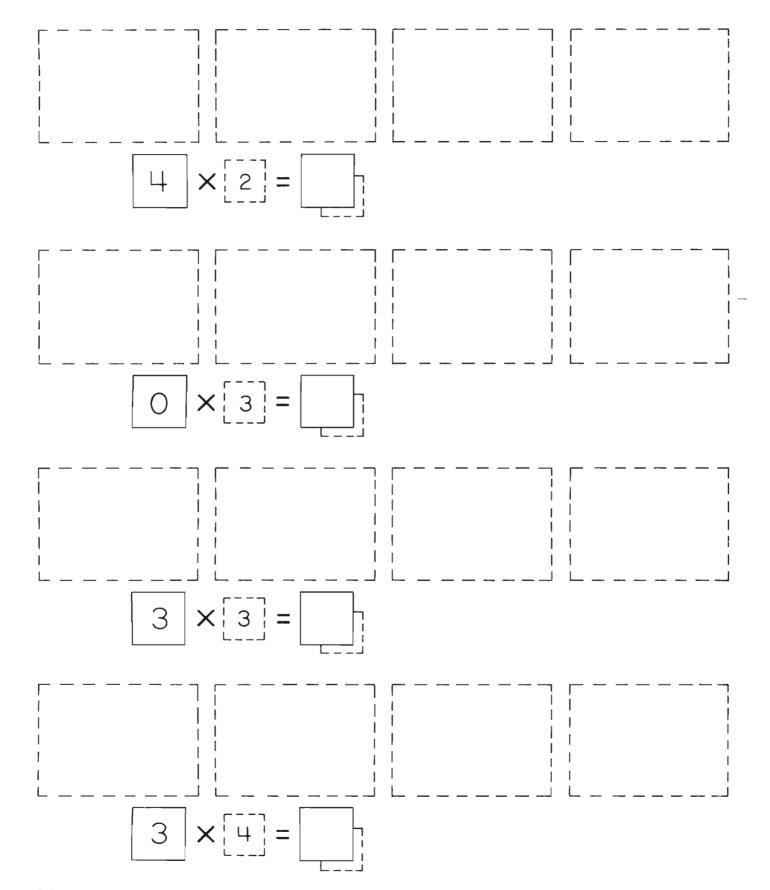


Don't be surprised in the next few days when you find your child bringing home multiplication problems. Instead of delaying this operation until much later, as in most math programs, we teach it now as a short-cut to addition. It is best done with beans, buttons, or counters at this stage. To assure continuing success, feel free to express your DELIGHT & AMAZEMENT when the first papers come home!

Sincerely,









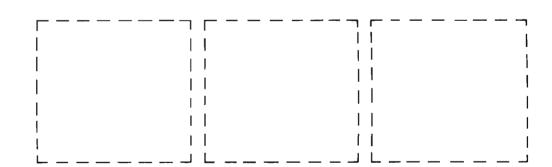








B.
$$\begin{bmatrix} 2 \\ x \\ \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \end{bmatrix}$$



$$E \left[\begin{array}{c} 0 \\ \end{array} \right] \times \left[\begin{array}{c} 3 \\ \end{array} \right] = \left[\begin{array}{c} \end{array} \right]$$

$$F\left[2\right] \times \left[3\right] = \left[$$

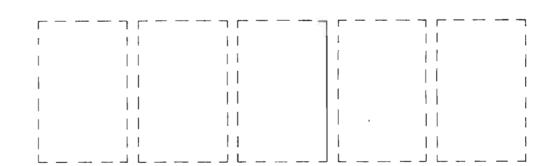








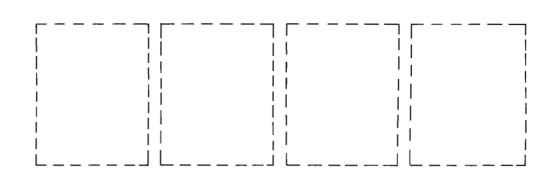
$$G_{n} \left[2 \right] \times \left[\frac{1}{4} \right] = \left[\frac{1}{2} \right]$$

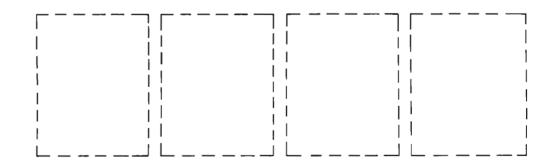


J.
$$\left[\begin{array}{c|c} x & \boxed{5} \end{array} \right] = \left[\begin{array}{c|c} \end{array} \right]$$

$$L \left[3 \right] \times \left[5 \right] =$$

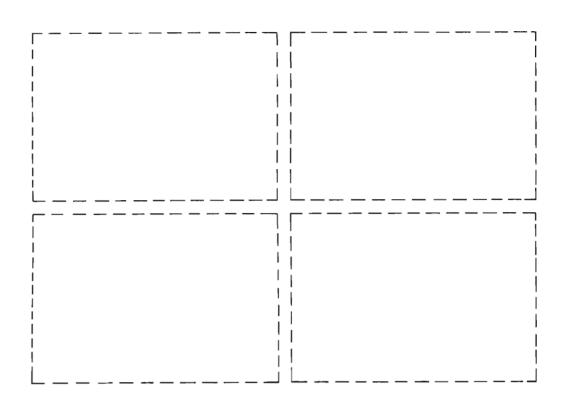
Q. _____





$$Q. \quad \boxed{2} \times \boxed{4} = \boxed{1}$$

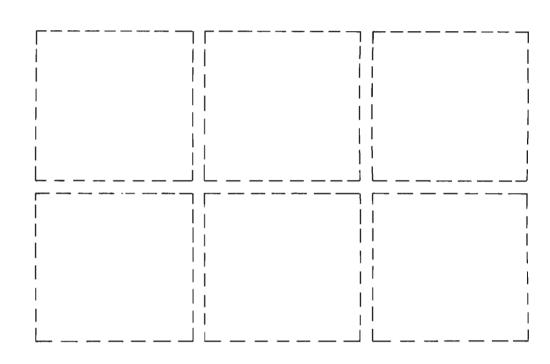
R.
$$\begin{bmatrix} 5 \end{bmatrix} \times \begin{bmatrix} 2 \end{bmatrix} = \begin{bmatrix} 1 \end{bmatrix}$$





s.
$$3 \times [2] =$$

$$\mathbf{w} \cdot \begin{bmatrix} 6 \\ \times \begin{bmatrix} 2 \\ \end{bmatrix} = \begin{bmatrix} 1 \\ \end{bmatrix}$$



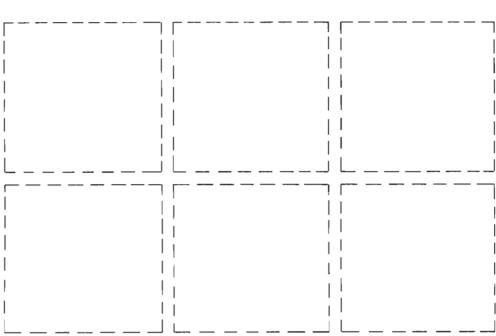


a.
$$\begin{bmatrix} 1 \\ 4 \end{bmatrix} \times \begin{bmatrix} 6 \\ 6 \end{bmatrix} = \begin{bmatrix} 1 \\ 4 \end{bmatrix}$$

$$e. \boxed{6} \times \boxed{6} = \boxed{}$$

f.
$$\begin{bmatrix} 5 \end{bmatrix} \times \begin{bmatrix} \overline{6} \end{bmatrix} = \begin{bmatrix} \overline{} \end{bmatrix}$$

Ι



g. 5

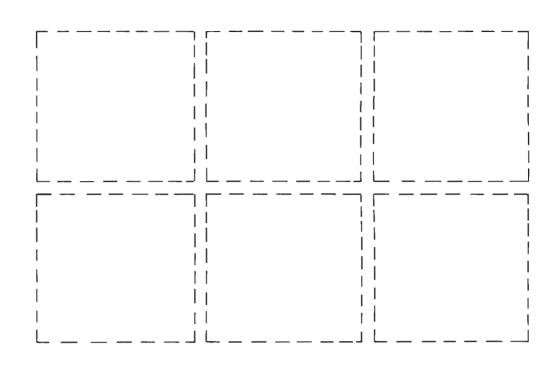
h.

i. 15

j. _____

k. ____

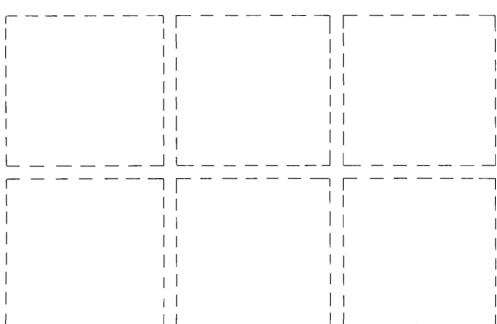
1. 30



$$m.$$
 \times $\begin{bmatrix} \overline{} \\ \overline{} \end{bmatrix} = \begin{bmatrix} \overline{} \\ \overline{} \end{bmatrix}$

q.
$$5 \times 5 =$$

.



s.

s.
$$\begin{bmatrix} 6 \end{bmatrix} \times \begin{bmatrix} 0 \end{bmatrix} = \begin{bmatrix} 0 \end{bmatrix}$$

t. ____

u. <u>12</u>

V. _____

w. 24

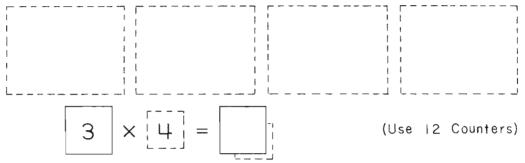
X.____

How do you feel? ¿Cómo se siente?



Dear Parents,

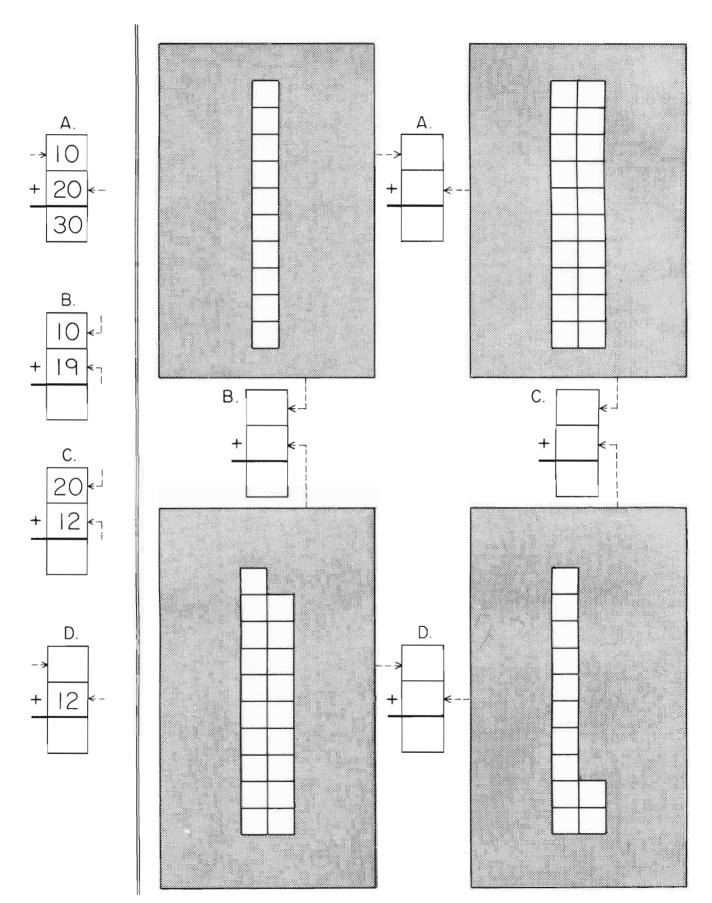
Now you can see that your child understands the fundamental process of multiplication, a shortcut to addition. For a long time it will be necessary to rely on counters of some sort. Maybe you can get out some dried beans or buttons and ask your little one to show you how to do it:

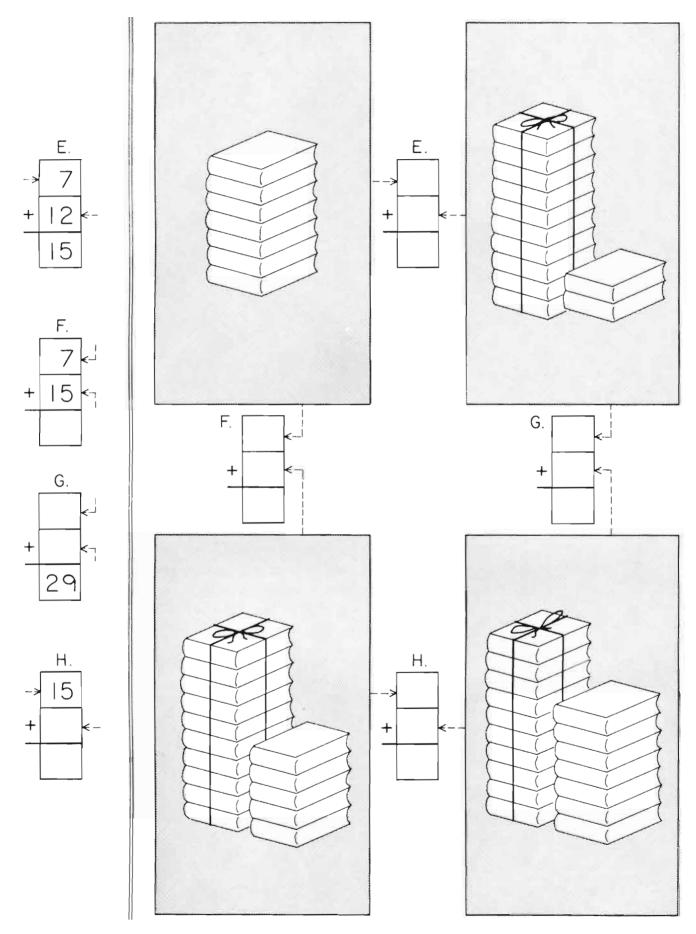


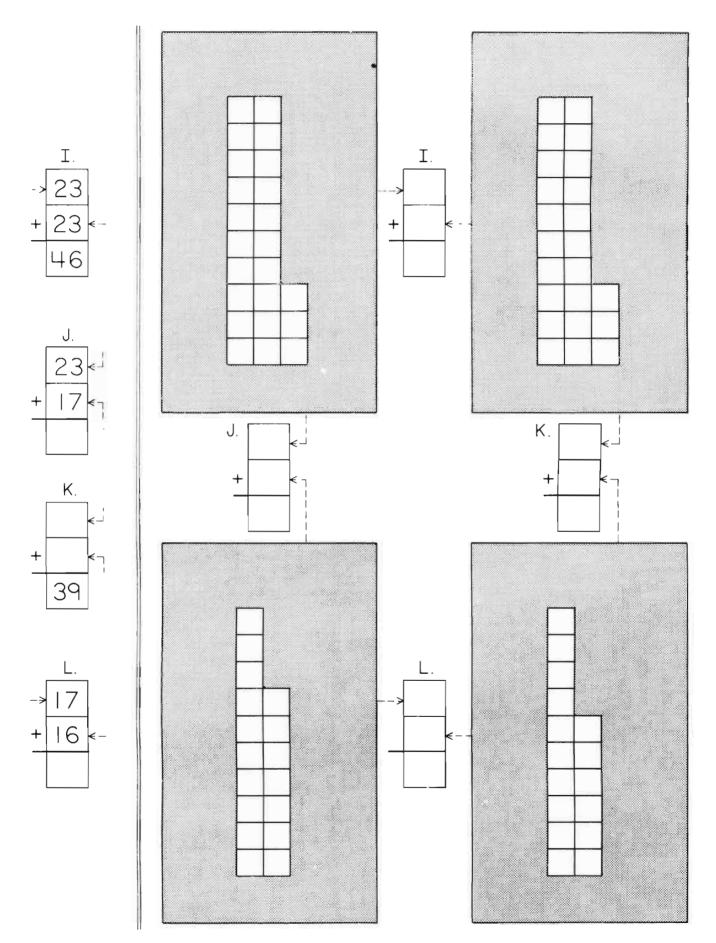
Actually, children have a sense of what multiplication is long before they know how to write it down. Again, resist the temptation to take the shortcut of teaching the "times tables" by rote memory. This is meaningless at this stage, and may never be necessary if enough experience is developed by the continous use of things to group and count.

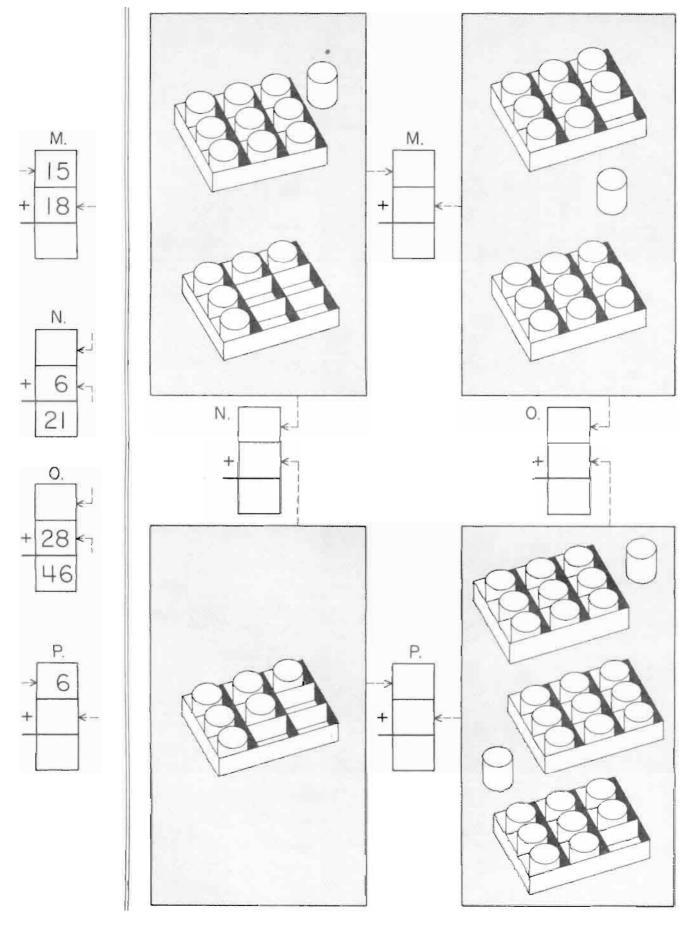
Coming next is the preliminary step to a long training process in regrouping tens in addition--what we used to call "carrying." Again we beg of you, resist the temptation to teach your child the "fast" way like we were taught. It bypasses understanding and usually creates insecurity. So far your young one is having high success. Let's work together to keep it that way!

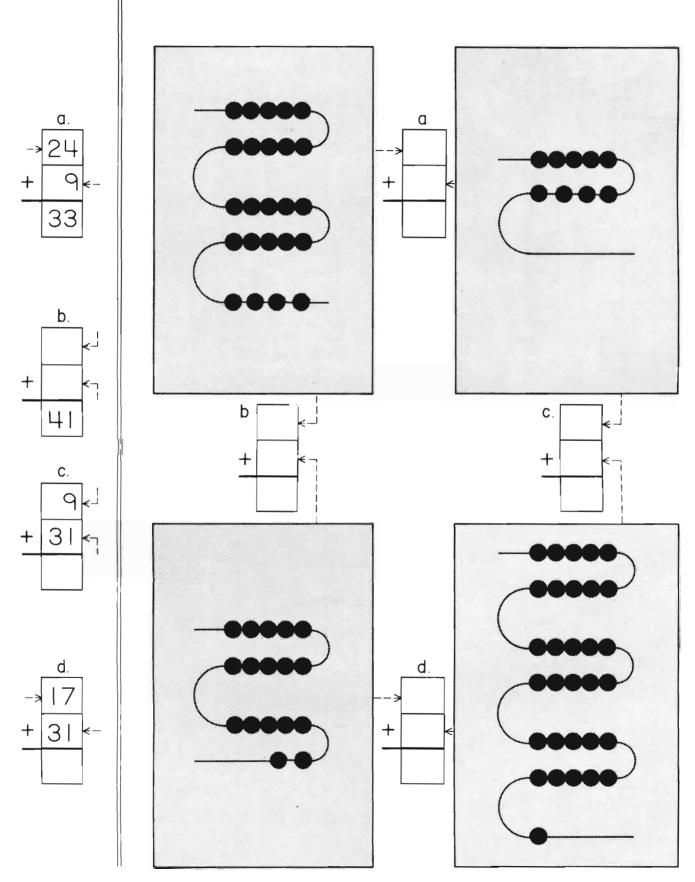
Sincerely,

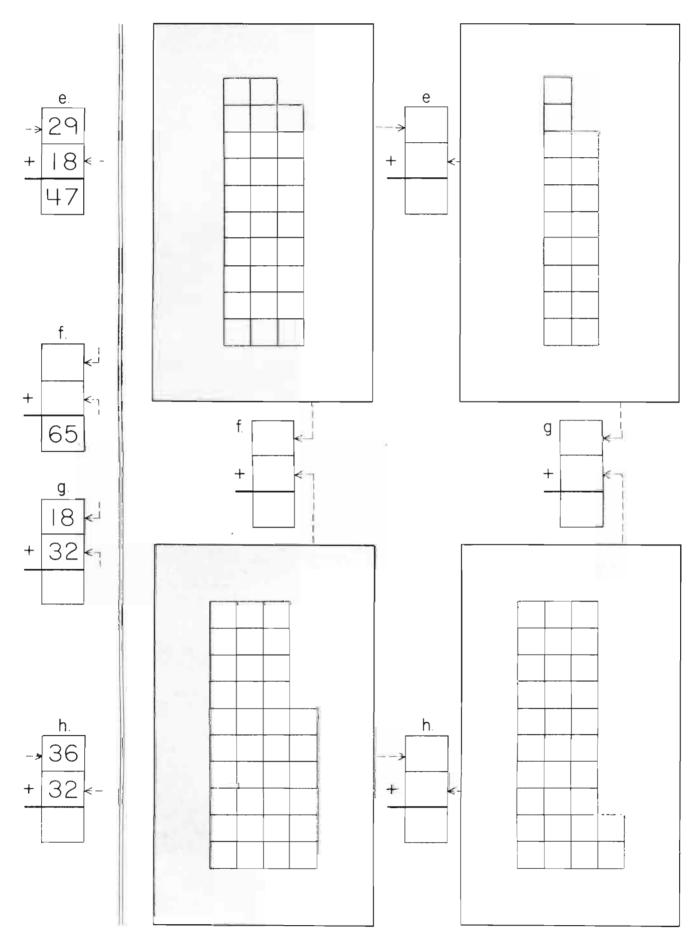


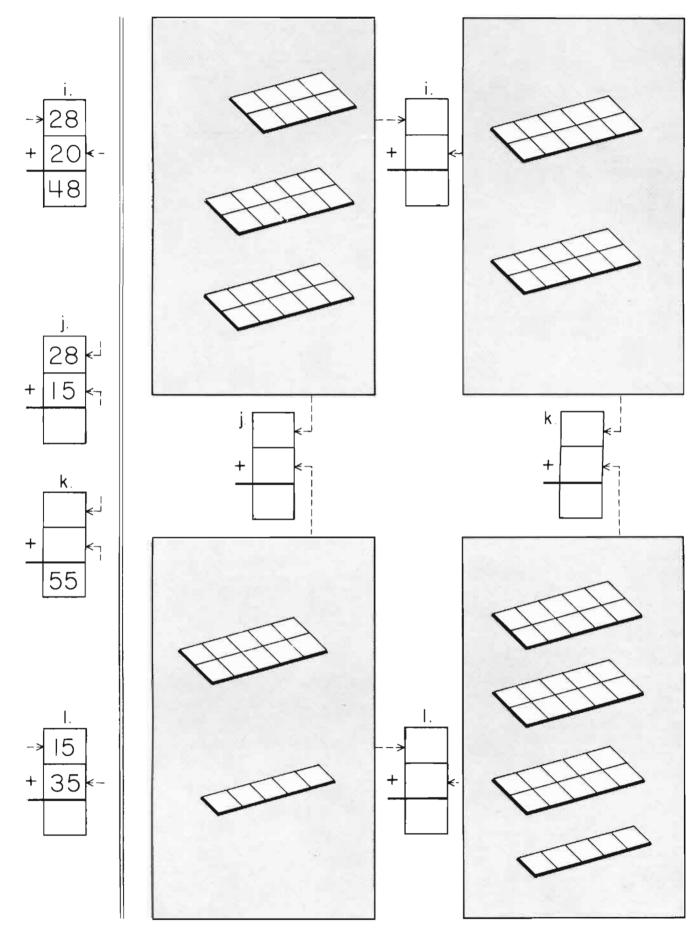




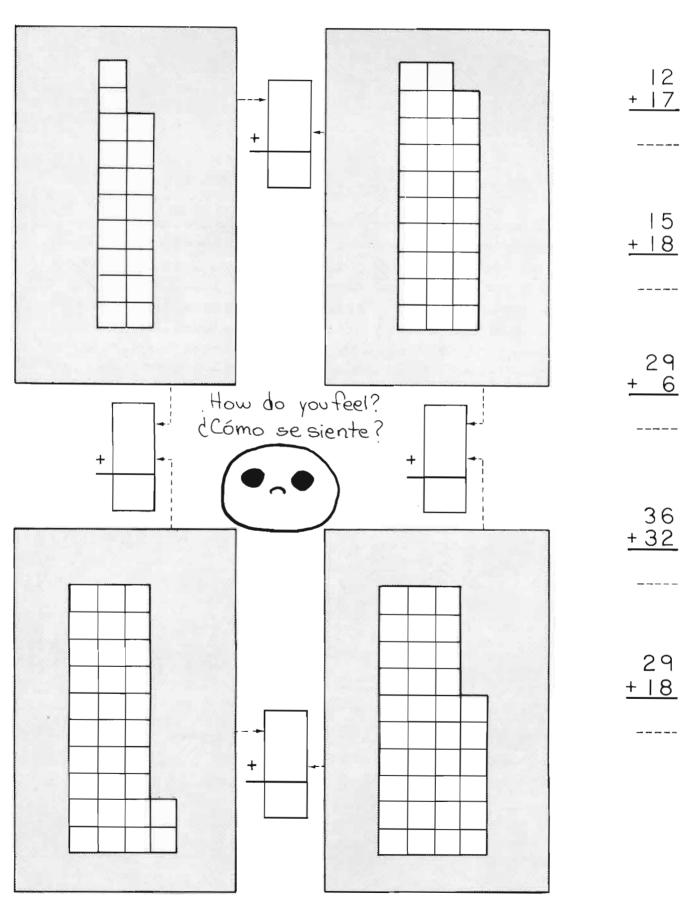








b. ____



Dear Parents,

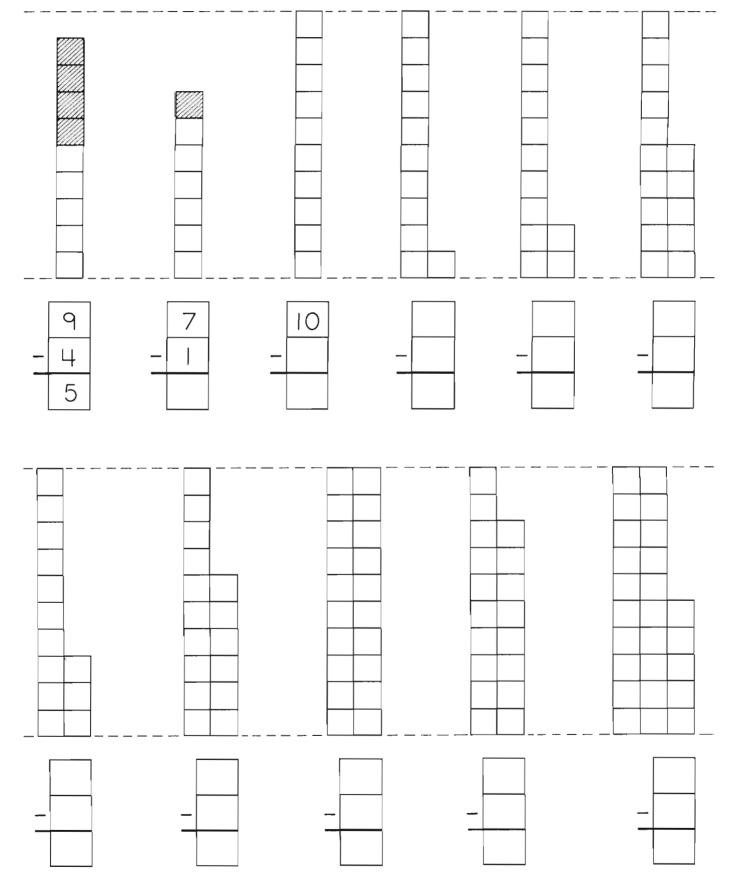
Your child has demonstrated the ability to add quite large numbers together with a high degree of accuracy. Perhaps the pictured squares are still being counted laboriously, one by one. Hopefully the "counting on" process will have been discovered by now, making the sum-finding faster. It won't be long until your child finds it faster to mentally add the stacks of ten blocks together, then the ones. A game can be made by trading ten loose beans for a solid "ten-stick".

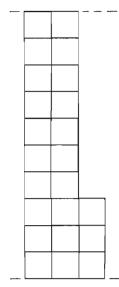
At any rate, the whole idea of the place value of numbers, "carrying" and "borrowing" is a very complicated thing for young children to learn. They must be given plenty of time and lots of counting with real objects. Working with dimes and pennies is an interesting way to help teach this understanding.

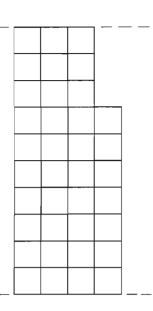
We know that one of the best ways to reinforce learning is for the learner to teach what was just learned to someone else. Your child's understanding will be promoted anytime you can assist that happening.

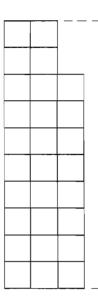
Subtraction involving large numbers is next. Help us keep your child encouraged and feeling successful!

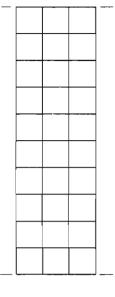
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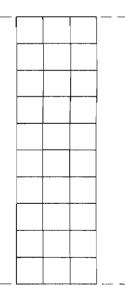


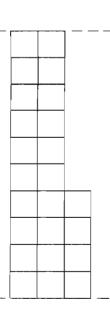


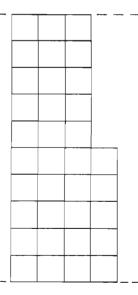


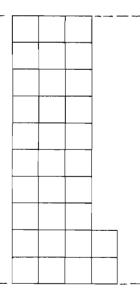


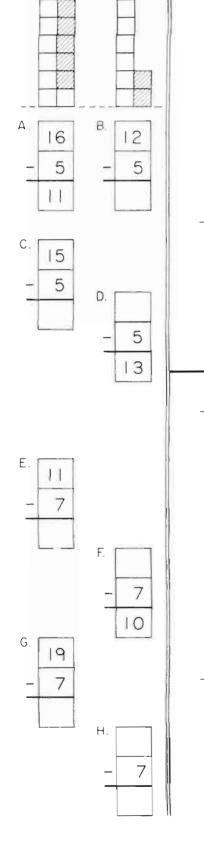


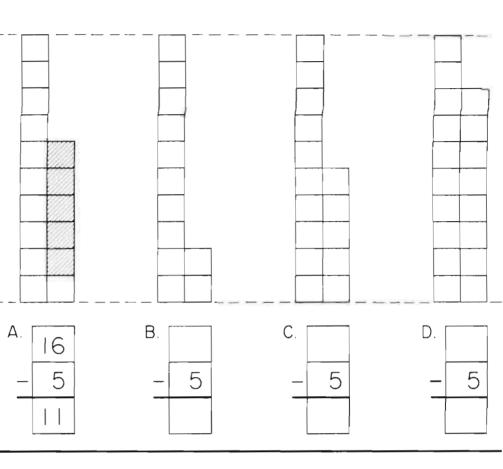


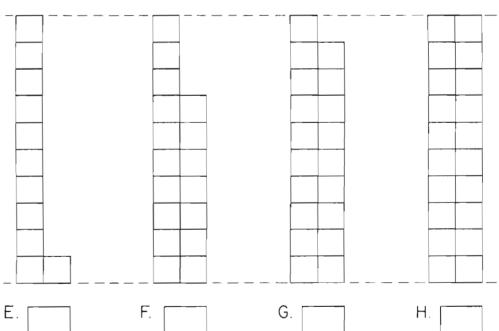


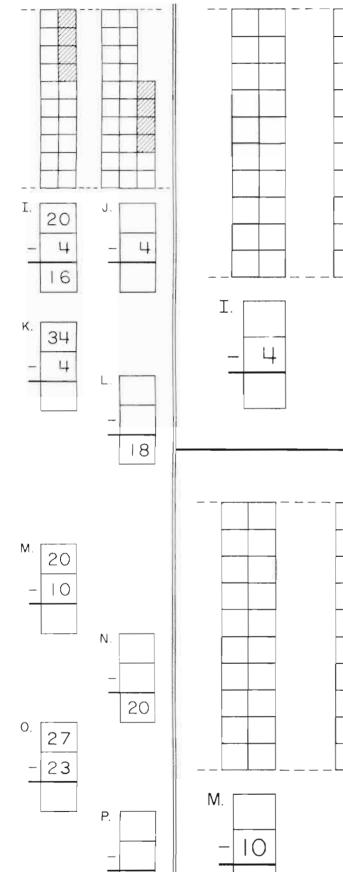


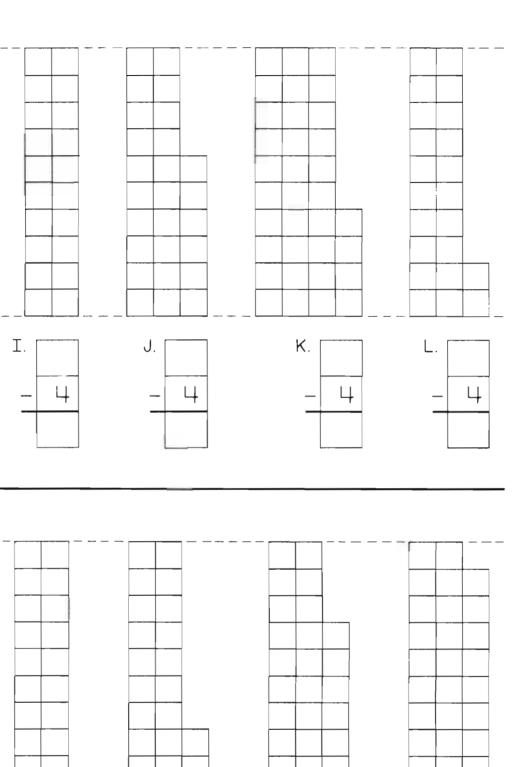


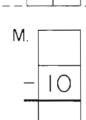


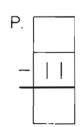


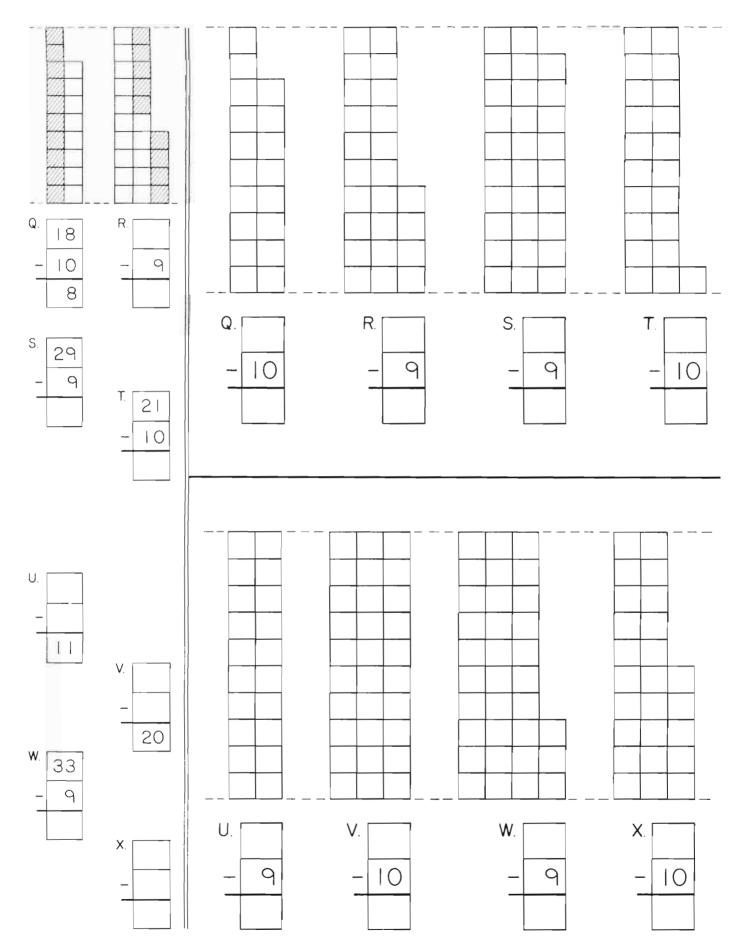


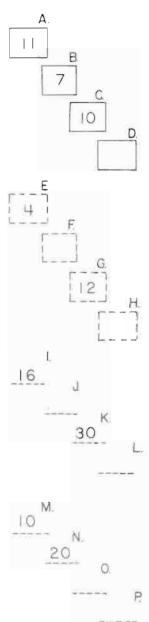


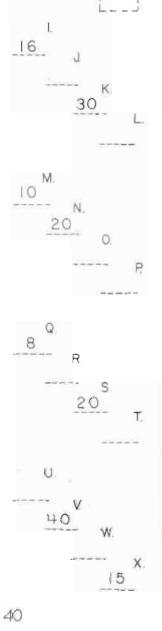


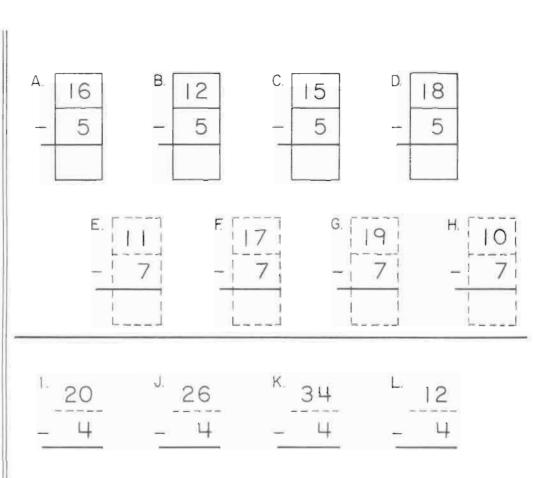


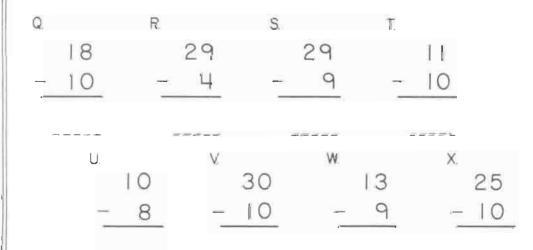


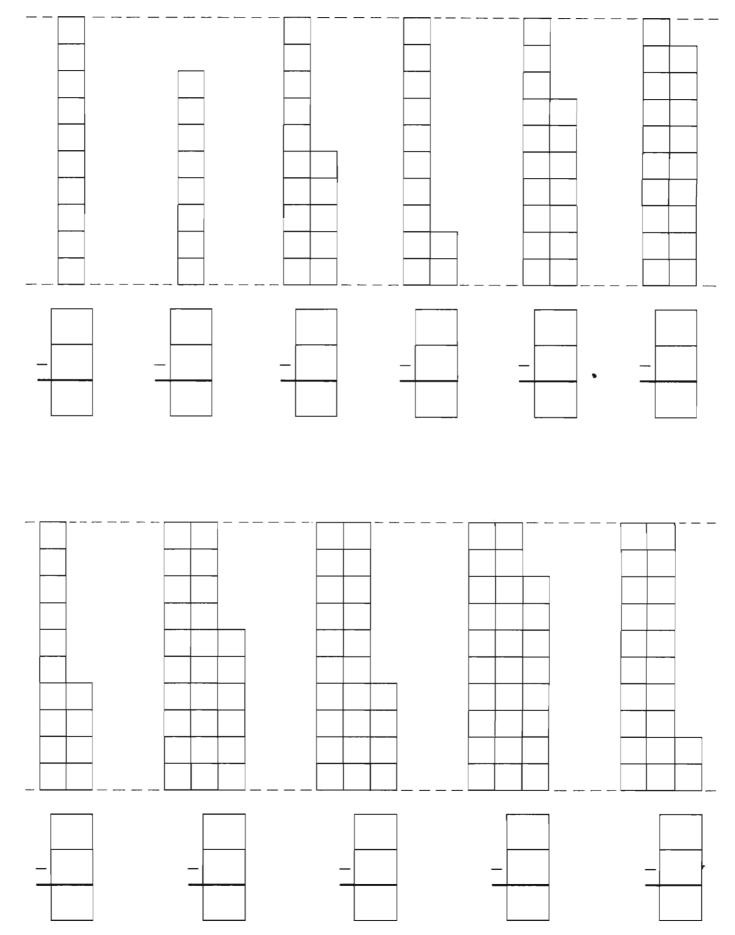


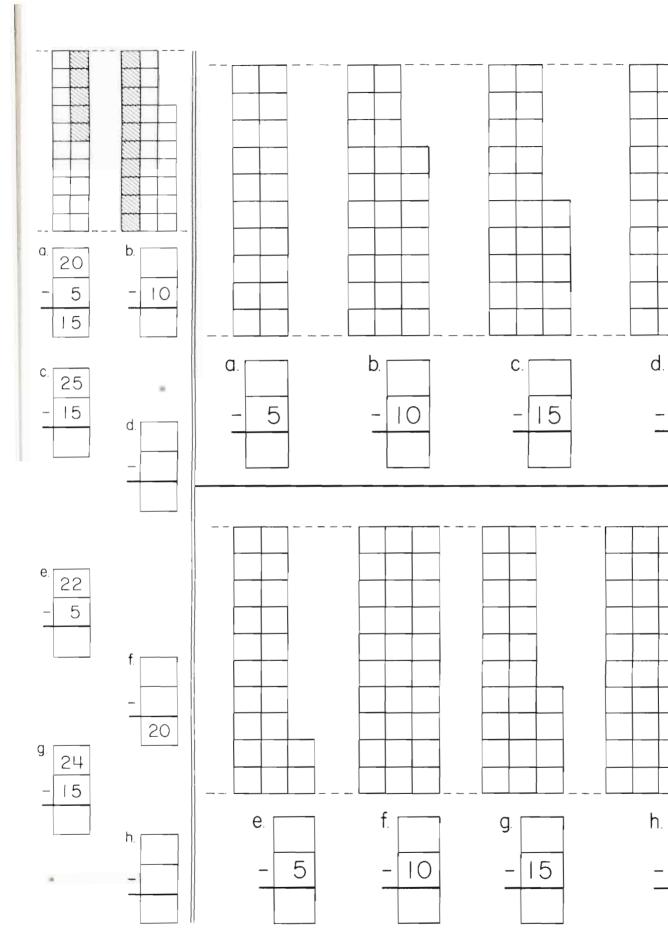


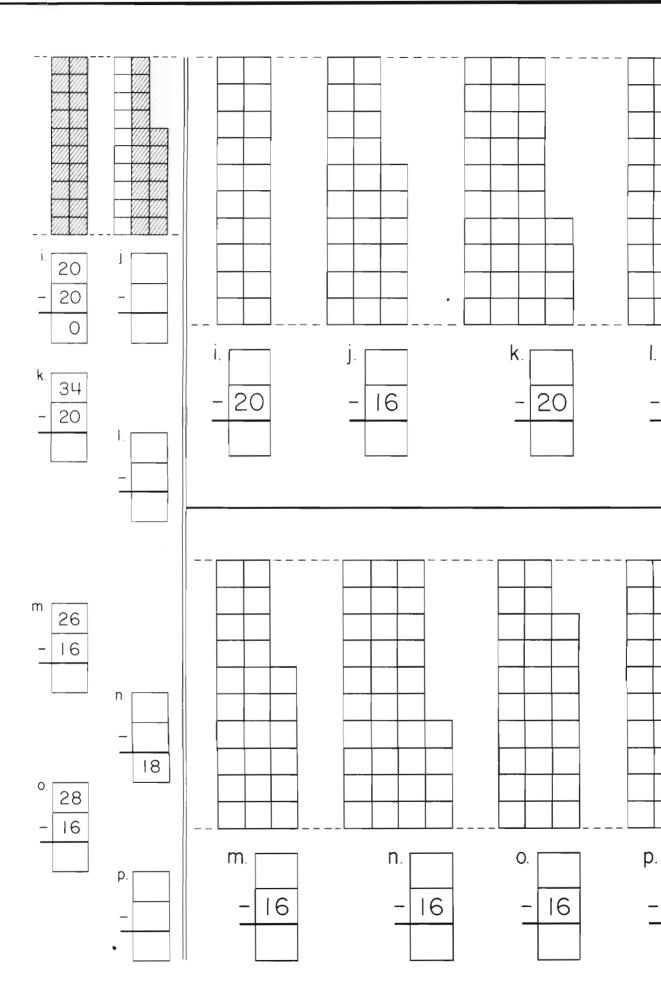


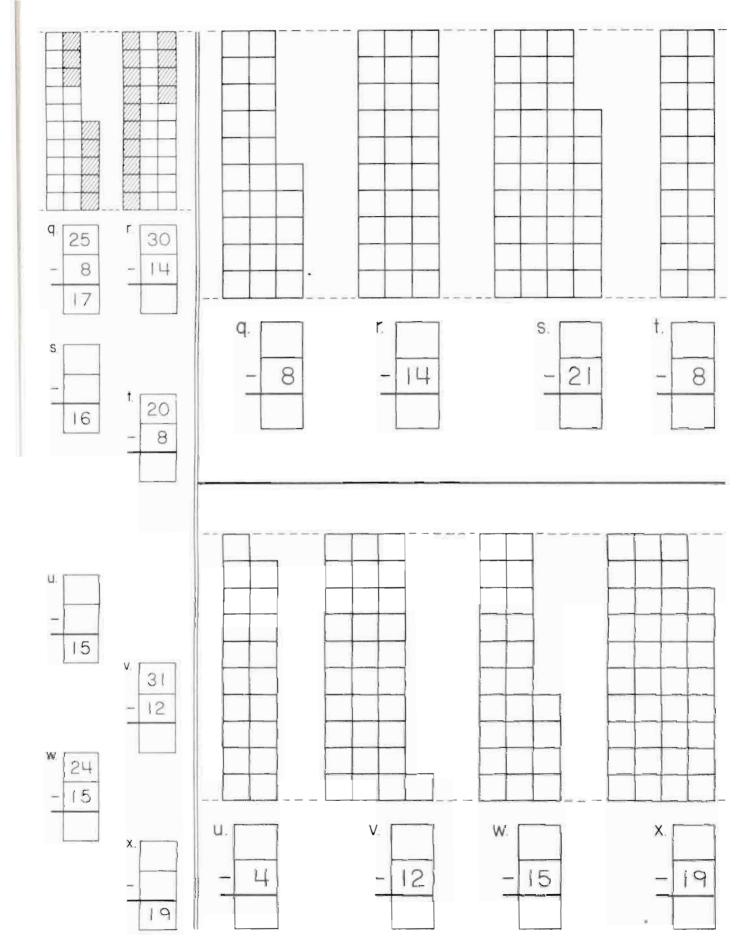


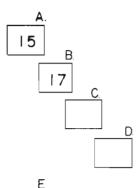


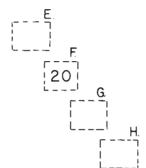


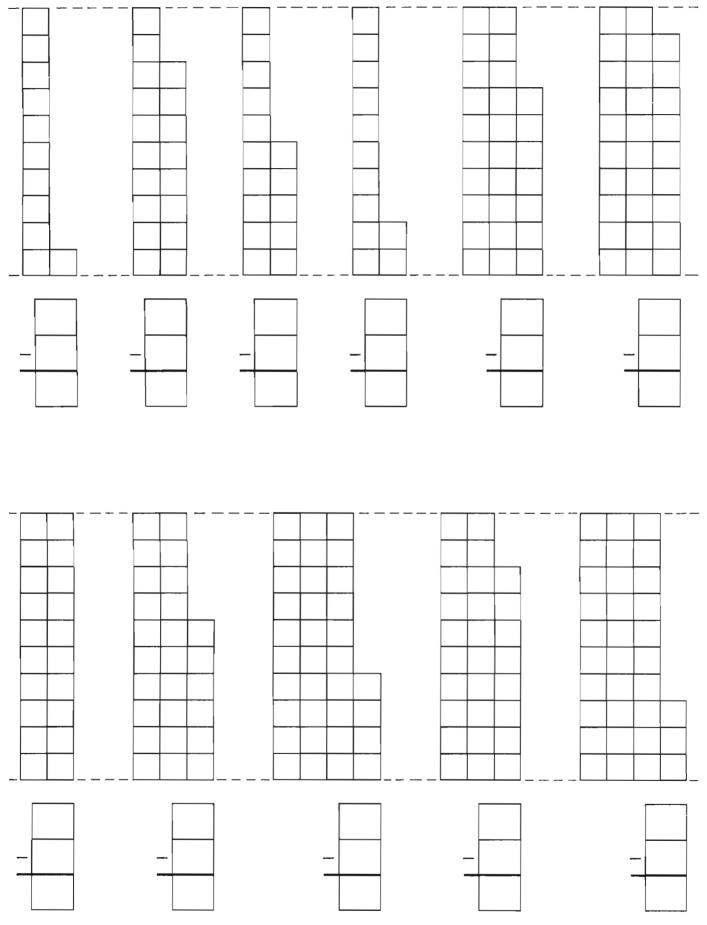


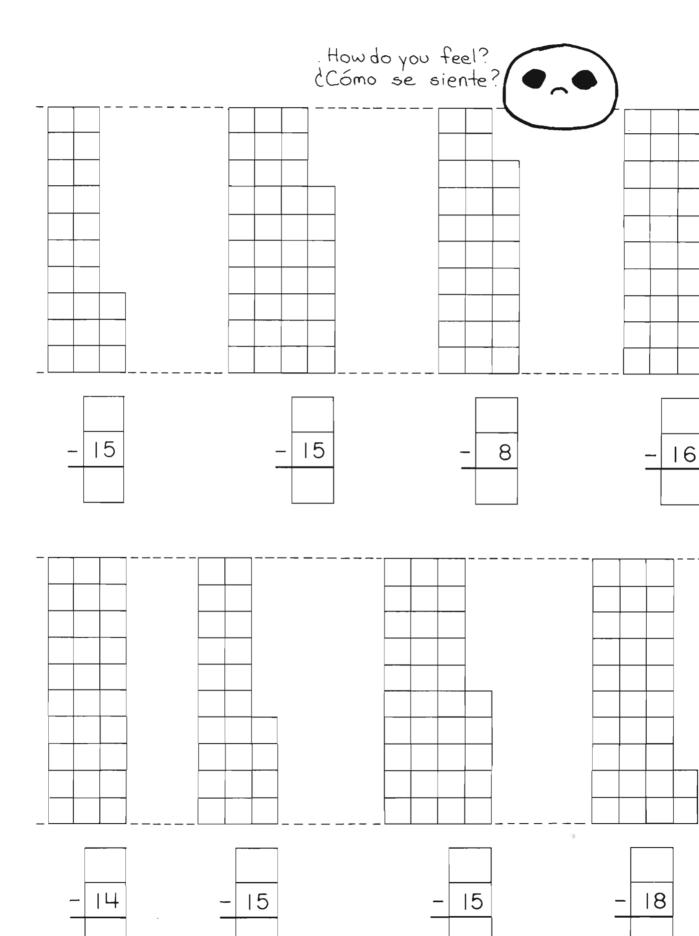












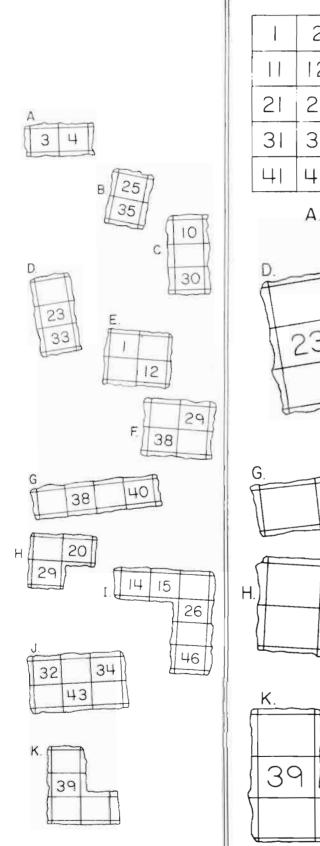
Dear Parents,

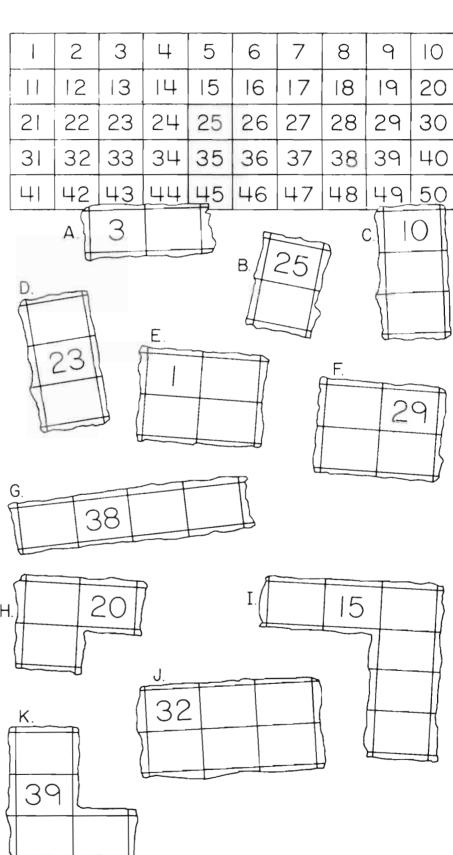
Given a set of blocks to count, your child can record how many there are, shade in the number of blocks to be taken away, count what is left over, and record this data. Isn't it amazing what rather complicated problems young children can solve if they are given real things or pictured things to count? Normally problems like this have been introduced at a much later time, by-passing the opportunity to count things, and throwing the child suddenly into the abstract world of manipulating numbers. It is here that many children have become lost, have decided that math is an unintelligible bore. Maybe it happened to you!

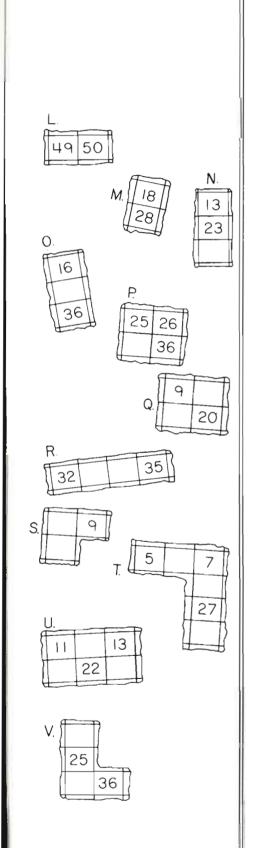
Help at home? Keep up the dominoes--still excellent for strengthening these operations. Keep up the praise!

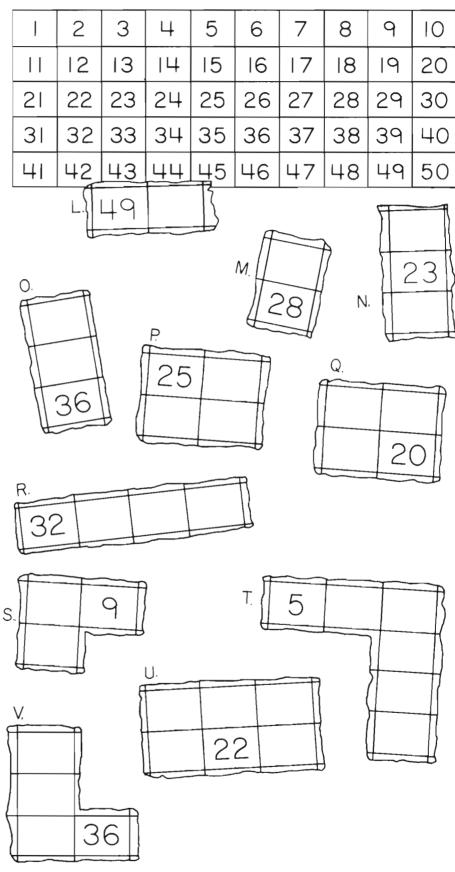
Supplying the missing numbers in a set of one hundred comes next. Your child will begin to see the number system as existing in sets of tens. Watch for the next few papers, and you will easily see what we are getting at. Can you think of a game to help teach this idea that is fun to do?

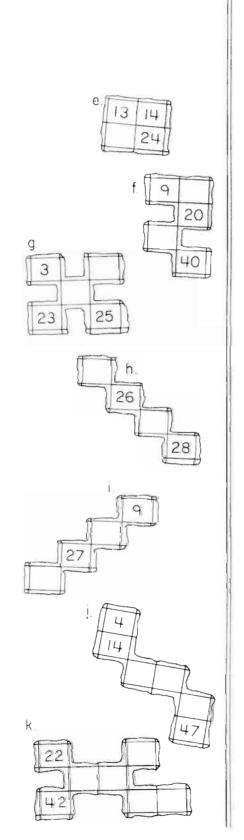
Sincerely,

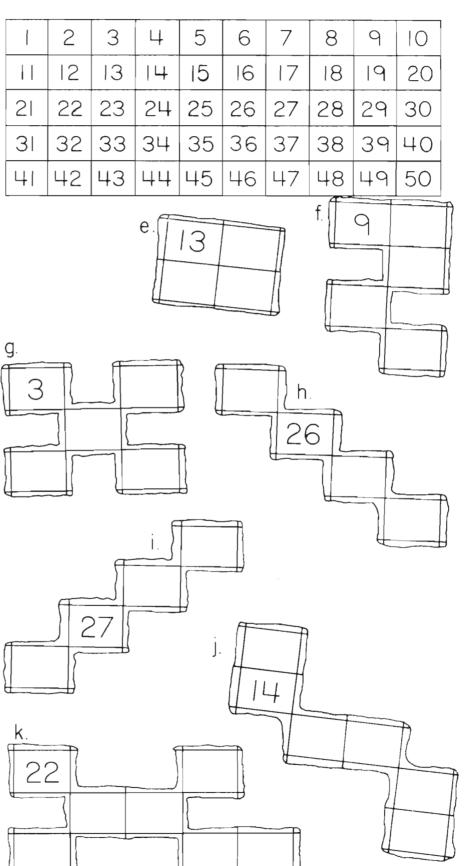


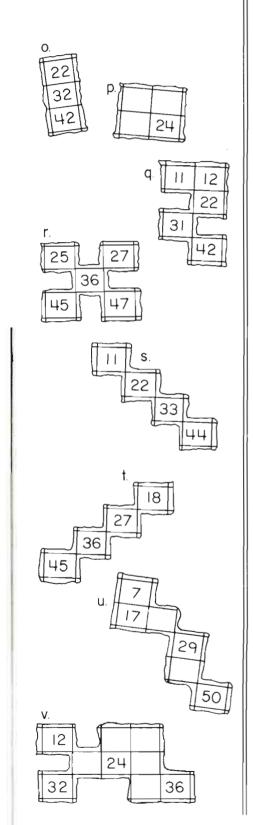


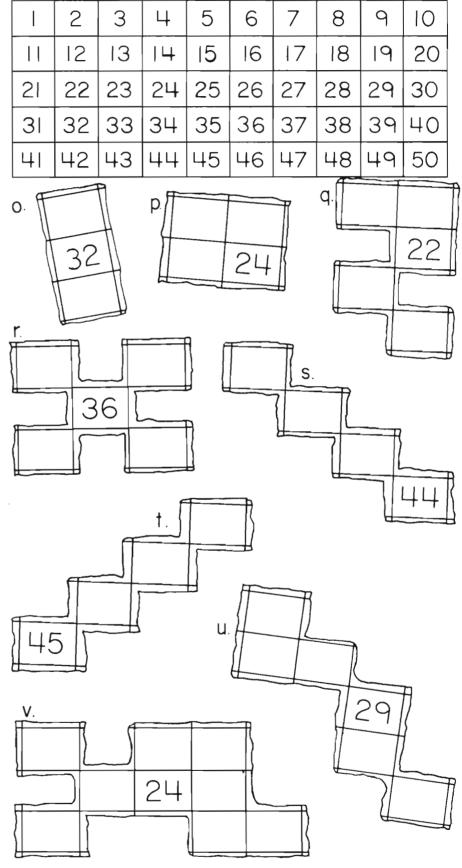


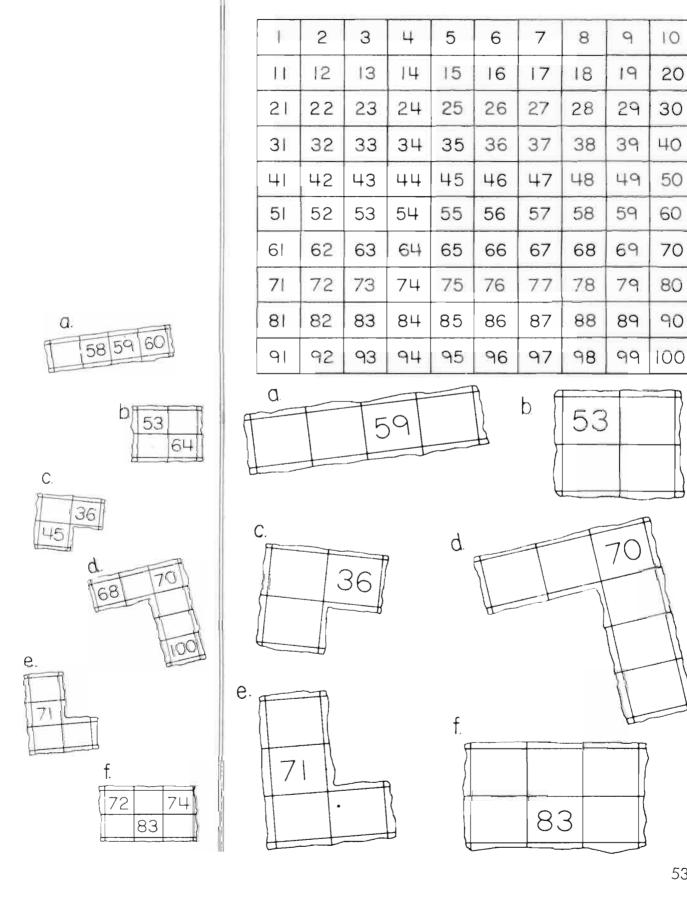


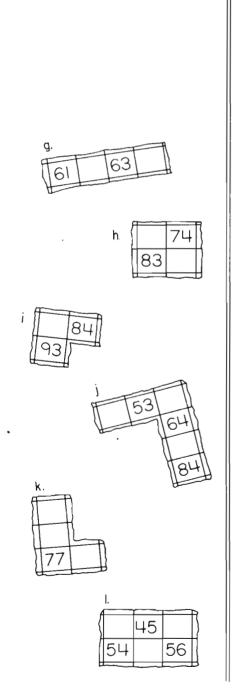




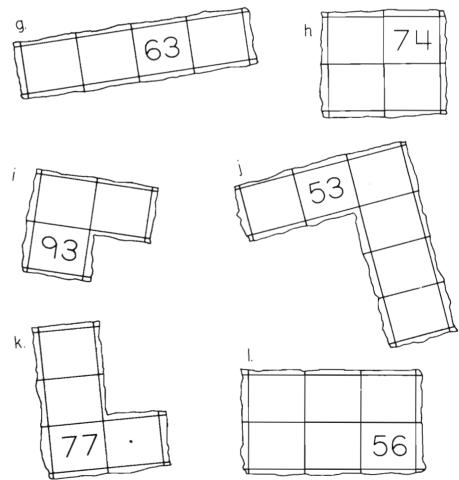


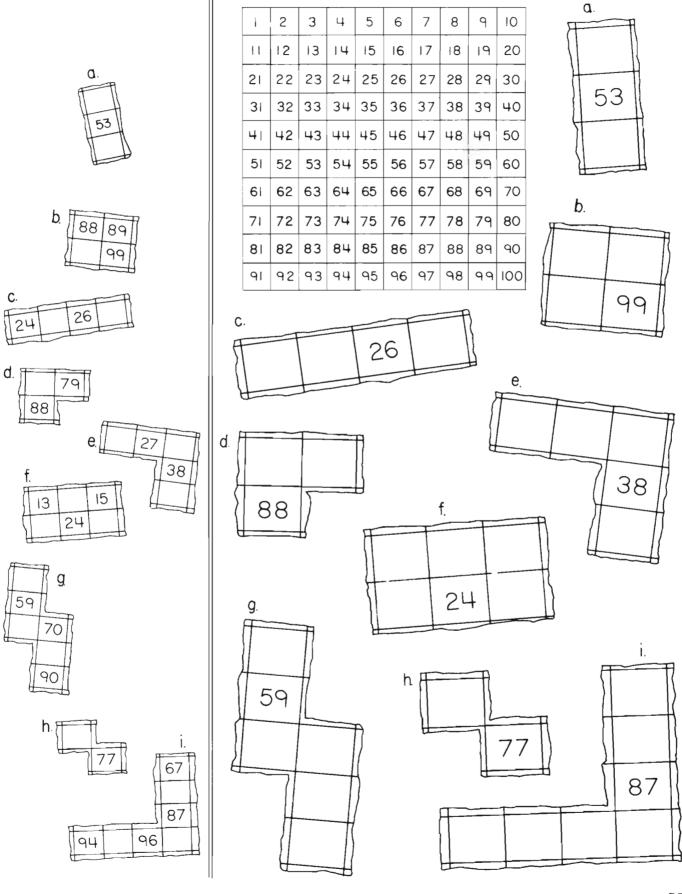


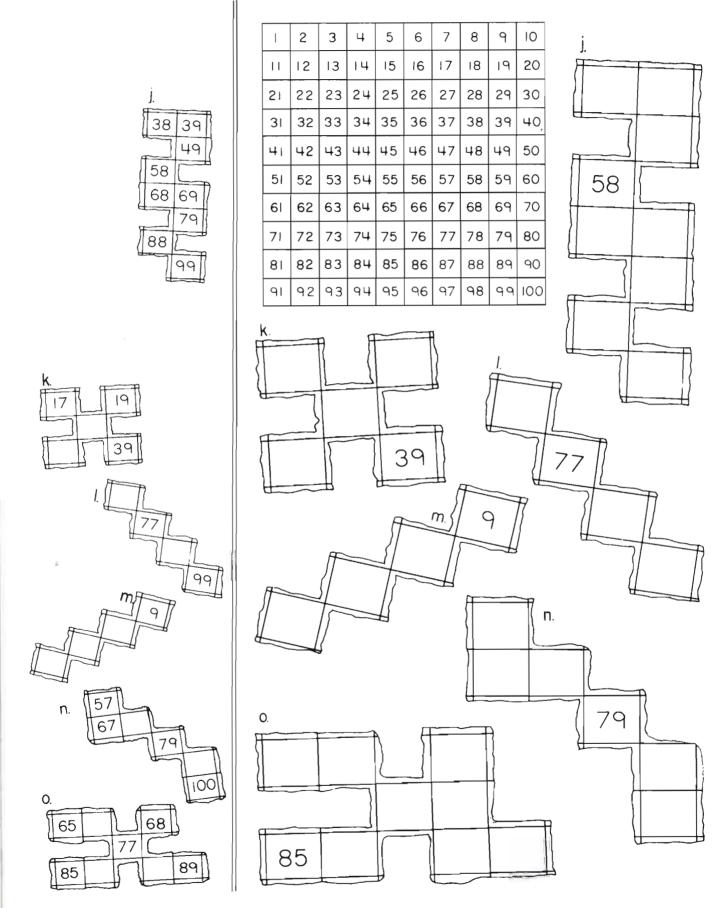




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-	21	22	23		25			28	29	30	
;	31	32	33	34	35	36	37	38	39	40	56/
L	+1	42	43	44	45	46	47	48	49	50	
;	51	52	53		55	56	57	58	59	60	
(61	62	63	64	65	66	67	68	69	70	
7	7 i	72	73	74	75	76	77	78	79	80	
8	31	82			85	86	87	88	89	90	
(۱۱	92	93	94	95	96	97	98	99	100	
					8	6		A			39
			7	4					7	7	
					}						How do you feel? ¿Cómo se siente?

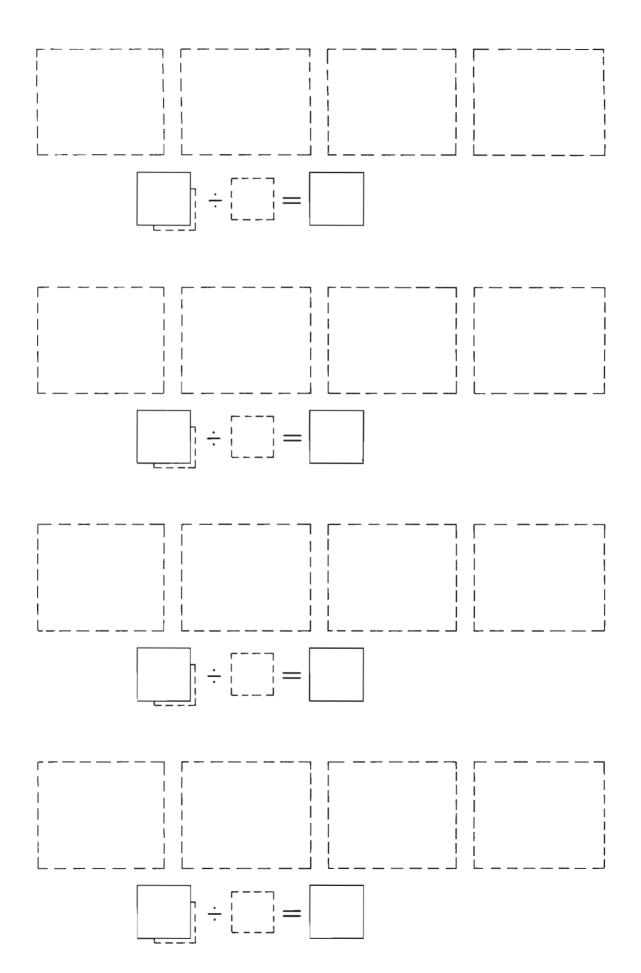
Dear Parents,

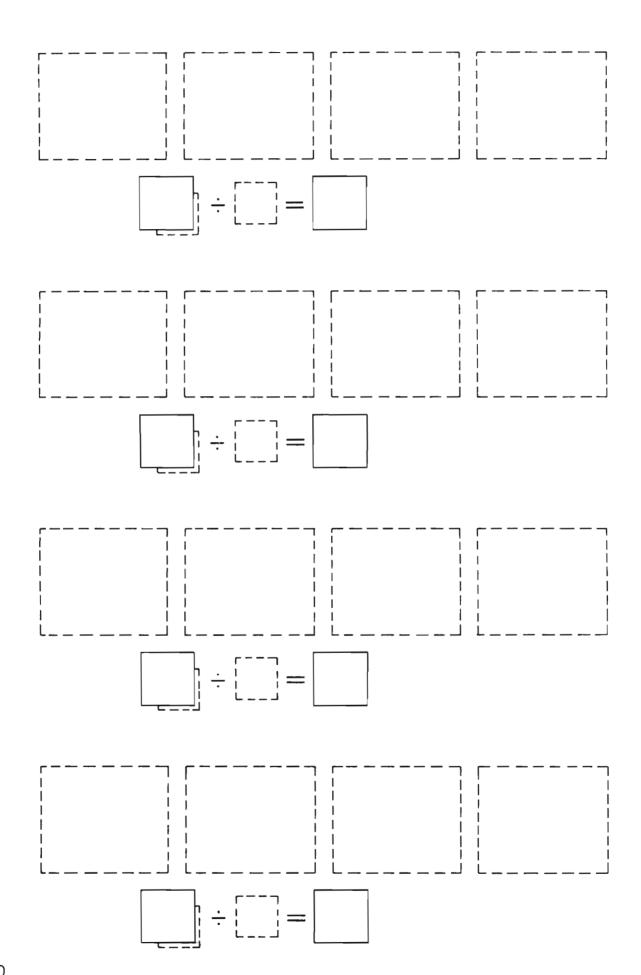
Your child is now able to do something we've seen much older children struggle with-supply the missing numbers in a set of one hundred. It is one thing to count to one hundred as in playing hide-and-seek; it is quite another to see what is missing in a written array! Congratulations are in order-this is a real accomplishment.

Next is division, the fast way to subtract. It will not be long now until your child knows how to do the four basic mathematical operations. Of course, children can do them all before coming to school, but now your child is able to write down what is found out.

We're sure you have already sensed that you can help further the sense of understanding by giving your child division chores around the house. How many cookies will each of three children get if there are a half-dozen?

Sincerely,

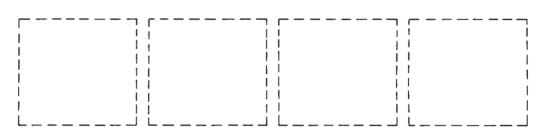


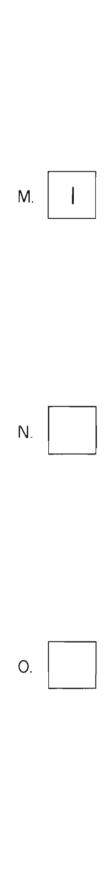










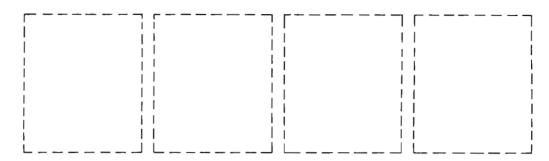


M.
$$\boxed{4}$$
 \div $\boxed{4}$ $=$ $\boxed{2}$ $=$ $\boxed{2}$ \div $\boxed{1}$ $=$ $\boxed{2}$ \div $\boxed{4}$ \rightarrow $\boxed{4}$

P.

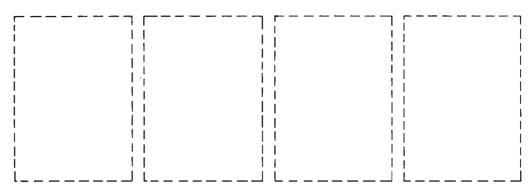
- А. Ц
- В. 5
- C.

- D. 3
- E. .
- F.



- A. 8 ÷ [2] =
- в. [O] ÷ [2] =
- c. $\begin{bmatrix} 12 \\ \end{bmatrix} \div \begin{bmatrix} 2 \\ \end{bmatrix} = \begin{bmatrix} 12 \\ \end{bmatrix}$
- - D. $\left[\begin{array}{c} 9 \\ \end{array} \right] \div \left[\begin{array}{c} 3 \\ \end{array} \right] = \left[\begin{array}{c} \end{array} \right]$
 - E. [15] ÷ [3] =
 - F. $\begin{bmatrix} 12 \\ \end{bmatrix} \div \begin{bmatrix} 3 \\ \end{bmatrix} = \begin{bmatrix} 12 \\ \end{bmatrix}$







G.
$$\begin{bmatrix} 2 \\ -1 \end{bmatrix} \div \begin{bmatrix} 2 \\ -1 \end{bmatrix} = \begin{bmatrix} -1 \\ -1 \end{bmatrix}$$

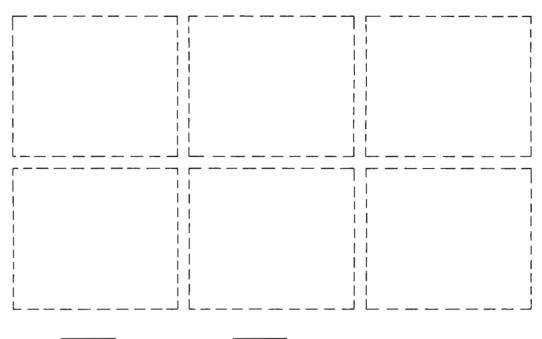
$$I. \quad \boxed{2} \div \begin{bmatrix} -1 \\ 4 \end{bmatrix} = \boxed{}$$



к. 3

4] ÷ [2] =

L.

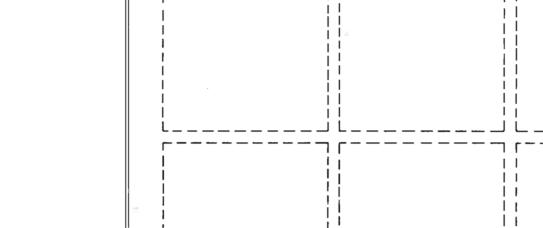


$$M. \quad \boxed{] \div \begin{bmatrix} 2 \\ -1 \end{bmatrix} = \boxed{ }$$

N.
$$\boxed{0} \div \boxed{5} = \boxed{ }$$

P.
$$\begin{bmatrix} 20 \\ \end{bmatrix} \div \begin{bmatrix} 2 \\ \end{bmatrix} = \begin{bmatrix} 1 \\ \end{bmatrix}$$

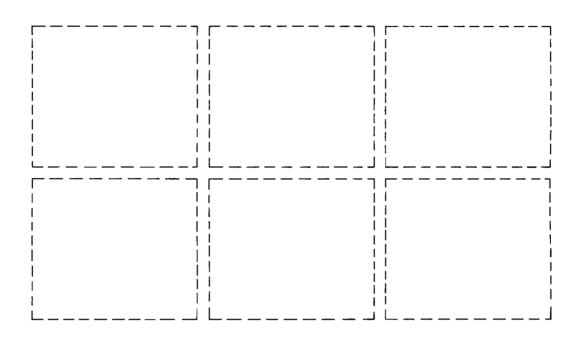
R.
$$\begin{bmatrix} 20 \end{bmatrix} \div \begin{bmatrix} 5 \end{bmatrix} = \begin{bmatrix} \end{bmatrix}$$





s.
$$\boxed{0} \div \boxed{5} = \boxed{}$$

$$x. \left[24\right] \div \left[\overline{6}\right] = \left[$$



$$\begin{bmatrix} 18 \\ \end{bmatrix} \div \begin{bmatrix} \overline{3} \\ \end{bmatrix} = \begin{bmatrix} \overline{} \\ \end{array}$$

How do you feel? ¿Cómo se siente?



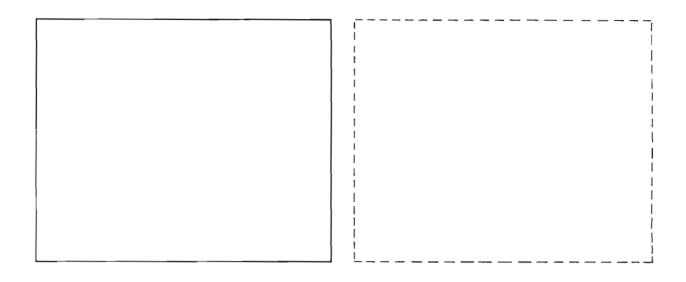
Dear Parents,

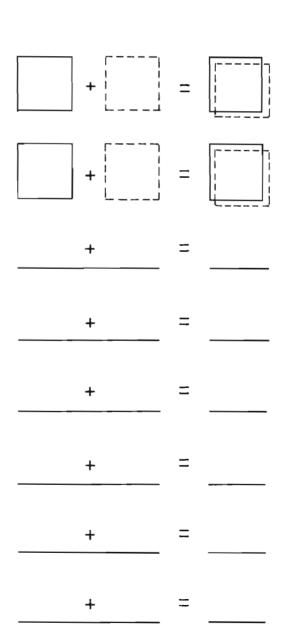
Now tell us the truth-did you know how to divide when you were six or seven? We didn't either. It's obvious from the back of this page that your child can divide (we didn't teach this-the real world did some time ago!) What is new and interesting is not that your child knows how to divide real objects into groups but that there is a demonstrated understanding and ability to record the results. So far we are only dealing with even numbers that don't have any "left over". We're sure your child knows about dividing with remainders-we just haven't taught how to record this unpleasant fact. If you've ever had nine children and seventeen cookies, you know exactly what we mean!

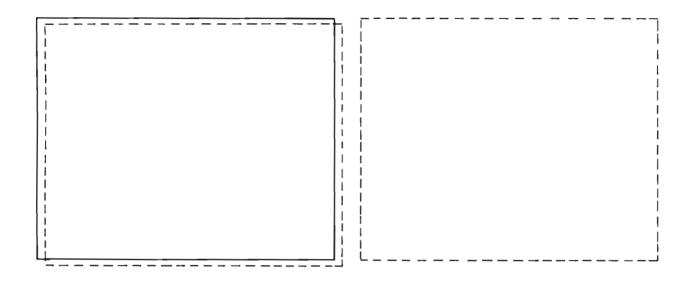
At any rate, your child now knows how to divide groups of objects and record the results--as long as there are no remainders. Now, since you know we couldn't do this at the same age(at least, we doubt it) don't you think your child deserves some very special kind of recognition and congratulations?

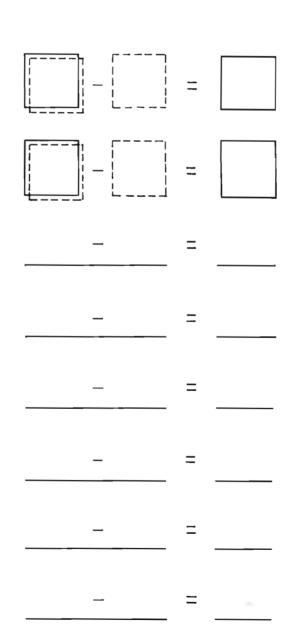
We do!

Sincerely,









A[[5]

C. _____

D. 15

E.____

F. 12

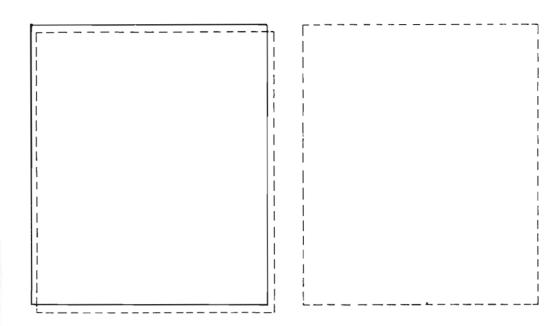
G.

H.____

c.
$$5 + 9 =$$

$$F = 6 + 8 =$$

$$G. \frac{9 + 7}{} =$$



How do you feel?



¿Cómo se siente?

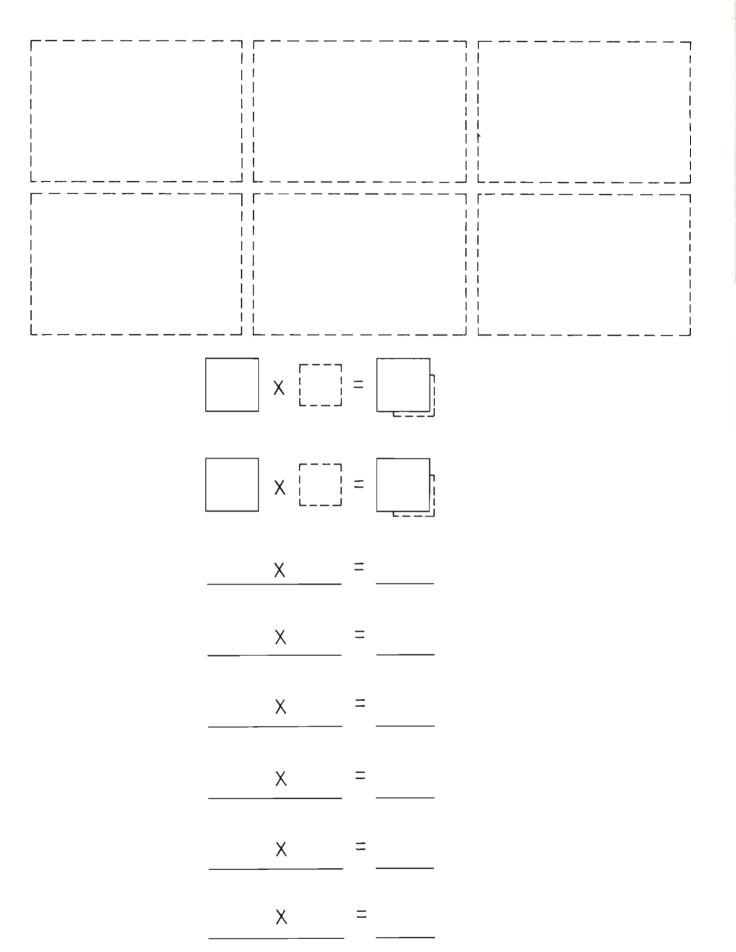
Dear Parents,

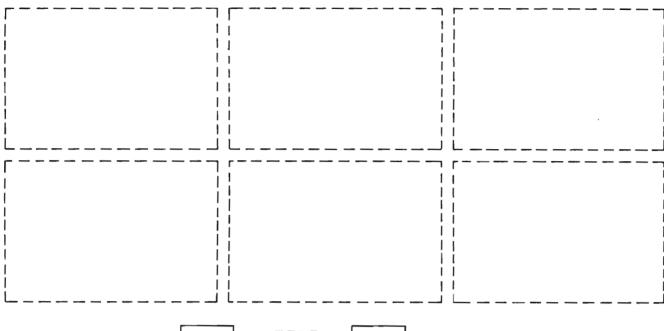
Well, here we are, almost to the end of the A-Level part of our math program. The check-up shows (on the reverse side of this sheet) that, indeed, your youngster can add and subtract quite large numbers and record the results with an extremely high degree of accuracy. Counters may still be used, but we know that there is understanding, there is success, and there is confidence. Unless we've made some serious mistakes, your child should really feel good about arithmetic.

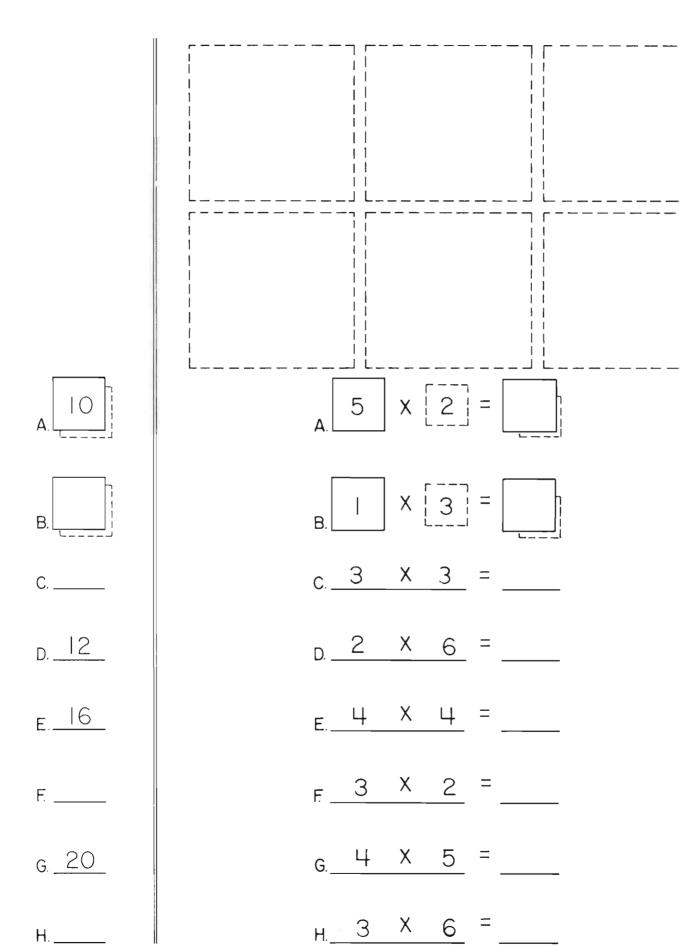
The last unit will give practice in multiplying and dividing. Remember that these operations traditionally are not taught until much later--often not until the child is eight or nine. You may be rightfully proud when your child can show you how to do these things and record the results! Be even more delighted if you sense an understanding of the relationship between addition and multiplication and between subtraction and division--the "short-cut" idea. Look also for an understanding of the relationship between addition and subtraction--putting together and taking away--and the same for multiplication and division. Don't be at all disturbed if you can't detect these understandings. They come slowly and can't be forced.

Again, we can't express our thanks for your support at home. That insures the success of your child!

Sincerely,









$$\begin{bmatrix} 5 \\ \end{bmatrix} \vdots \begin{bmatrix} 10 \\ \end{bmatrix} \div \begin{bmatrix} 2 \\ \end{bmatrix} = \begin{bmatrix} \\ \end{bmatrix}$$

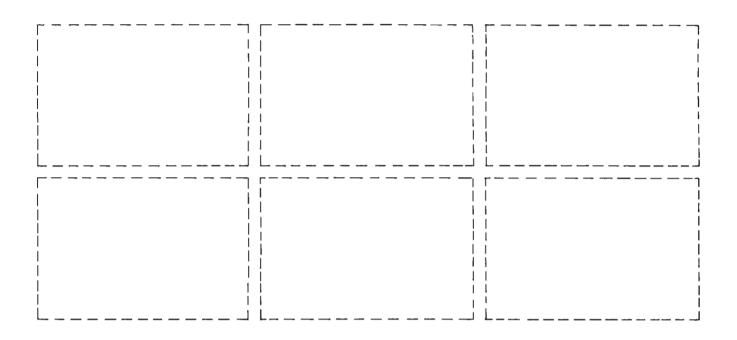
m.
$$16 \div 4 =$$

n.
$$6 \div 2 =$$

p.
$$18 \div 6 =$$

- i. <u>5</u>

- m. 4
- n. 3
- p. __3



$$4 \times 5 =$$

$$3 \times 4 =$$

$$5 \times 5 =$$

$$4 \times 4 =$$

$$4 x 6 =$$

How do you feel?



¿Cómo se siente?

Dear Parents,

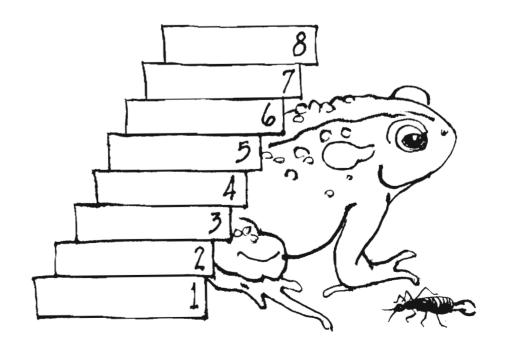
It is with a great deal of pleasure that we send you this last letter with proof on the back of your young child's success in dealing with the recording of multiplication and division, with counters. This is not done in the usual math program. It only demonstrates how much children already know, but never knew how to write down.

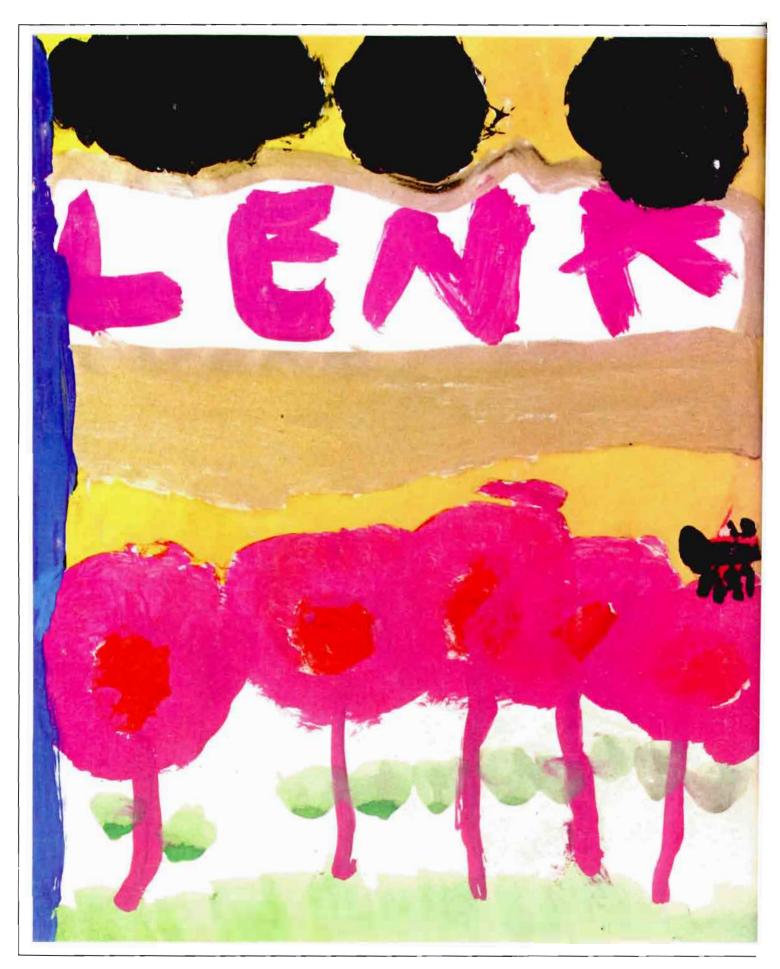
This is the end of the A-Level Computation program. To review quickly, your child now knows: how to record all four basic operations with numbers; how to write all of the numbers to one hundred; hopefully how to count on-involving an understanding of counting by tens; and, is beginning to have practice in understanding the place value system of numbers.

This is a great deal for your young one to have dealt with this year. Your careful help and support has meant a great deal. From now on, and for quite a while, there will be nothing "brand new" to learn. We will just help your child to strengthen and extend the learnings already mastered.

We are very proud of your child. Our hope is to keep the process of learning about numbers a fun, exciting, and happy one. There is no reason for it to be otherwise.

Sincerely,





this book belongs to