Activities for Learning, Inc.

RightStart™ Mathematics

by Joan A. Cotter, Ph.D.

SUBTRACTION LESSON EXCERPTS

Transition Lessons

Special thanks to Dustin Sailer who restructured and updated this manual.

Printed in the United States of America

www.ALabacus.com

For more information:
info@ALabacus.com

Supplies may be ordered from:
www.ALabacus.com
order@ALabacus.com

Activities for Learning, Inc.
PO Box 468
321 Hill St.
Hazelton, ND 58544-0468
USA

888-775-6284 or 701-782-2000

701-782-2007 fax

ISBN 978-1-931980-50-0

October 2010

Lesson T28 (1 or 2 days)

Subtraction with Bead Trading

OBJECTIVES

1. To review entering quantities on side 2 of the abacus
2. To practice subtracting 4-digit numbers on the abacus

MATERIALS

Abacus
Worksheet T10, Subtracting on the Abacus (answers on pg. 64)

WARM-UP

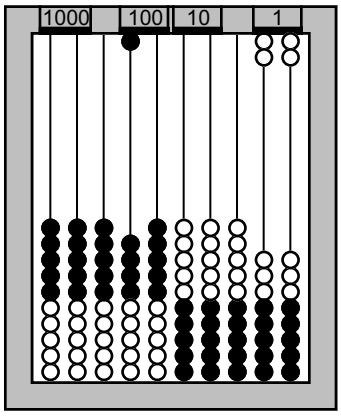
Ask the child to play the Continue the Pattern game; ask what comes next 12, 14, 16 [18]; 100, 200, 300 [400]; 55, 60, 65 [70]; 130, 140, 150 [160]; and 3, 6, 9 [12].

Ask the child to add mentally, 48 + 48 [88, 96], 36 + 64 [96, 100], 1000 + 77 [1077], and 69 + 77 [139, 146, or 147, 146].

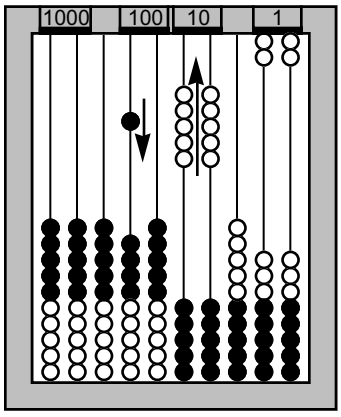
Ask the child to add 876 voters plus 728 voters. [1604 voters]

ACTIVITIES

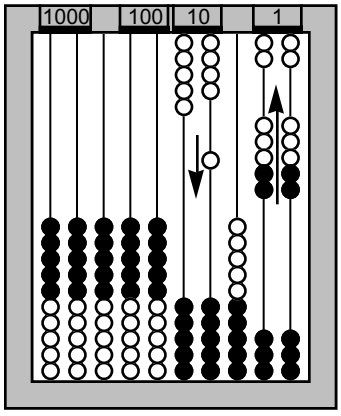
Trading from 100. Enter 104 on the abacus and ask the child how he could subtract 6. Let him think about it. If necessary, lead him to a solution by asking questions such as, How could you get some tens? The sequence is shown below. After the subtraction, ask him to read him answer to decide if it makes sense.



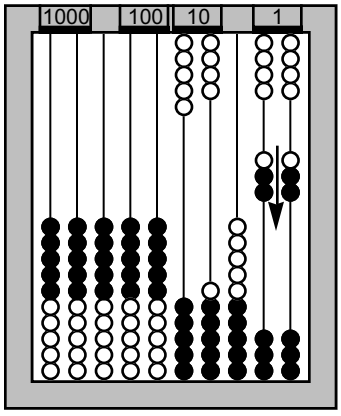
The abacus displaying 104 for the problem 104 – 6.



Trading 10 tens for 1 hundred.



Trading 10 ones for 1 ten.



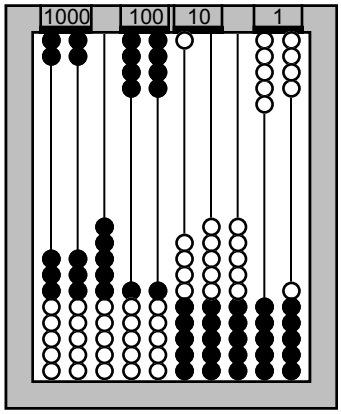
Subtracting the 6 to give 98.

Ask him to enter 3025 and to subtract the following: 100 [2925], 42 [2883], 9 [2874], 1000 [1874], 96 [1778], and 101 [1677].

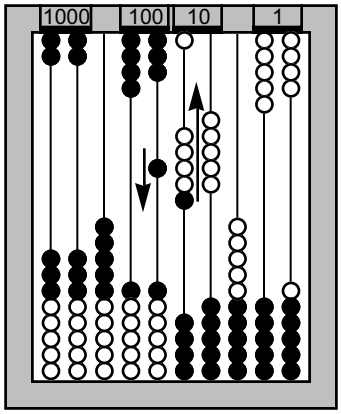
Subtracting. Now write

4819
– 2637
[2182]

Ask the child to enter the minuend [4819] on the abacus. See the figure below on the left. Note that numbers are entered from left to right.



The abacus displaying the minuend, 4819.



Preparing the minuend for subtracting by performing a trade, which is shown by underlining.

Ask him which numbers he started with when adding on the abacus or on paper. [ones, or the right] Tell him that in subtraction he can start at the other end with the highest denomination, at the left near the minus sign. You might tell him that this is a secret way to subtract that even most adults do not know.

Note: Researcher Karen Fuson found that children find subtraction easier if they do all the trading first, and not switch back and forth between trading and remembering the facts.

Then explain that we want to do any trading first before we do any subtracting. Ask where he will start with the example shown. [thousands]

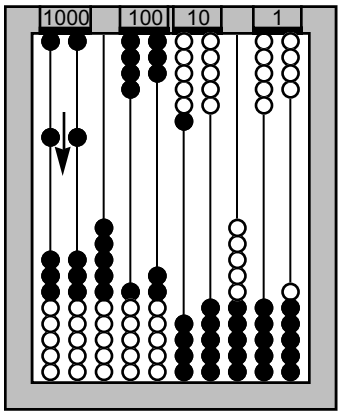
Do we have enough thousands to subtract? [yes] How do we know? [4 thousands is more than 2 thousands]

Do we have enough hundreds to subtract? [yes] How do we know? [8 hundreds is more than 6 hundreds]

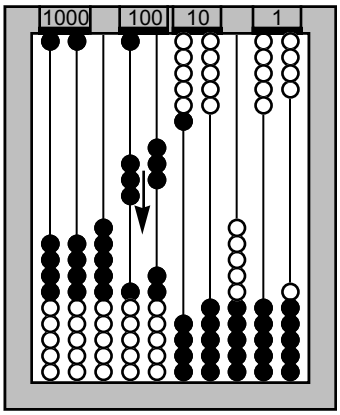
Do we have enough tens to subtract? [no] How do we know? [1 ten is less than 3 tens] Ask the child to do the trade so there will be enough tens. Also tell him that we will draw a line under the hundreds number to show the trade. Draw the line under the 8. It is a reminder that we used 1 hundred for trading. The underlining will help in the future when the abacus is not used.

Repeat for the ones. [no trading necessary] See the previous figure on the right showing the preparation.

Now the subtraction can begin. See the 4 figures on the next page. First the 2 thousand is subtracted, giving 2 thousand. Record the results before continuing. Next the 6 hundred is subtracted. Record the answer. Likewise, the tens and ones are subtracted and recorded as shown on the next page.

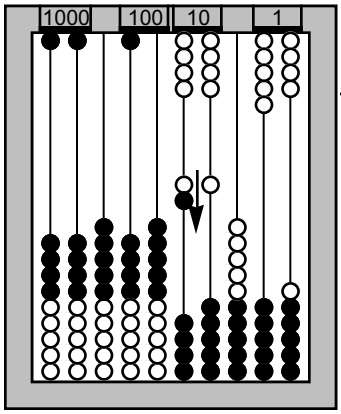


Subtracting 2 thousand.

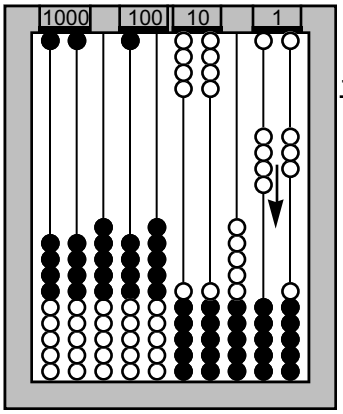


Subtracting 6 hundred.

It is extremely important that the child writes down his results as he performs each step in order to understand the procedure and to become independent of manipulatives.



Subtracting 3 tens.



Subtracting 7 ones.

Note: It is not necessary for all children to do all of the 8 problems with an abacus. If the child is confident in the process and understands, they can continue without the abacus.

Worksheet. Give the child Worksheets T10. Explain that he is to do them in order. However, he must check to be sure each problem is correct before going on to the next one. The problems and solutions are shown below.

1. 3982 – 1429 **2553**	2. 6949 – 2785 **4164**
3. 5157 – 3617 **1540**	4. 6651 – 4928 **1723**
5. 9614 – 5146 **4468**	6. 8157 – 6561 **1596**
7. 6512 – 1113 **5399**	8. 3339 – 1377 **1962**