

A *Activities for Learning, Inc.*

RIGHTSTART™ MATHEMATICS

by Joan A. Cotter, Ph.D.

**SIMPLE SUBTRACTION
LESSON EXCERPTS**

TRANSITION LESSONS

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

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Lesson T24

Subtracting by Going Up

- OBJECTIVES**
1. To write subtraction equations
 2. To solve subtraction equations by going up

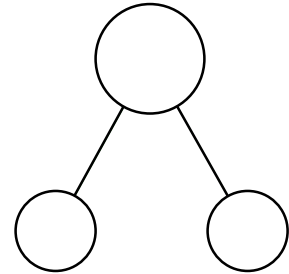
MATERIALS Abacus
Subtraction Strategies (Appendix pgs. 6-7) as needed
Subtraction practice sheets, as needed
Worksheet T7, Subtracting by Going Up

WARM-UP Ask the child to add $2937 + 6428$ [9365].

ACTIVITIES Draw a part-whole circle shown right. Explain that the larger circle is the whole and the smaller circles are the parts.

Note: To help the child develop a broader understanding of subtraction, the going up procedure is discussed first. Also research has shown it to be easier for a child.

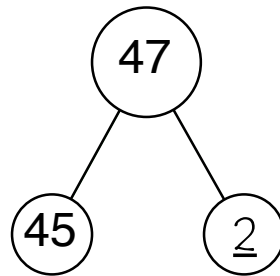
Problem 1. Give the child this problem. Jack and Jill are cousins who live in different states. They want to find out who is taller and how much taller. Jack is 45 inches tall and Jill is 47 inches tall. Who is taller and how much taller? [Jill, 2 inches]



Part-Whole circle.

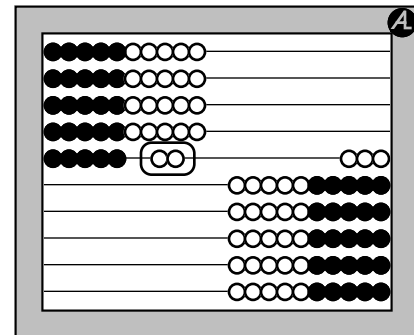
After the child describes how he solved the problem, ask him if it makes sense to him to write the numbers in a part-whole circle set and to write the equation. If he writes the addition equation, ask if he could also write the subtraction equation. Ask him to write them in his journal.

You might also enter 45 on an abacus, and ask the child to think in his mind how many more are needed to have 47. [2] See the figures below.



$$47 - 45 = 2$$

The Jack and Jill problem of comparing 47 and 45.



Visualizing what is needed with 45 to make 47. [2]

Problem 2. Repeat the steps for the following problem. Anna has 75¢ and Charles has 80¢. How much more money does Charles have? [5¢] Ask the child to imagine the abacus in his mind to find the answer. Ask him to write the equation [$80 - 75 = 5$] in his journal.

Problem 3. Jamie has read 13 pages and wants to read to the end of the chapter, which is 17 pages long. How many more pages does Jamie need to read? [4 pages]

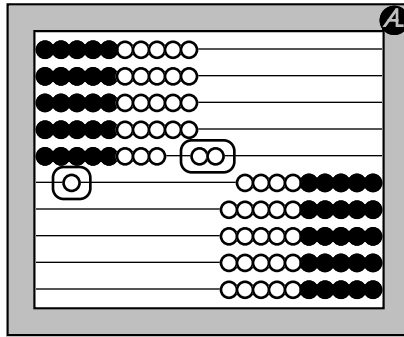
Again ask the child to solve the problem and to write the equation. [$17 - 13 = 4$]

Practice. Write the following equation

$$26 - 24 =$$

and ask the child how he solved it [2]. Emphasize going up from 24 to 26. Ask him to put the abacus into his mind, then to enter 24, and to see how many more he must enter to get to 26.

Repeat for 51— 48. [3] Here emphasize going from 48 to 50, which is 2, and then going from 50 to 51, for a total of 3. See the figure below.



Visualizing what is needed with 48 to make 51. [2 to make 50 and 1 more to make 51]

Repeat for 62 – 59 [3] and 31 – 27 [4].

Worksheet T7. The worksheet is to be done with an abacus; be sure he uses the going up procedure.

The problems and solutions are as follows.

| | |
|----------------|----------------|
| $10 - 8 = 2$ | $13 - 10 = 3$ |
| $11 - 9 = 2$ | $60 - 56 = 4$ |
| $31 - 29 = 2$ | $42 - 38 = 4$ |
| $95 - 90 = 5$ | $19 - 15 = 4$ |
| $76 - 72 = 4$ | $12 - 9 = 3$ |
| $49 - 47 = 2$ | $52 - 49 = 3$ |
| $100 - 99 = 1$ | $90 - 80 = 10$ |
| $88 - 85 = 3$ | $70 - 62 = 8$ |
| $29 - 25 = 4$ | $30 - 24 = 6$ |
| $9 - 7 = 2$ | |

Practice sheets. There is a list of Subtraction strategies on Appendix pgs. 6-7. Use them along with the subtraction practice sheets located in the back of the child's worksheets to reinforce the concept of subtraction, or if more review is needed. Answers are located in the back of this manual. You can make copies of the practice sheets if more practice is needed. Games should also be played to reinforce these concepts.

Lesson T25 (2 days)

Subtracting Tens and Fives

- OBJECTIVES**
1. To subtract tens and fives
 2. To play the Subtraction to Zero game

MATERIALS Two abacuses, if available, or an abacus plus an abacus tile
Corners™ cards
Worksheet T8, Subtracting Tens and Fives

WARM-UP Ask the child to say the multiples of 10 backward starting at 150.
[150, 140, . . . 10]

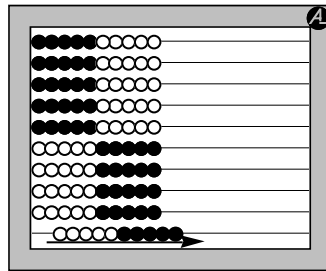
Ask the child to say the multiples of 5 backward starting at 125.
[125, 120, 115, . . . 5]

Ask the child to add $3916 + 3675$ [7591].

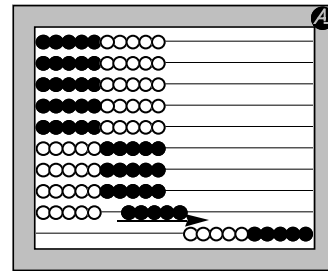
ACTIVITIES

Note: Subtraction in general is discussed before any attention is paid to learning the facts and strategies of subtraction.

Problem 1. Ask the child to model the following problem on the abacus to show the subtractions. Jeremy is attending a community fair. He has a dollar to spend. First he spends 10 cents. How much does he have left? [90¢] See the left figure below.

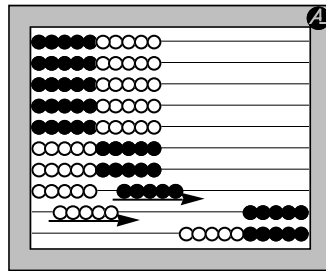


Subtracting 10¢ from a dollar.

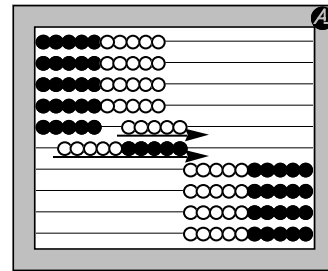


Subtracting 5¢ from 90¢.

Next Jeremy spends 5¢. How much does he have left? [85¢] See figure above. Continue with Jeremy's spending; 10¢, [75¢] (see figure below) another 10¢, [65¢] only 5¢, [60¢] now 15¢, [45¢] (see figure below) 10¢ again, [35¢] and lastly 15¢ [20¢].



Subtracting 10¢ from 85¢.



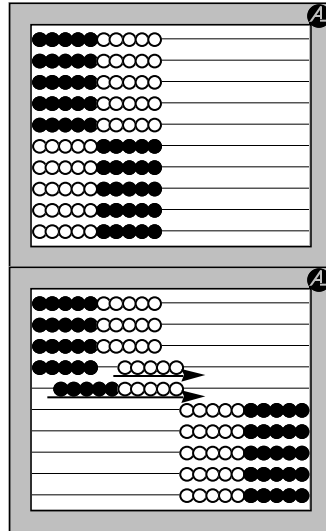
Subtracting 15¢ from 60¢.

Problem 2. This time ask the child to do the work in her head. Tell her, Jennifer also had a dollar to spend at the fair. First she spends 20¢; what does she have left? [80¢] Next she spends 15¢. [70, 65¢] Ask the child how she did it. Emphasize first subtracting the 10 and then the 5.

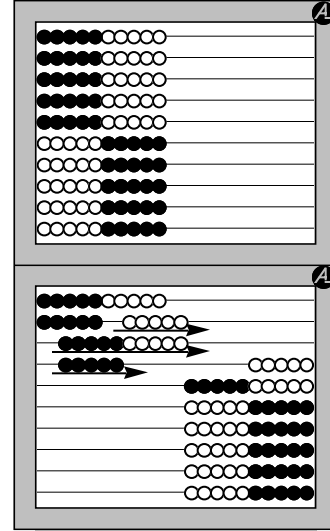
Jennifer now spends another 5¢ [60¢] and then 15¢ [50, 45¢] and another 15¢ [35, 30¢]. If needed remind her to subtract the 10, then the 5.

Problem 3. Expand the Jeremy problem from above. This time he has 2 dollars to spend. Use two abacuses to show the expenses. First he spends 50¢ [\$1.50], then 15¢ [\$1.35], then 20¢ [\$1.15], then 10¢ [\$1.05], and another 10¢ [95¢].

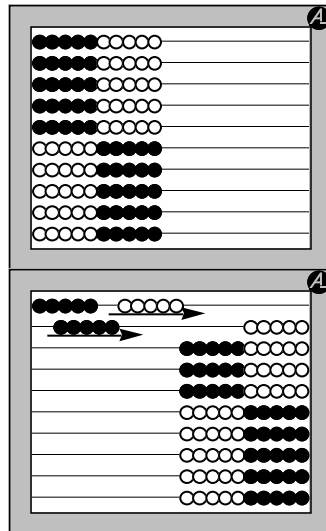
Ask the child to show the subtractions on two abacuses as shown in the figures below.



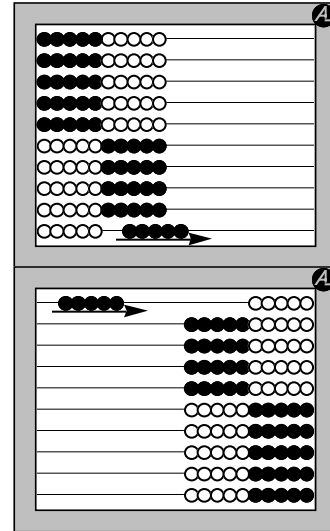
Two abacuses used to subtract
\$1.50 – \$0.15 leaving \$1.35.



Two abacuses used to subtract
\$1.35 – \$0.20 leaving \$1.15.



Two abacuses used to subtract
\$1.15 – \$0.10 leaving \$1.05.



Two abacuses used to subtract
\$1.15 – \$0.10 leaving 95¢.

| | |
|--------------|----------------|
| 75 – 5 = 70 | 100 – 5 = 95 |
| 40 – 5 = 35 | 110 – 5 = 105 |
| 90 – 5 = 85 | 120 – 10 = 110 |
| 45 – 10 = 35 | 125 – 10 = 115 |
| 35 – 10 = 25 | 105 – 10 = 95 |
| 85 – 10 = 75 | 120 – 15 = 105 |
| 80 – 15 = 65 | 110 – 15 = 95 |
| 60 – 15 = 45 | 105 – 15 = 90 |
| 25 – 15 = 10 | 100 – 15 = 85 |
| 75 – 15 = 60 | |

Subtraction to Zero. Play Zero Corners with the child, using a score of 200 (*Math Card Games*, S9).

Worksheet. Near the end of the second day, give the child Worksheet T8, which is to be done with the abacus if needed.

The problems and solutions are shown at left.