Introduction

INDEX OF SKILLS

continued

Multiplication, continued

Division

Subtraction

TEACHER INSTRUCTIONS

In this unit, students will learn how to subtract numbers. Students will begin with pictorial subtraction problems, progress to one- and two-digit subtraction, move to regrouping, and finish with subtraction from three-digit numbers.

Objectives

- Students will solve subtraction problems using concrete objects and numbers.
- Students will apply basic subtraction facts from 18.
- Students will subtract from one-, two-, and three-digit numbers.
- Students will regroup when subtracting from two- and three-digit numbers.

Definitions

subtraction – the process of taking an amount or number away from a greater amount or number

whole amount – in the problem 3−1=2, 3 is the whole amount

amount taken away – in the problem 3−1=2, 1 is the amount taken away

difference – in the problem 3−1=2, 2 is the difference, or the amount remaining from the whole

one-digit subtraction – when subtracting from one-digit numbers, line up the digits in the ones place and subtract the lesser digit from the greater digit

two-digit subtraction – when subtracting from two-digit numbers, line up the digits in the tens place and the digits in the ones place; subtract the bottom digit in the ones place from the top digit in the ones place; if the top digit in the ones place is less than the bottom digit, regroup 1 tens from the tens place into 10 ones and add it to the top digit in the ones place and subtract; then, subtract the bottom digit in the tens place from the top digit in the tens place

three-digit subtraction – when subtracting from three-digit numbers, line up the digits in the hundreds, tens, and ones places; subtract the bottom digit in the ones place from the top digit in the ones place; if the top digit in the ones place is less than the bottom digit, regroup 1 tens from the tens place into 10 ones and add it to the top digit in the ones place and subtract; then, subtract the bottom digit in the tens place from the top digit in the tens place; if the top digit in the tens place is less than the bottom digit, regroup 1 hundreds from the hundreds place into 10

tens and add it to the top digit in the tens place and subtract; then, subtract the bottom digit in the hundreds place from the top digit in the hundreds place

checking a solution – to check a solution to a subtraction problem, add the difference to the number taken away; the sum should equal the whole amount

Getting Students Motivated

- Review subtraction. First, gather ten erasers. Review with the students that subtraction is taking an amount away from the total number. Write the number sentence "3−1=____" on the board. Gather three erasers. Ask the students how many erasers are left when one eraser is taken away from the three. Have the students model other simple subtraction problems.

- Write the following subtraction facts on the board:

  9−2=____ 4−1=____ 7−3=____ 8−6=____

  Divide the students into groups, and give each group ten manipulatives to help them work through the problems. Have the students find the amount from which they should subtract. For "9−2=____," the students need nine manipulatives. Then, have them physically remove two manipulatives from the nine. Ask the students how many manipulatives remain. Explain that nine minus two leaves seven. Repeat these steps for the remaining subtraction facts on the board. Have the students verbally explain the steps they took to find the solution for each subtraction fact.

- Draw a number line from 1 to 18 on the board. Then, write the following problems on the board:

  12−8=____ 9−5=____ 10−5=____ 16−9=____

  For "12−8=____," write the problem vertically and emphasize that the digits in the ones and tens columns must line up. Then, circle the top number, 12, in the problem. Mark a dark circle on the 12 on the number line. Then, draw a square around the second number, 8, in the problem. Explain that subtraction means taking away. Starting on the 12 on the number line, hop backward eight spaces, drawing an arch from one number to the next with each hop. Then, circle the number 4 on the number line. Explain to the students that this is the solution for the problem "12−8=____." Therefore, 12−8=4. Repeat these steps for the remaining subtraction problems on the board.

- Introduce two-digit subtraction without regrouping to the students by writing the following subtraction problems on the board vertically:

  28−14=____ 45−25=____ 78−37=____

  Explain that the digits in the ones and tens columns must line up. Starting with the ones column, tell the students to subtract the bottom digit, 4, from the top digit, 8, which will produce an answer of 4. Then, tell them to subtract the bottom digit in the tens column, 1, from the top digit, 2, to get 1. The answer for 28−14 is 14. Repeat these steps for the remaining subtraction problems on the board. Then, review the steps of subtracting two-digit numbers without regrouping.

- Introduce two-digit subtraction with regrouping to the students by using manipulatives. Divide the students into groups, and give each group 50 manipulatives. Write the problem "31−18=____" vertically on the board. Draw a vertical line between the two digits in the numbers to form a ones column and a tens column. Then, have the students gather groups of ten manipulatives and single manipulatives for both the top number and bottom number. The students should have 3 tens and 1 ones for the top number and 1 tens and 8 ones for the bottom number. Starting with the ones column, ask the students to subtract 8 ones from the 1 ones. However, this cannot be done. Therefore, explain that 8 cannot be subtracted from 1, so the students will need to regroup so they can subtract. Have the students take 1 group of tens from the 3 tens and add it to the ones to make 11 ones. Then, have them subtract 8 from 11 to leave them with 3 ones. Write 3 in the ones column. Then, ask the students how many tens are now left in the tens column (2). Have the students subtract the 1 tens from the 2 tens to leave them 1 tens. Write 1 in the tens column. Explain that the solution to the problem "31−18=____" is 13. Repeat these steps of having the students physically regroup tens into ones for several other two-digit subtraction problems.

Any of the activities included in this unit can be used as take-home components, but pages 85, 95, 109, and 115 are the best activities to use.

A parent letter follows this page. Send this letter home to students' parents to inform them of the purpose of the subtraction unit and how they can help reinforce the skill with their children.