Mathematics

Activity Book 3

Math Problem-Solving

Teacher Edition

GRADES 6-7

NewPath Learning

Contents

Class Action

❑ Use the "Guess and Check" procedure to find the solution to this problem:

Your new class has 30 students in total. There are 4 more boys than girls in the class. Use the "Guess and Check" method to find out how many boys and how many girls are in the class. Use the grid below to help you – remember, write in what you know first.

1st guess	2nd guess	3rd guess	4th guess	Answer
				Girls
				Boys (+4)
				Total

The solution is 13 girls and 17 boys.

How many guesses did you need? _____

Sports Storage Stumper

❑ Now have a try at solving the next problem by yourself. Draw up a grid below and write in what you know, before you have your first guess.

As part of your job as sports monitor, you need to conduct a weekly check of all the balls in the gym closet. When you checked, you could see that there were 3 more baseballs than tennis balls lined up on the shelf. When you counted the balls, you counted them together and only got a total number of 45 for the two kinds. Now the gym teacher is asking you how many tennis balls are in the closet. Can you find out, without going back and counting them?

Create a grid in the box below to help you solve the problem.

Desired Outcomes:

Understands mathematic conjectures as more than simply a guess, makes straightforward tests of conjectures and discards those that fail the test.

Calculates with whole numbers, money and measures, drawing mostly on mental strategies to add and subtract two-digit numbers and for multiplications and divisions related to basic facts.

Going Round in Circles

You can use the "Guess and Check" strategy to solve practical problems of measurement as well. The only difference is that you are working with length, mass, area or volume/ capacity instead of just with numbers.

❑ Try using the strategy to solve this:

At training sessions for the interschool sports, two members of your school's running team practice on a 500 meter circular running track. At the last session, the combined distance run by the two of them in 10 minutes is 5,020 meters, and one runner beat her friend by 40 meters.
Complete the grid to work out how many kilometers each person ran.

Show Time

❑ Now try this one:

Someone in your family has recorded two movies on a video tape, using up a total of 4 hours and 50 minutes playing time. You want to use the counter to find where the second movie starts, but you don't know how long each movie lasts. However, your sister tells you she thinks the second movie was about 20 minutes longer than the first one. What would you fast-forward (or rewind!) the counter to in order to find the beginning of the movie you want?

Desired Outcomes:
Understands mathematic conjectures as more than simply a guess, makes straightforward tests of conjectures and discards those that fail the test.
Takes purpose and practicality into account when selecting attributes, units and instruments for measuring things and uses the relationship between metric prefixes to move between units.