

From Problem to Possibility in Four Easy Steps

Here's a simple problem solving technique commonly introduced around Grade 3 with math problems. Notice how the process can be used to solve "everyday math mysteries" at home.

First, Understand the Problem by exploring it:

- reread and restate the problem
- identify what information you have and what you need to know

HOW TO DO THIS: talk about the problem to understand it better

Second, Make a Plan to solve the problem

- relate the problem to others you've done in the past
- think about what ways you could find the answer
- choose one or more of the ways that you think will work best

HOW TO DO THIS: check in with yourself or others to see what method will work best.

Third, Carry It Out

- try out your chosen strategy
- do the work: the necessary calculations
- check it out: does it seem to be working? is the answer one that makes sense?
- change the strategy if in practice it turns out not to work after all

HOW TO DO THIS: by using pictures or manipulatives; by writing out the steps needed to do the calculation

Fourth, Look Back at the Solution

- does your solution seem to be correct?
- think about how you solved the problem: can you think now of a different or easier way to solve it, or did the way you used really work?

HOW TO DO THIS: describe how the solution was reached, and explain what the solution is

First, understand the problem: "Oops. My library books are due today, but I can only see two of them sitting on the desk in the rec room. Where are the other eight?"

Second, make a plan: "Oh, last time they were in my room. I'll have a quick look there and if that doesn't work, then I'll check my school bag and the book cases in the rec room."

Third, carry it out: "Well, two were under my bed and two more were by the computer. But I'm still missing some. Where else do you think I should look, Mom?"

Fourth, look back: "I knew how many books I'd checked out, and so I knew the number I had to look for. I looked in places where I left books before, and found some. Then I asked Mom for some other ideas. It took a while, but I finally found the last book underneath the couch cushions."

This process was taken from George Polya's 1945 text, How to Solve It; it is presented in a slightly different form in the Ontario Curriculum Guide for Mathematics, 2005 at www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.txt