

Formative Feedback for Problem Solving

Problem Solving Strategy

First. Understand the problem. Read and reread the problem. Highlight the key words.

- ✓ What does the problem ask you to find? (This is the unknown.)
- ✓ What data does the problem give you?
- ✓ What are the requirements or conditions?
- ⇒ Hint: Draw a figure or picture. Make a table or model.
- ⇒ Hint: Introduce helpful symbols.

Second. Make a plan. Have you solved other problems like this one before?

- ✓ What steps will you take to get from the data to the unknown?
- ✓ Does your plan use all of the important data?
- ⇒ Stuck? Tactic: Is there a similar problem which is simpler?
- ⇒ Stuck? Tactic: Could you solve part of the problem?
- ⇒ Stuck? Tactic: Could you restate the problem?
- ⇒ Stuck? Tactic: Would other data help you find the unknown?
- ⇒ Stuck? Tactics: Work backwards. Look for a pattern. Guess and check.

Third. Carry out your plan.

- ✓ Check each step.
- ✓ Can you see clearly that the step is correct?

Fourth. Look back. Reread the problem.

- ✓ Did you answer the question that was asked?
- ✓ Was more than one question asked?
- ✓ Is your answer reasonable?
- ✓ Can you check the result? Can you think of an easier way to solve the problem?

Adapted with permission from Princeton University Press: G. Polya, "How to Solve It", 2nd ed., Princeton University Press, 1957, ISBN 0-691-08097-6. For details check: <http://www.pupress.princeton.edu/titles/669.html>