

Up Your  
Problem Solving

## PROBLEMS

*“Problem solving is having a strategy and using it.”*

Complete each step completely for all problems

- P -Problem, what is the problem?**
  - put the problem into your own words.
- R -Record all known about problem.**
  - summarize in your own words or symbols.
- O -Observe a visual diagram.**
  - sketch a diagram, chart or illustration.
- B -Brainstorm all about the problem.**
  - problem type, methods, sources of information.
- L -List estimated or possible solutions.**
  - numerical estimates or possible solution plans.
- E -Engage in doing the problem.**
  - Use one or more **POSITIVE** methods.
- M -Make a check of the solution & write it.**
  - check back to problem & sentence the solution.
- S -So, what are variations & SMILE.**
  - think about & list other related problems.

*Use all 8 steps on all problems to make the process a habit.*

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## METHODS

Use as the ENGAGE step of **PROBLEMS** in problem solving

*“Use one or a combination of methods for best results”*

- P -Patterns**
  - identify patterns and extend to solution.
- O -Observation**
  - sketch a picture & fill in all you know.
- S -Simplify**
  - do a simpler, easier version of problem.
- I -Imitate**
  - use similar problem & work from it.
- T -Trial & error**
  - try a solution, does it work, if not re-try.
- I -Invert problem**
  - work back from possible solution.
- V -Verbalize**
  - discuss problem with self and others.
- E -Equation**
  - adapt an equation or adapt a formula.

*Practice often by using different methods on problems*

**Learning Strategies**

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