Mnemonics to Teach Mathematical Problem Solving

Objective: To teach students to use the mnemonic device called the SOLVE Strategy, to teach mathematical problem solving skills.

Setting and Materials:

Settings: Special education classroom (30 – 45 minute sessions; total time – approximately 4.5 hours)

Materials:
- Step-by-step instructions for each lesson
- SOLVE Strategy cue cards
  - S – Study the Problem
  - O – Organize the Facts
  - L – Line up a Plan
  - V – Verify your Plan with Action
  - E – Examine your Results

Content Taught

Six lessons to teach mathematical problem solving skills using the SOLVE Strategy mnemonic.

Teaching Procedures

1. *First discuss with students the reasons their current strategies may be ineffective. Next, students commit to actively learn and use the SOLVE Strategy (sign a learning contract).*

2. *Describe and model the “S” (i.e., Study the Problem) and the “O” (i.e., Organize the Facts)*
   - Students determine what the word problem is and find and identify key facts in the word problem

3. *Describe and model the “L” step (i.e., Line up a Plan)*
   - Students created a plan for solving word problems without using numbers

4. *Describe and model the “V” and “E” steps (i.e., Verify your Plan with Action and Evaluate your Answer)*
   - Students Verify their plan by carrying out the plan created during the “L” step
     - Students write a mathematical equation and estimate the solution prior to solving the equation
• Students Evaluate the answer by using a series of self-monitoring questions
  • Students ask themselves if the answer makes sense, if the answer is reasonable, if the answer is accurate
  • Students write their answer as a complete sentence
5. Students practice using all steps of the SOLVE Strategy
6. Students continue to practice; provide feedback on student performance

Evaluation

1. Create a grade-level mathematical word problems. Student receives one point for correctly setting up the equation and one point for a correct response.
2. To evaluate students’ knowledge of the steps of the SOLVE Strategy, ask students to list and explain the strategy steps and components of each step.

Lesson Plan Based on: