

Math Strategies

Verbal Strategies

- ❖ Verbal Mediation: talk out problems; say the numbers aloud as you write them, recite formulae when studying.
- ❖ Audiotape math lectures so you can listen to the presentation of the math concepts utilizing free moments in a day (i.e., riding on the bus, exercising at the gym, etc.). Use a recorder with a counter so you can note specific points on the tape to review.
- ❖ Attend all lectures and listen carefully for the mathematical language. Write key words or phrases in your notes that the instructor uses while explaining the problem.
- ❖ Make a list of math terms and processes in your own “math glossary”.
- ❖ Humanize math formulae and language. Eg., the distributive property is the Santa Claus rule: Santa goes down the chimney and gives the same present to each child. This may increase your memory.
- ❖ Integrate different voice intonations and body language to cue your memory when studying important math language, key concepts, operations, etc.
- ❖ Repeat in your own words what you have learned.
- ❖ Explain a concept or problem to another student.
- ❖ Develop a list of questions from each unit and present the questions in small groups or to other students.
- ❖ Acknowledge the work you’ve done to master each little piece of the whole picture.

Visual Strategies

- ❖ Use color highlighters to emphasize key terms, operations, symbols, numerals. Eg., color the negative signs red to distinguish them from the other signs.
- ❖ Color-code each step of a problem differently.
- ❖ Write on graph paper so numerals line up more easily.
- ❖ Draw pictures to illustrate concepts, language, formulae.
- ❖ Put math operations on large newsprint and place on the walls in your study; use colors in these visuals.
- ❖ Use visual examples of everyday situations and objects to understand math.
- ❖ Create a visual storybook or study guide on one math concept.
- ❖ Use visual maps, diagrams, objects to demonstrate mathematical ideas.
- ❖ Break up word problems into smaller chunks: underline the question (the unknown), draw symbols around the smaller pieces, such as key words and the facts (the known).
- ❖ Make visual breaks (skip a line or leave space) between each step of the problem.
- ❖ Use flow charts for organization of steps and sequences.
- ❖ Do one problem at a time, and then move on to the next problem. Put only one or two problems on the paper when rewriting homework problems from the book.
- ❖ Visualize the problem. Activate your mental imagination, spatial thought, to work problems.
- ❖ Always write with a pencil or erasable pen so you can erase mistakes. This way your brain sees only correct work.

Kinesthetic Strategies

- ❖ Manipulate objects (2-D and 3-D) by touching wooden blocks, Cuisenaire rods, plastic chips, geometric shapes in all sizes and textures, base ten blocks, or abacus.
- ❖ Act out an operation or formula; make a dance to remember the sequence of steps.
- ❖ Draw large pictures of individual steps of operations and manually manipulate the cards and pictures into the proper order.
- ❖ Write the problem on the board (much larger than on paper).

Multi-modality Strategies

- ❖ Create and use a study guide that combines a visual and a verbal approach in a sequential way. Draw a line down the center of the page, and leave a space below for scratch. On the left side, show each step in the problem. Write a sentence on the right side telling what you did in each step.
- ❖ When doing homework, draw a line down the right side of the paper, and write problem steps on the left. Do scratch to the right of the problem.
- ❖ Keep a log of the kinds of errors you've made on tests. Work with a tutor and analyze a previous test or quiz. If you can identify recurring patterns, you can use extra time on your tests to check for those specific types of errors. You might change your study habits from this research. A log for types of errors is available (see Six Types of Test Taking Errors)
- ❖ Use finger or blank piece of paper to block out parts of the math problem as you work it (illustrates sequential movement within the solving process and blocks out information that can interfere).
- ❖ Use lined paper and skip lines between each step. Also, read the problem aloud to yourself as you write. Explain it to yourself.
- ❖ Ask someone to read to you what you have written.
- ❖ "Translate" math into words to clarify operations. Eg., "Nine plus a negative four subtract a negative one equals what?"
- ❖ Simplify the problem. Use smaller, more familiar numbers to discover a method of solving it, then apply to the original problem. Use what you do know to help with what you don't know.

Compiled by Gerry Lewin from the following sources:

Brochtrup, Margeaux and Chere Kelly. "Strategies in Math for College Students."

This was an article given at a former CAPED Conference. Lawson, Mary. Personal interview. 30 September 2005.

Nolting, Paul D. Winning at Math. 3rd ed. Bradenton, FL: Academic Success Press, Inc., 1997.