

STRATEGIES FOR MATH CALCULATION AND MATH FLUENCY

* Strategy Instruction: Work with Student on strategies to learn the basic math facts to reduce reliance on counting and using his fingers. Teach the facts that add up to ten, the doubles, and the concept of one more/one less to mastery levels, and then apply these strategies in “count by” patterns for figuring out his facts faster.

* Timed Drills: Use sheets of basic math facts like the “Mad Minutes” program to have Student do daily timed drill practice. In one format, he can see how many problems he can finish in a minute or in another format he can time how long it takes him to complete one page. Score and chart the daily practice to measure progress.

* Folding-in technique or Drill Sandwich technique: Using flashcards of basic facts, arrange a pile of ten facts using seven facts that he knows and three facts that he does not know in the 3rd, 6th and 8th positions in the pack. While going through the flashcards, on the first round, allow Student to look at the answer on the back of the card for the unknown fact; then on the second round see if he can remember the unknown facts; on the third round see if he can do all ten facts automatically and quickly. Rearrange a new pack of ten facts using the three previously unknown facts now as “known” facts and adding in three more new unknown facts to continue the drill.

* Student would benefit from creating stories for information he has to learn, such as using the “Thirsty Sixes” math curriculum (<http://www.citycreek.com/>) for learning basic facts.

* Chunking strategies: breaking apart sets of information, then putting it back together. For example:

- a. breaking down from unknown parts to known parts:
 - i. can't remember $6+7$, but knows double 6 and double 7 and one more/one less
 - ii. can't remember 4×7 , but know 2×2 and 2×7

* Utilize these websites that help with math facts and skills in a fun and exciting way:

www.sheppardsoftware.com/math.htm

www.aplusmath.com/games/index.html

www.playkidsgames.com/games/mathfact/mathFact.htm

www.factmonster.com/math/flashcards.html

www.mathinterventions.org

* Computer based math programs such as, IXL, Sumdog, ALEKS (requires subscription, but gives free trial), PLATO (also requires a subscription, but many high schools or vocational programs have one already), MATHHELP.COM (subscription through Home School Buyers Co-op), and cool math games website.

Math sites: www.aaamath.com

Math: www.gamequarium.com

<https://www.mathusee.com/>

www.math.com for a variety of math review activities

"Playing with Math"- by Chris Horne & Steve Feifer at www.schoolneuropsychpress.com
Math-u-See - breaks math down to simplest components - at mathusee.com
Connecting Math Concepts - "best evidence-based" math program – scripted, easier to use

* Book for Developing Number Sense: Coming to Know Numbers, by Reynolds and Wheatly.

You can order the Coming to Know Number book from www.mathematicslearning.org for \$35.95 OR from:

http://www.abebooks.com/servlet/SearchResults?isbn=1893799220&clickid=wLDSnGUppyNS3uO0h4QrzyS6UkTyxOxpWVKdRM0&cm_mmc=aff-ir-71954-77666&afn_sr=impact
www.mathinterventions.org
www.projectachieve.info

* Seven effective MATH instructional practices:

- 1: Teach students using explicit instruction on a regular basis.
- 2: Teach students using multiple instructional examples.
- 3: Have students verbalize decisions and solutions to a math problem.
- 4: Teach students to visually represent the information in the math problem.
- 5: Teach students to solve problems using multiple/ heuristic strategies.
- 6: Provide ongoing formative assessment data and feedback to teachers.
- 7: Provide peer-assisted instruction to students.