RESOURCES
SEVERE LEARNING DIFFICULTIES

MATH

I. BASIC MATH SKILLS

A. Basic Math Skills:

Basic Math Skills, also known as numeracy, is the ability to reason and apply simple numerical concepts such as addition, subtraction, multiplication, and division. Numeracy also includes number sense, operation sense, computation, measurement, geometry, probability and statistics.

B. Students may have Difficulty with the Following Skills:

For Young Children:

- Difficulty learning to count
- Trouble recognizing printed numbers
- Difficulty tying together the idea of a number (4) and how it exists in the World (4 horses, 4 cars, 4 children)
- Poor memory for numbers

For School-Aged Children:

- Trouble learning math facts (addition, subtraction, multiplication, division)
- Poor long-term memory for math functions
- Difficulty measuring things

For Teenagers and Adults

- Difficulty estimating costs like grocery bills
- Difficulty learning math concepts beyond the basic math facts
- Poor ability to budget or balance a checkbook

C. Informal Assessment Tools:

1. **Rocket Math Addition Facts Assessment**
2. **Rocket Math Subtraction Facts Assessment**
3. **Rocket Math Multiplication Facts Assessment**
4. **Rocket Math Division Facts Assessment**

https://www.rocketmath.com/p/mathfactsfluencytests.html

D. Research-Based Intervention Ideas:

1. **School-wide Strategies for Managing MATHEMATICS**

Intervention Central (www.interventioncentral.org)

a. **Math Computation: Boost Fluency Through Explicit Time-Drills**

b. **Math Computation: Motivate With 'Errorless Learning' Worksheets**

c. **Math Computation: Two Ideas to Jump-Start Active Academic Responding**

d. **Math Vocabulary: Preteach, Model, and Use Standard Math Terms**

http://www.interventioncentral.org/academic-interventions/math/school-wide-strategies-managing-mathematics

2. **Number Operations: Strategic Number Counting Instruction**

http://www.interventioncentral.org/academic-interventions/math/number-sense-promoting-basic-numeracy-skills-through-counting-board-ga-0

3. **Math Computation: Promote Mastery of Math Facts Through Incremental Rehearsal**

http://www.interventioncentral.org/academic-interventions/math/math-computation-promote-mastery-math-facts-through-incremental-rehearsa

RESOURCES
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MATH	
I. BASIC MATH SKILLS	
D.	**Research-Based Intervention Ideas:**
	4. Math Computation: Increase Accuracy By Intermixing Easy and Challenging Problems http://www.interventioncentral.org/academic-interventions/math/math-computation-increase-accuracy-intermixing-easy-and-challenging-comp **5. Math Computation: Student Self-Monitoring of Productivity to Increase Fluency** http://www.interventioncentral.org/academic-interventions/math/math-computation-student-self-monitoring-productivity-increase-fluency **6. Cover-Copy-Compare** http://www.interventioncentral.org/academic-interventions/math/cover-copy-compare **7. Self-Monitoring: Customized Math Self-Correction Checklists** http://www.interventioncentral.org/academic-interventions/math/self-monitoring-customized-math-self-correction-checklists **8. Peer Tutoring in Math Computation with Constant Time Delay** http://www.interventioncentral.org/academic-interventions/math/peer-tutoring-math-computation-constant-time-delay **9. Number Sense: Promoting Basic Numeracy Skills through a Counting Board Game** http://www.interventioncentral.org/academic-interventions/math/number-sense-promoting-basic-numeracy-skills-through-counting-board-ga-0
E.	**Teaching Ideas & Sources:**
	1. Basic Math Skills – Teaching Ideas http://departments.jordandistrict.org/specialed/staff/forms.html **2. Elementary Mathematics**: Jordan School District http://elemmath.jordandistrict.org/teachers/k-6/ **3. Secondary Mathematics:** Jordan School District http://departments.jordandistrict.org/curriculum/mathematics/secondary/resources/index.html

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MATH

II. MATH REASONING

A. Math Reasoning

Math Reasoning moves students beyond simply memorizing facts to thinking beyond the rules and procedures in order to draw logical conclusions by developing an understanding of a situation, context, or concept and connecting it with other knowledge.

B. Students may have Difficulty in the Following Areas:

For Young Children:

- Trouble organizing things in a logical way – putting round objects in one place and square ones in another

For School-Age Children:

- Not familiar with math vocabulary
- Avoiding games that require strategy

For Teenagers and Adults:

- Trouble with concepts of time, such as sticking to a schedule or approximating time
- Trouble with mental math
- Difficulty finding different approaches to one problem

C. Research-Based Information Ideas:

1. School-Wide Strategies for Managing MATHEMATICS
Intervention Central (www.interventioncentral.org)
http://www.interventioncentral.org/academic-interventions/math/school-wide-strategies-managing-mathematics

a. **Applied Problems: Encourage Students to Draw to Clarify Understanding**
b. **Applied Problems: Improving Performance Through a 4-Step Problem-Solving Approach**
c. **Math Vocabulary: Preteach, Model, and Use Standard Math Terms**
d. **Math Instruction: Support Students Through a Wrap-Around Instruction Plan**
e. **Math Problem-Solving: Help Students Avoid Errors With the 'Individualized Self-Correction Checklist'**
f. **Math Instruction: Consolidate Student Learning During Lecture Through the Peer-Guided Pause**
g. **Math Instruction: Unlock the Thoughts of Reluctant Students Through Class Journaling**

2. Applied Math Problems: Using Question-Answer Relationships (QARs) to Interpret Math Graphics
http://www.interventioncentral.org/academic-interventions/math/math-problem-solving

3. Math Problem-Solving: Combining Cognitive & Metacognitive Strategies
http://www.interventioncentral.org/academic-interventions/math/math-problem-solving-combining-cognitive-metacognitive-strategies

RESOURCES
SEVERE LEARNING DIFFICULTIES

MATH	
II. MATH REASONING	
D.	**Teaching Ideas & Resources**
	1. Secondary Mathematics: "A Teacher's Guide to Reasoning and Sense Making." National Council of Teachers of Mathematics. http://www.nctm.org/uploadedFiles/Math_Standards/Teacher_Guide_FHSM.pdf **2. Granite Vocabulary**: Math Vocabulary Cards http://elemmath.jordandistrict.org/teachers/k-6/ **3. Elementary Mathematics**: Jordan School District http://elemmath.jordandistrict.org/teachers/k-6/ **4. Secondary Mathematics:** Jordan School District http://departments.jordandistrict.org/curriculum/mathematics/secondary/resources/index.html **5. Special Education Mathematic Resources:** Jordan School District http://elemmath.jordandistrict.org/special-ed/ **6**. Free Web Math Games: www.math/playground.com/wordproblems.html