

form and remember associations	understand basic relationships
make simple generalizations	see and use patterns

It may be helpful to develop interventions for enhancing math instruction. Use the following chart to organize your basic activities and add extensions for those with special learning needs. For more examples and great lesson plans, try <http://r.searchhippo.com/r2.php?i=7&q=math+lessons+on+association&u=http%3A%2F%2Fwww.nctm.org%2F> And then click on **illuminations**.

Concept: Form and remember associations and connections

Level of student understanding	LD	Math anxious	Mild DD	Moderate DD
Preparation to learn				
Concrete				
Semi-concrete				
Abstract				

Example:

- ❖ How many sides in a _____
- ❖ Measure student height and do activities to establish tall, taller, tallest
- ❖ Addition and subtraction facts that are reversals

Web example: <http://standards.nctm.org/document/examples/chap4/4.6/index.htm>

Concept: Make simple generalizations

Level of student understanding	LD	Math anxious	Mild DD	Moderate DD
Preparation to learn				
Concrete				
Semi-concrete				
Abstract				

Example:

- ❖ If - then statements
- ❖ Analogy work - Sky is to blue as _____ is to white
Sky is to blue as cloud is to white .
- ❖ Measuring liquid using different size containers, same amount of liquid
- ❖ Measuring areas, showing different sides can still be same area
- ❖ Play 20 questions to help students focus and narrow on clusters of ideas

Concept: Understand basic relationships

Level of student	LD	Math anxious	Mild DD	Moderate DD
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understanding				
Preparation to learn				
Concrete				
Semi-concrete				
Abstract				

Example:

- ❖ Counting by 2, 5, 10
- ❖ Interchange fractions to decimals to division problems as ways to solve the problems
- ❖ Larger than, smaller than
- ❖ Make predictions
- ❖ Estimating
- ❖ Using money to explain decimals
- ❖ Match game - numerous conceptual matches
- ❖ Find the difference

Web example: <http://standards.nctm.org/document/eexamples/chap5/5.2/index.htm>

Concept: See and Use Patterns

Level of student understanding	LD	Math anxious	Mild DD	Moderate DD
Preparation to learn				
Concrete				
Semi-concrete				
Abstract				

Examples:

- ❖ Find the missing number
- ❖ Symmetrical or asymmetrical
- ❖ Number charts to show facts - construct them, use them to get answers

Web example: <http://standards.nctm.org/document/eexamples/index.htm>
<http://standards.nctm.org/document/eexamples/chap6/6.4/index.htm>

Tips:

LD - The crucial piece here is to help the youth identify what is getting in the way. It may be spacing, distractions, memory retrieval, a concept or two that are not fully understood. It may be a need for graph paper to align things, a calculator to speed up the process so the student does not lose focus. LD students also may need a leap frog approach to math. Many times we assume, because a student could do page 44, the next page will make sense, but it may not be what the student needs. Teach the youngster to reason aloud, to teach to others so the concepts are established and to believe s/he can learn..... so when a road block appears, it is easy to get help getting it removed rather than giving up.


Mild delay - It takes more repetitions, more hands on work, more time to get the material. Remember how important it is to give the student the time needed to construct math meaning.

Significant intellectual challenges - pare math down to the essential facts needed to survive and to be self sufficient in day to day living. Teach essential concepts as part of the life skills approach. If later, the student can give meaning to regular math instruction, it can be folded into the math experiences.

Math Anxious - This is the most complex challenge to math success. It only goes away as the student experiences success, yet the student is often so reluctant, the approach of math sets off the adrenaline reaction. Help the student by taking a new approach to math -- no tests, no grades, no paper and pencil until the student opts for them. Instead, use film strips, manipulatives, life experiences to help the student "sneak up on" success with numbers.



Communicating in writing

	"I'm stuck." "I don't know what to say." "I didn't plagiarize; it's just a coincidence."	Definition: Dysgraphia - a neurological-based writing disability in which a person finds it hard to form letters or write within a defined space.
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Skills that contribute to writing success

1. Recognize and use punctuation.
2. Able to spell enough words to ease writing ideas down.
3. Handwriting needs to be legible and flow.
4. Reading level above target writing.

The steps to acquire those skills and help student learn to write material that is "out of this world:



Many youngsters who find writing difficult, enjoy doodling. Consider beginning with a comic strip of five or six frames.

Steps for making a comic strip with a message:

Help the student fix on a main character who would deliver the message best.

Come up with a brief message - one liners for ending are often most successful.

Organize the page by frames.

Now the words need to fit the pictures and vice versa..

Once the comic is done, check to see if it has a rhythm to it.

Check for spelling and punctuation so the message gets through quickly.

This process corresponds to six trait writing. It is also the model for writing success.



Try an "ad campaign" for TV. Follow the same process as the comic strip



Write a letter to a soldier - pen pal - rock star - sports hero

Six trait writing program is a complex and comprehensive place to begin. The 6-trait writing model is a way to teach writing to older youngsters and include assessment in the process. This model focuses on six qualities seen in outstanding written works. The six traits include:



Ideas -The content, or main theme. Can be looked at as the heart of the message.

Organization - The internal structure of the writing.

Voice - The personal voice of author comes through. This gives a sense of a real person speaking.

Word Choice - The use of precise, colorful and rich words to communicate.

Sentence Fluency - The writing flows together often with a rhythm or cadence.

Conventions - Mechanical correctness, including spelling and grammar.

Acquiring and practicing for expertise

Many students have poor early handwriting because they are not ready to perform the requisite small muscle tasks. It can be useful to begin ten minutes of writing during the day, with emphasis on fluency - and yes, teaching cursive can actually help the student move quickly since the motions are more fluid and the letters are connected.