Why is Math-U-See an ideal program for Students with Specialised Education Needs ?

Explicit Instruction

Math·U·See directly teaches skills for math

Math·U·See'sInstruction Packs provides a lesson-by-lesson videos and a simple to follow Instruction Manual. This enables any teacher to easily prepare for and easily present the lesson. All lesson plans have been prepared in a sequential order, so the teacher can just progress through the program without having to work out what they need to teach.

The teacher does not have to be highly skilled or educated in maths to be able to effectively teach the entire Math·U·See program.

Systematic and Cumulative

Math·U·See has a definite logical sequence of concept introduction. Each maths concept is mastered in sequence, from addition through to multiplication, division, fractions, decimals and percents. This ensures foundational concepts are truly understood and maths is learnt with ease and confidence. The student understands when, how and why to use maths in each real life context required, rather than relying on rote learning / memorisation of formulas.

Structured

Math·U·See uses step·by·step procedures for introducing, reviewing, and practicing concepts. These are integrated throughout the entire program. (see our 4 Step Approach in the following documentation, or visit our website Maths Australia)

Multi-sensory

Math-U-See engages visual, auditory, and kinesthetic channels simultaneously or in rapid succession. Students are presented maths from a 'concrete to abstract' framework using Manipulative Blocks as our main teaching tool through all lessons.

Progress Monitoring

Math-U-See uses ongoing progress monitoring with frequent opportunities to re-teach.

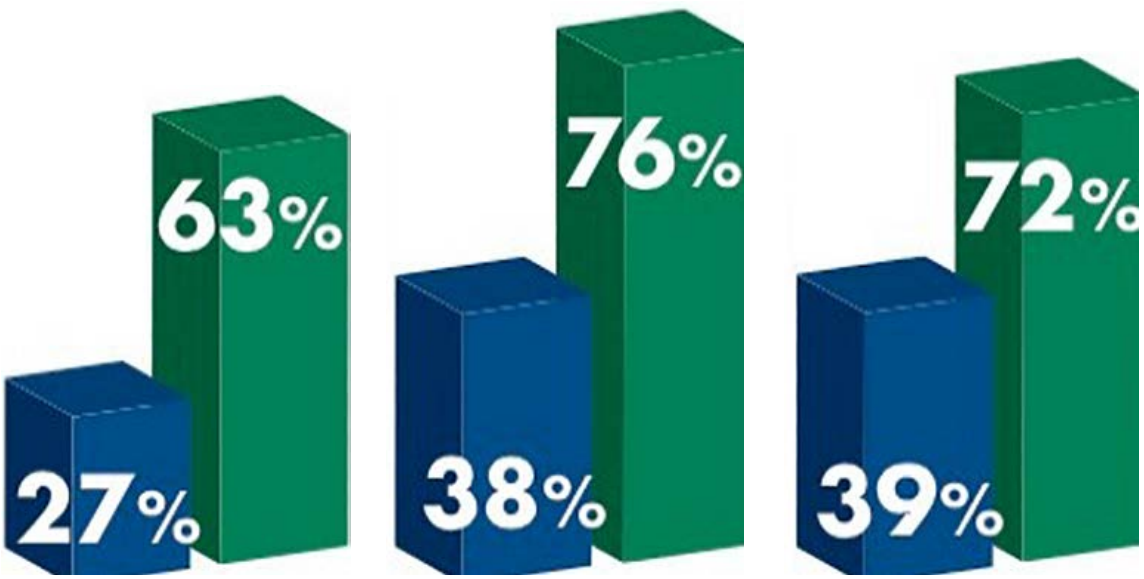
Minimal Teacher Preparation Time

Teacher Preparation time is minimal. Just watch the videos to see how to teach the lesson, then read the Instruction Manual for additional information to support you in teaching, and the students in learning, the particular lesson.

Do·You·See?

100% Average Improvement Year after Year

Pre/Post Data



2006-2007	2007-2008	2008-2009
32 students	600 students	854 students

Students receiving special education services in Albuquerque Public Schools demonstrated amazing gains through the implementation of Math-U-See.

How does Math-U-See align with research-based instruction?

The following table outlines how Math-U-See aligns with the best practices to assist students struggling with mathematics.

	Recommendation	How does Math-U-See meet thecriteria?
#1	Screen all students to identify those at risk for potential mathematics difficulties and provide interventions to students identified as at risk.	Pre-screening of every student entering the Math-U-See system is a prerequisite for the use of Math-U-See. Evaluation is based on the ability of the student to demonstrate mastery of a given concept or computational process. Mastery is determined by the student using strategies and language that reflect the appropriate level of mathematics.
#2	Instructional materials for students receiving interventions should focus intensely on in-depth treatment of whole numbers in kindergarten through grade 5 and on rational numbers in grades 4 through 8.	The basic premise of the Math-U-See system is to have students learn whole number computations first. An emphasis is placed on mastery of counting, place value, addition, subtraction, multiplication, and division of whole numbers prior to moving into fractions and decimals. The concepts taught in whole numbers are the foundation for teaching rational numbers
#3	Instruction during the intervention should be explicit and systematic. This includes providing models of proficient problem solving, verbalization of though processes, guided practices, corrective feedback, and frequent cumulative review.	The Math-U-See system provides clear models for solving a variety of problems. The instruction for both teacher and student is explicit, structured, and cumulative. The online video lessons provide specific instruction for the teacher. Each lesson models concepts, vocabulary, and use of the manipulatives. There is a systematic sequence to the instruction that builds cumulatively from lesson-to-lesson. There are built-in step-by-step procedures for introducing, practicing, and reviewing the concepts.
#4	Intervention materials should include instruction on solving word problems that is based on common underlying structures.	Math-U-See provides strategies for the teacher to work with the student to understand the context of the word problem. These strategies may include: breaking the word problem down into smaller parts, relating the problem to real life, building, drawing, acting out the problem, and looking for the key words. The concrete instruction of concepts in the Math-U-See system brings understanding that is otherwise lost in traditional abstract approaches.
#5	Intervention materials should include opportunities for students to work with visual representations of mathematical ideas and interventionists should be proficient in the use of visual representations of mathematical ideas.	The hands-on aspect of Math-U-See is the systematic introduction and practice of basic facts needed to do mathematics efficiently. Mastery of a concept is not solely based on getting the right answer but on getting it quickly and efficiently. Counting strategies are very limited as Math- U- See effectively moves students beyond. A free online drill program is offered through the website.
#6	Interventions at all grade levels should devote about 10 minutes in each session to building fluent retrieval of basic arithmetic facts.	Embedded in Math-U-See is the systematic introduction and practice of basic facts needed to do mathematics efficiently. Mastery of a concept is not solely based on getting the right answer but on getting it quickly and efficiently. Counting strategies are very limited as Math-U-See effectively moves students beyond counting. A free online drill program is offered through the website.
#7	Monitor the progress of students receiving supplemental instruction and other students who are at risk	The goal is to use the student's response as a basis for determining instructional needs and intensity.

Source Data: http://ies.ed.gov/ncee/wwe/pdf/practiceguids/rti_math_pg_042109.pdf

4 STEP APPROACH TO EFFECTIVE Math.U.See IMPLEMENTATION

STEP 1

PREPARE FOR THE LESSON

The teacher watches the online video lessons and reviews the instruction manual to ensure appropriate delivery of concepts and vocabulary

STEP 2

PRESENT THE NEW TOPIC

Both the teacher and students us the Build, Write, and Say process. The teacher models the following multi-sensory approach to introduce the new concept to students:

Build It: Demonstrates how to use the blocks or fraction overlays to solve the problem.

Write It: Show the problem stepc byc step on paper as it is built.

Say It: Explain the steps used to figure out the answer.

Teach It Back: The student teaches the concept back demonstrating understanding of the concept.

By using Build, Write, and Say (explained further in the online video lessons), students are provided a multi sensory approach to show what they know.

STEP 3

PRACTICE FOR MASTERY

Students use the "build it, write it, say it" process to work the lesson practice problems from the student text. Teacher and students continue to do examples together until students can do the problems without assistance.

STEP 4

PROGRESS AFTER MASTERY

Once mastery of the new concept is demonstrated, proceed into the systematic review pages for that lesson. Mastery can be demonstrated by having each student teach the new concept back to you: build the problem with the blocks (or fraction overlays), write the equation, and say/explain the problem in his or her own words.

The goal is not to fill in worksheets but to be able to teach back what has been learned. The students will be prepared for the next lesson only after demonstrating mastery of the current lesson.

A Chinese Proverb says, "Tell me and I'll forget; Show me and I may remember; Involve me, and I will understand." To which we add. "Let me teach it and I will have achieved mastery."

START HERE

Pretest New Student
For placement into correct level

4-STEP APPROACH

Step 1: Teacher Prepares to Teach
- Watch online video lessons
- Review instruction manual

Step 2: Teacher Teaches Lesson
- Use manipulatives.
- Use Math-U-See vocabulary.
- Use build, write, say, and teach it back.

Step 3: Student Practice
- Assign a lesson practice page (A, B, and/or C) to student. Student should be using the blocks.
- Assess student's work and understanding.

"Does the student demonstrate mastery of the concepts?"

· **Yes?** Go to step 4.

· **No?** Identify student needs. Use additional instruction/practice.

- Continue with lesson practice pages as the student needs them.

Step 4: Student Review
- Assign systematic review pages (D, E, and/or F) to student. Student should not be using the blocks unless an accommodation is required.
- Continue to assess student's understanding.

"Does the student demonstrate mastery of the concepts?"

· **Yes?** Student takes lesson test.

· **No?** Identify student needs. Use additional instruction/practice.

Lesson Test
- Have student take lesson test.
- Continue to assess student's understanding.

"Does the student demonstrate mastery of the concepts?"

· Yes? Introduce next lesson.

· No? Identify student needs. Use additional instruction/practice.

Additional Instruction/Practice
- Continue using manipulatives and/or visual representations to re-teach lesson.
- Have student work additional workbook pages with a focus on concepts not yet mastered.
- Create worksheets using the Math-U-See worksheet generator.

www.MathUSee.comworksheet_generator.php

- Use the online drill to practice facts.

www.MathUSee.com/math_drill.php

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