CT Core Standards: Implications for SPED/SRBI/EL

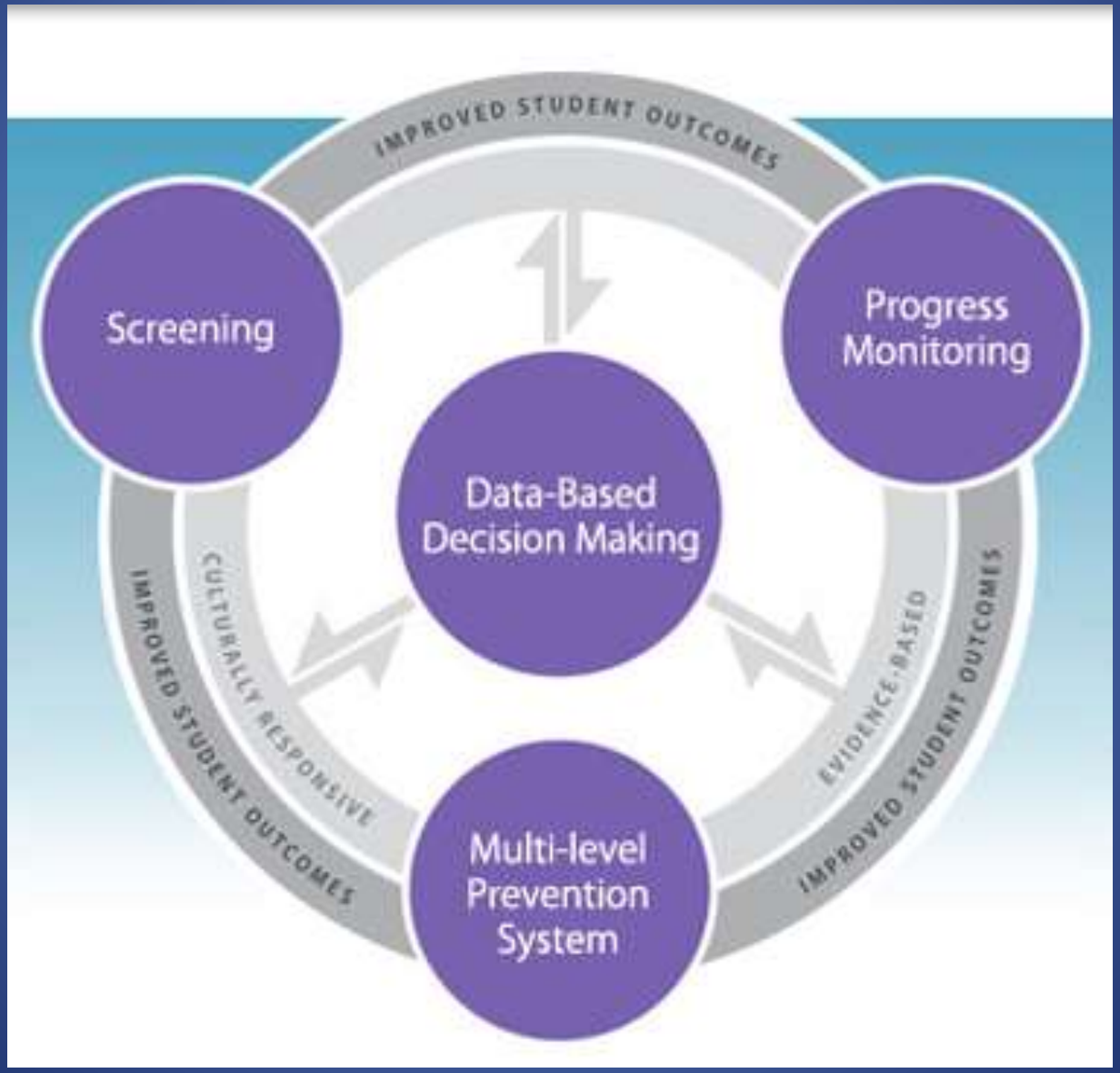
CCSS for SRBI Math

Tier 2 and Tier 3 Students

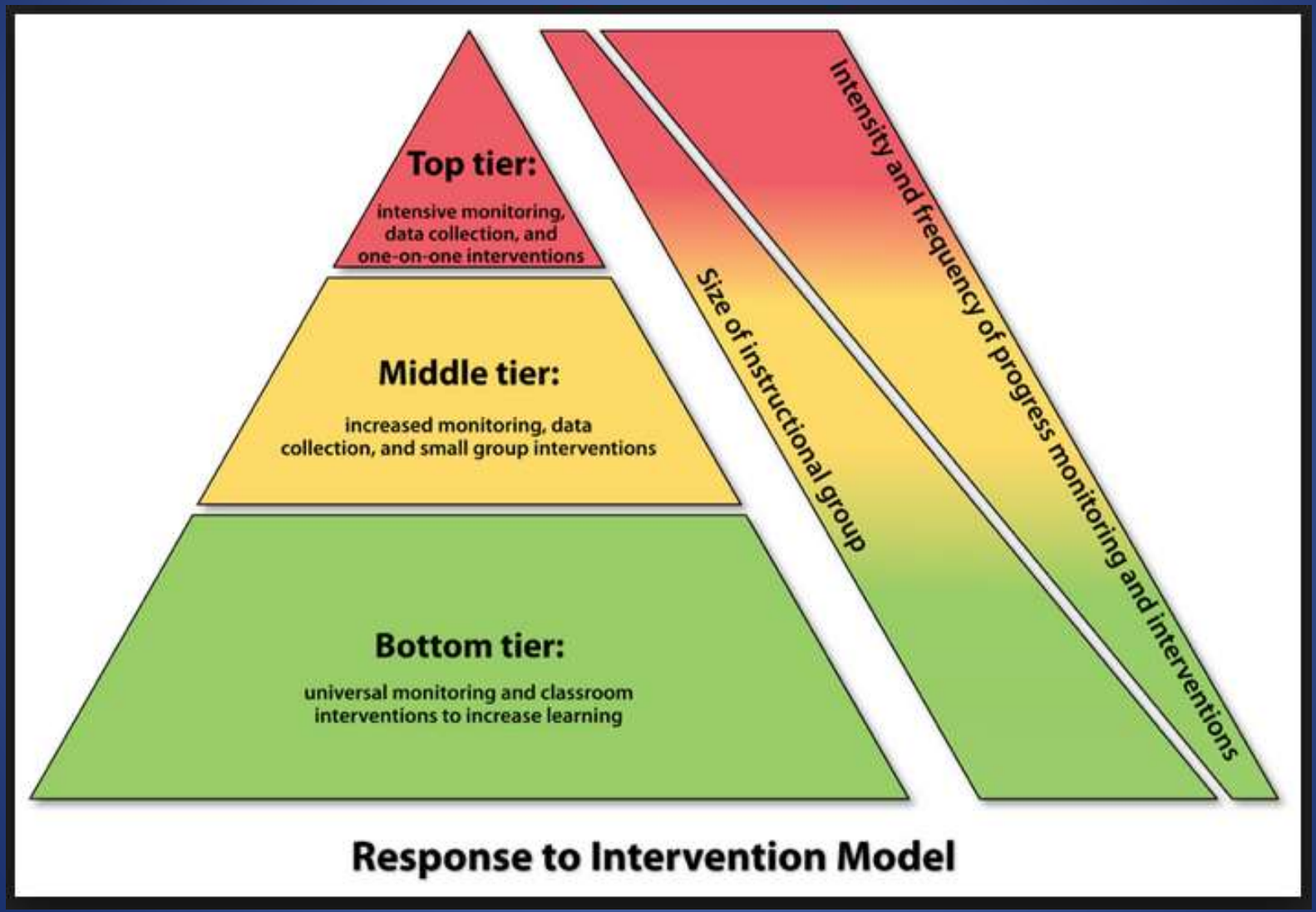
Goals for this session:
Participants will….

- Review RTI model
- Experience what it's like to be a student struggling with math
- Learn the components of an SRBI Math program
- Review recommendations from the What Works Clearinghouse
- Learn of resources to aid in your SRBI efforts

Essential Components of SRBI/RTI



Basic Review of SBRI Model:



www.learnnc.org

Diagram by Daniel Lunk

Think of that student:

- Who thinks she's a dummy because she just doesn't get it when everyone else seems to
- Who acts out because it's easier than showing he doesn't understand
- Who copies everything down and looks like he knows what he's doing, but cannot tell you what it means
- Who's frustrated because she thought she knew the rules but the rules keep changing

Excerpts from:

Hidden Ambitions

by Ronald F. Ferguson, Ph.D.

There are things I'd tell my teachers
If I only had a chance.
Like the reasons I so often
Seem to drift off in a trance.

What they cannot see by looking
Is that I'm quite insecure.
Even when I'm acting macho
What I'm feeling is unsure.

My classmates think I'm smart
But just refuse to buckle down,
That somehow I like my status
As the classroom's premier clown.

Since I act like I don't care
About my low grades and performance,
No teacher wants to work with me
They all express reluctance.

So I wish I had the courage
When I'm lost and feeling frightened
To let teachers know I want some help
To have my prospects brighten.

If only there was some way
I could make a true confession
That I'm not the clown I seem
I want to master *all* my lessons.

Ronald F. Ferguson, October 2013

Let's walk a mile in their shoes…

- 23 + 12 = ?

	Hundreds (10^2)	Tens (10^1)	Ones (10^0)
23		2	3
+12		1	2
35		3	5

- **23 + 12 ≠ 35? What? Why not?????**

- 23 +12 = 101 **What???**

The magic of **Base 4**:

	Sixteens (4^2)	Fours (4^1)	Ones (4^0)
23		2	3
+12		1	2
101		3	~~5~~

4 ones

		~~4~~	1

4 fours

	1	0	1

Now you try it!

- 23 + 32 = ? in Base 4

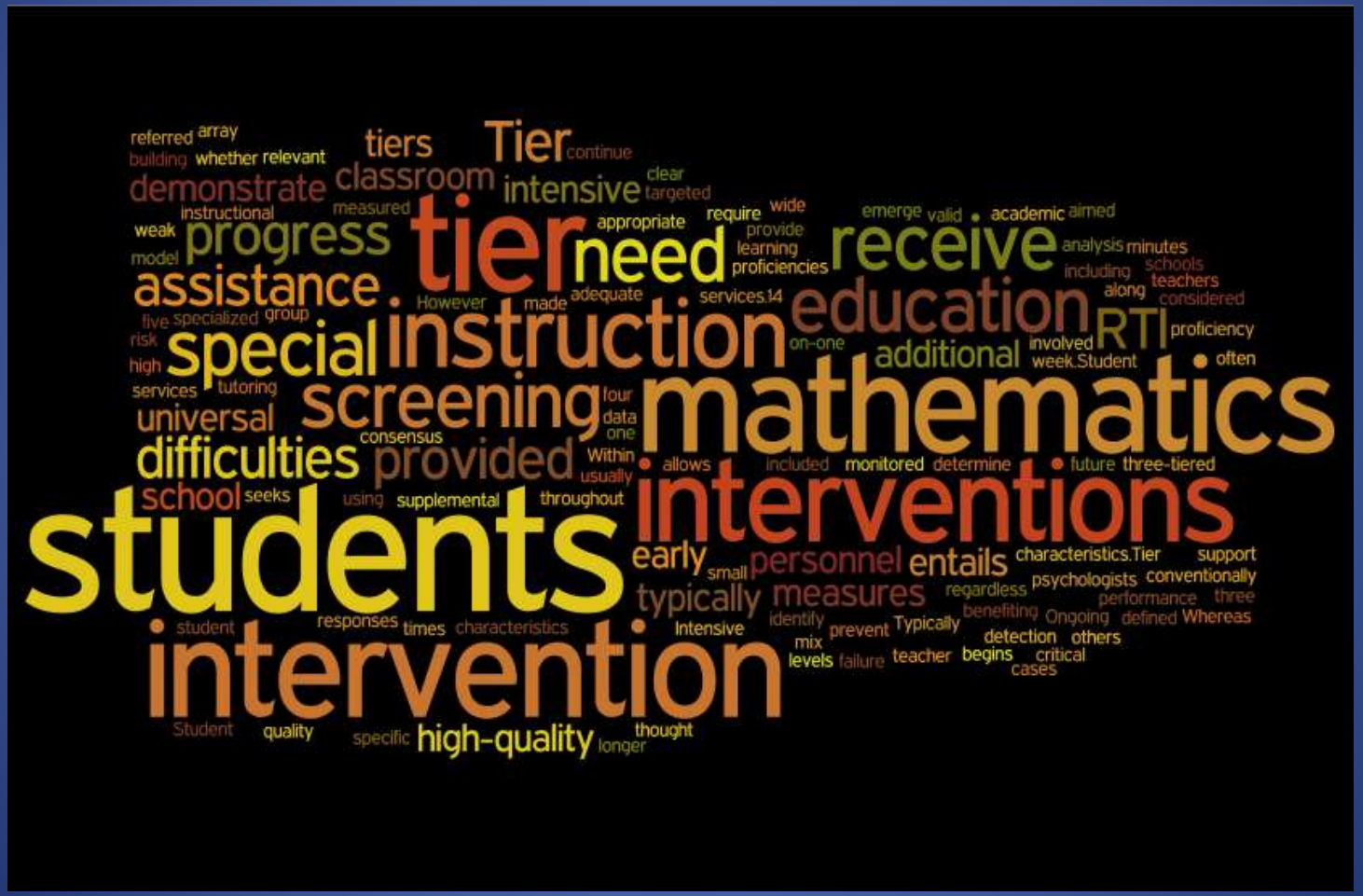
$$\begin{array}{r} {}^{1}23_4 \\ +32_4 \\ \hline 121_4 \end{array}$$

- 143 + 41 = ? in base 5

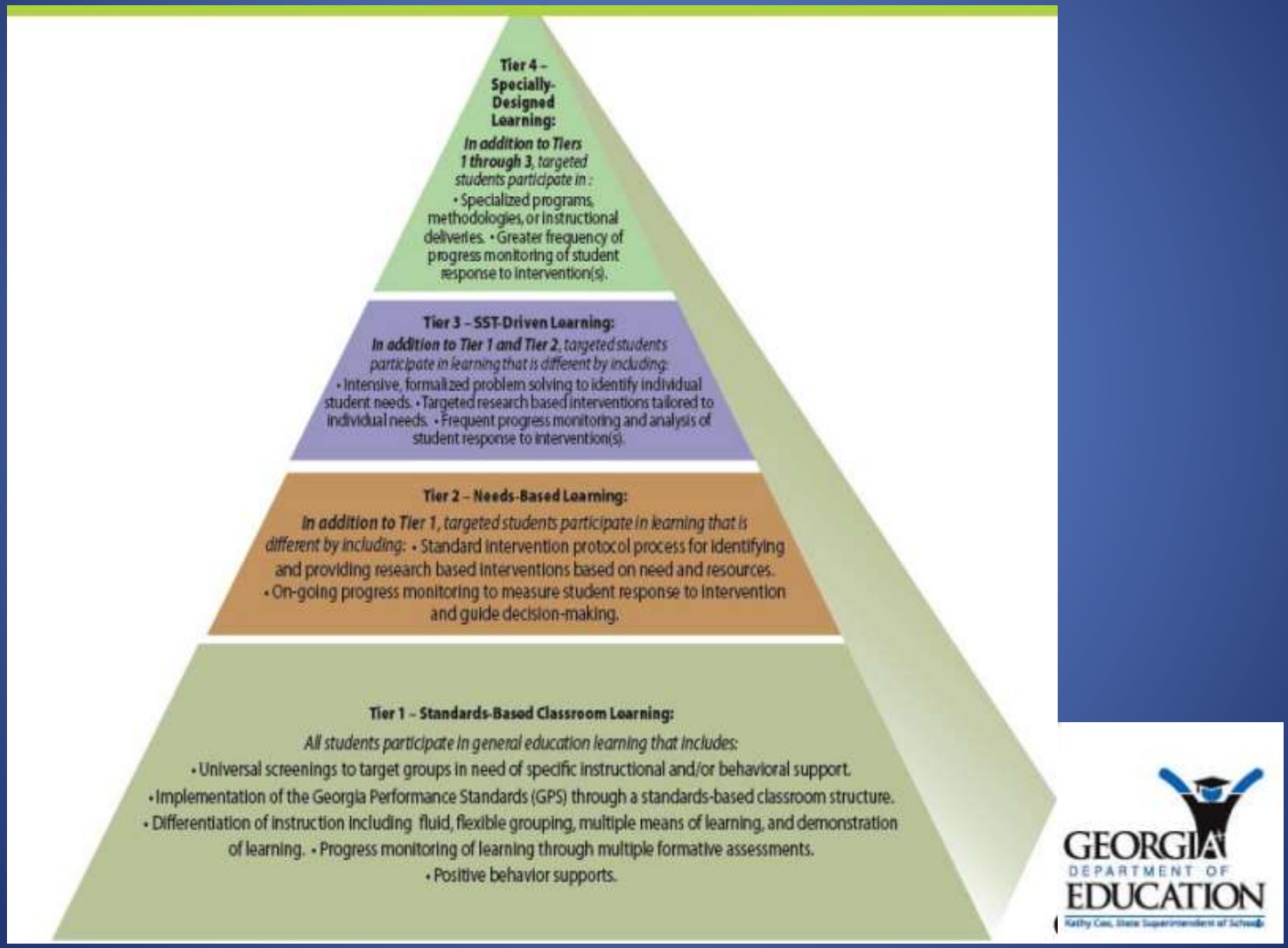
$$\begin{array}{r} {}^{1}143_5 \\ +\ 41_5 \\ \hline 234_5 \end{array}$$

How did you feel while doing these "simple" math problems?

Who should always be at the center of our SRBI planning and decision making?



A 4-Tiered Intervention Model



Tier 1: Benchmark Level

- Who: all students
  - Will be successful for approx. 80% of students
- What: high quality, empirically supported curriculum and instruction
- When: regularly scheduled classroom instruction
- How assessed: progress is monitored at minimum three times a year
  - Benchmark screening during the Fall, Winter and Spring

Tier 2: Supplemental Level

- Who: students not making adequate progress in the Tier 1 core curriculum –
  - 10% - 15% of students
  - **Small group** instruction
- What: research-based instruction and strategies that are **matched to student need** and **focused on core competencies** that support, enhance, or supplement Tier 1 instruction
- When: in addition to core instruction, **several times a week**
- How assessed: on-going (**1-2 times a month**) progress monitoring to measure student response to intervention and to guide decision making

Tier 3: Intensive Level

- Who: students not making adequate progress in the Tier 1 core and Tier 2 curriculum –
  - Approx. 5% of students
  - **Individual and** small group instruction
- What: research-based **intense intervention** and strategies that are matched to **individual student need and progress** and focused on core competencies
- When: in addition to core instruction, **every day**
- How assessed: on-going (**1-2 times per week**) progress monitoring to measure student response to intervention and to guide decision making

Tier 4: Specially Designed Instruction Level

- Who: students not able to make progress in the Tiers 1, Tier 2, or Tier 3
  - Approx. 1% of students**; PPT decision**
  - **Individualized** instruction
- What: specialized programs, methodologies, or instructional delivery of **focused, targeted research-based instruction** and strategies that are matched to **individual student need and progress** and focused on core competencies
- When: **every day in place of Tiers 1-3**
- How assessed: **daily** progress monitoring to measure student response to intervention and to guide decision making

New Study Shows Benefits of Visual, Game-Based Math: *EdWeek* 12/08/14

ST Math

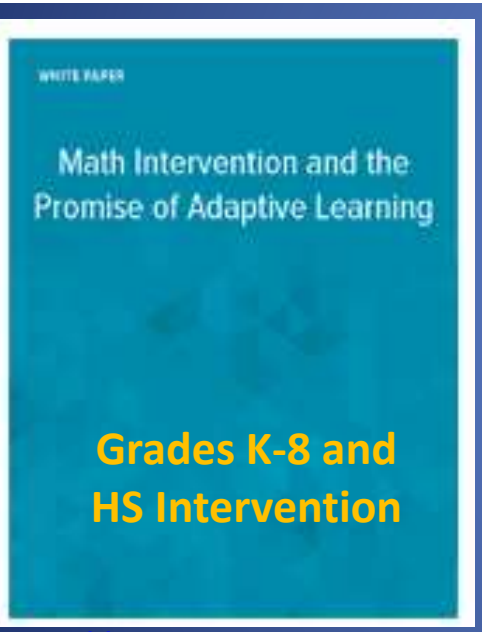
ST Math has six distinct advantages:

1. **Game-based**: engaging and challenging learning games that promote persistence and performance
2. **Instructional**: the games promote hypothesis development and testing; failure is met with instructional feedback which an builds an academic mindset that effort leads to achievement (i.e., grit)
3. **Conceptual understanding**: rather than math as a barrier to adventure games, ST Math games are built around the mechanics of math to promote powerful learning.
4. **Aligned**: the games can be aligned to the core curriculum creating a coherent instructional program (unlike most blended learning initiative) and allowing application of newly developed skills.
5. **ELL**: the games include no words so they are perfect for students new to English as well as advanced students.
6. **Support**: schools don't buy online games, they buy a proven program with strong implementation, professional development, and ongoing support.

http://blogs.edweek.org/edweek/on_innovation/2014/12/new_study_shows_benefits_of_visual_game-based_math.html

Other Programs Helping to Individualize:

dreambox LEARNING



http://www.dreambox.com/math-intervention

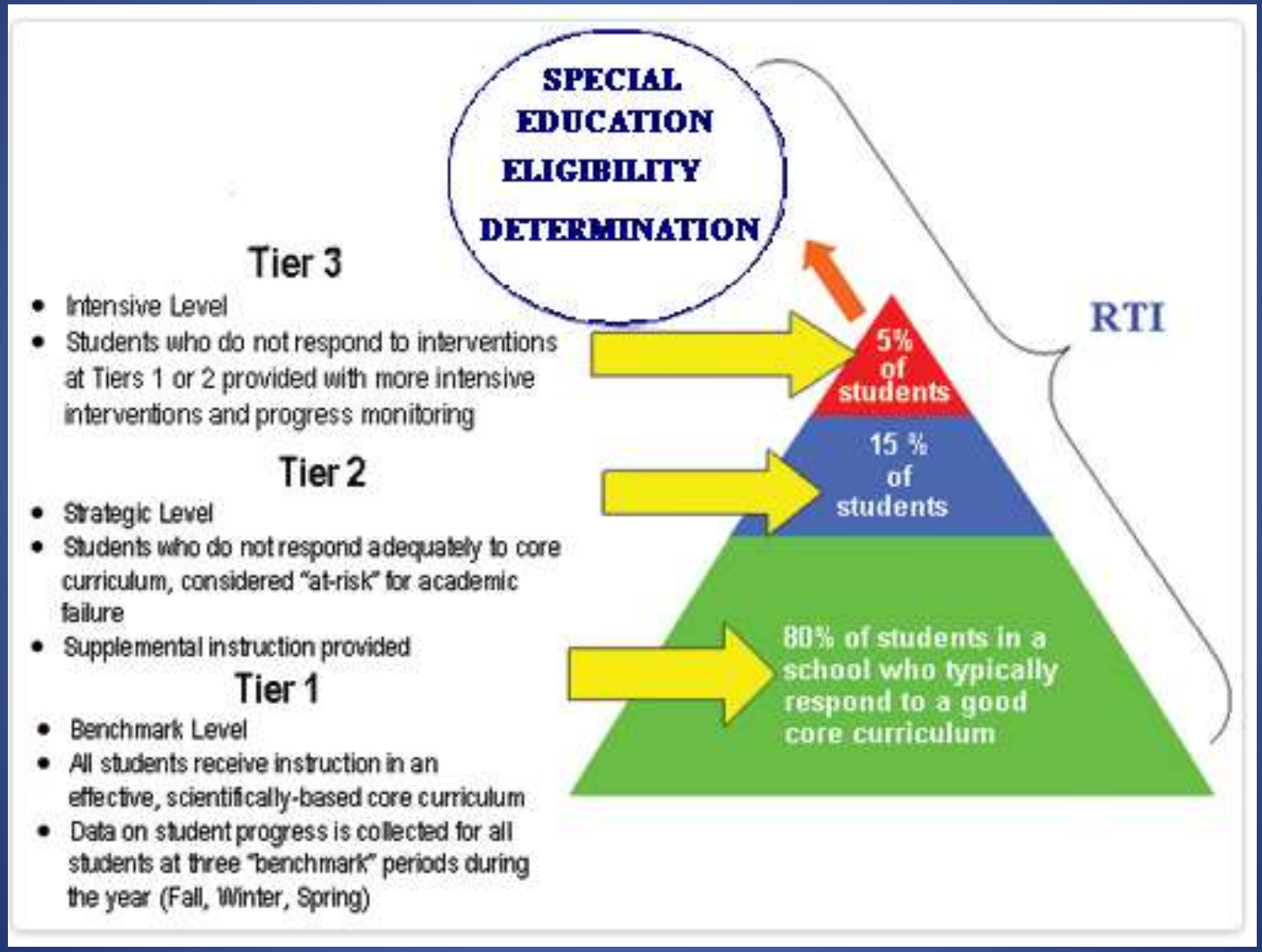
http://blogs.edweek.org/edweek/on_innovation/2014/12/new_study_shows_benefits_of_visual_game-based_math.html

TENMARKS an amazon company

https://www.tenmarks.com/

Grades 1 – Algebra 2 and Geometry

And what about students with an IEP?



http://coe.lehigh.edu/content/what-rti

Progress Check!

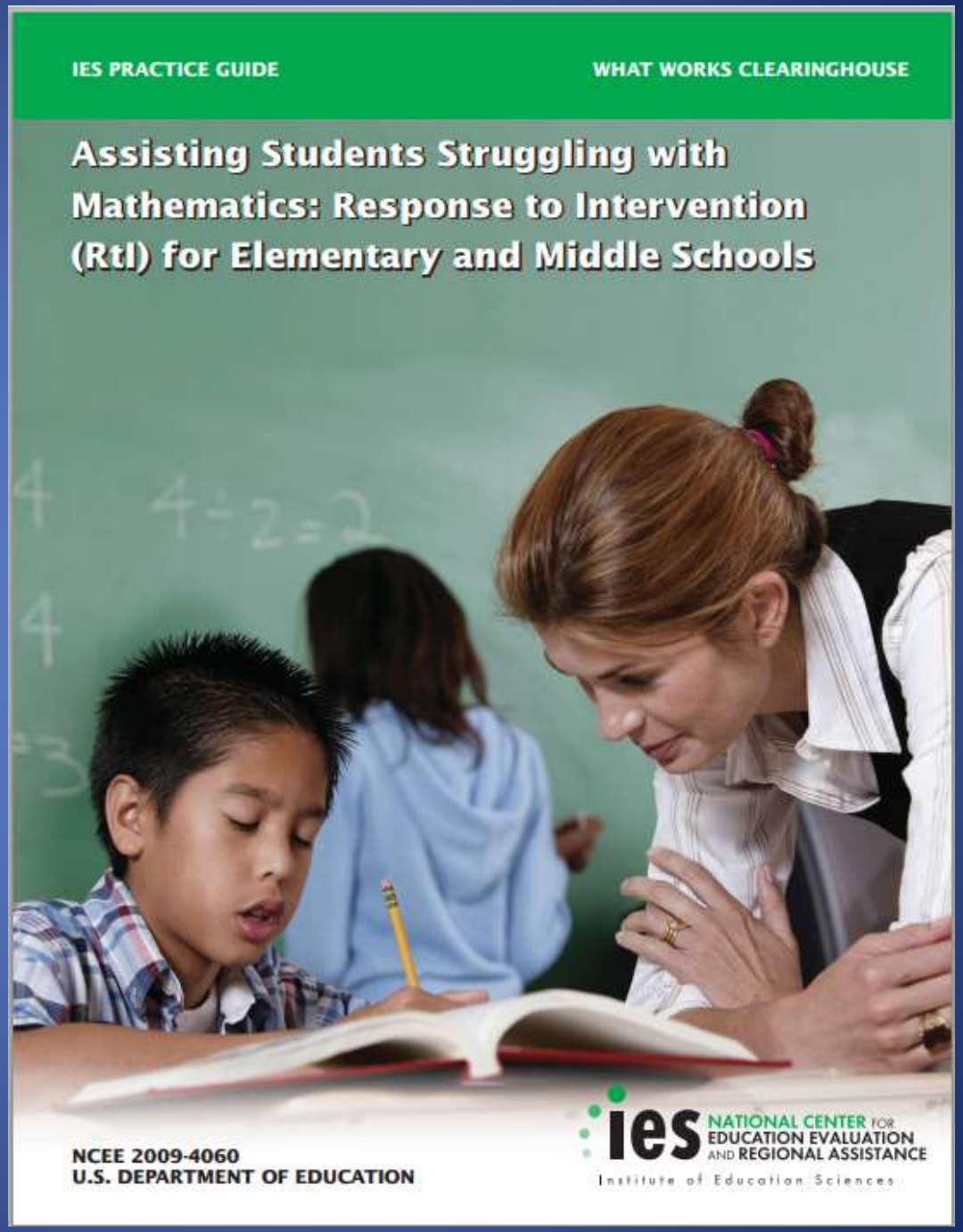
Let's do a Kahoot!

Join at: kahoot.it

https://play.kahoot.it/#/?quizId=e5536744-ba93-4e94-8cec-6d96b6240196

My “Go-to” Resource for Math SRBI:

http://ies.ed.gov/ncee/wWc/pdf/practice_guides/rti_math_pg_042109.pdf



Each recommendation includes:

1. Brief Summary
2. How to carry out the recommendation
3. Potential roadblocks and solutions

Table 2. Recommendations and corresponding levels of evidence

Recommendation	Level of evidence
Tier 1	
1. Screen all students to identify those at risk for potential mathematics difficulties and provide interventions to students identified as at risk.	Moderate
Tiers 2 and 3	
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. These materials should be selected by committee.	Low
3. Instruction during the intervention should be explicit and systematic. This includes providing models of proficient problem solving, verbalization of thought processes, guided practice, corrective feedback, and frequent cumulative review.	Strong
4. Interventions should include instruction on solving word problems that is based on common underlying structures.	Strong
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.	Moderate
6. Interventions at all grade levels should devote about 10 minutes in each session to building fluent retrieval of basic arithmetic facts.	Moderate
7. Monitor the progress of students receiving supplemental instruction and other students who are at risk.	Low
8. Include motivational strategies in tier 2 and tier 3 interventions.	Low

Source: Authors' compilation based on analysis described in text.

Recommendation 2:

- Instructional materials should focus intensely on in-depth treatment of:
  - Grades K-3: Number sense, place value of whole numbers and operations with whole numbers
  - In Gr.4-8: use an understanding of whole numbers to build conceptual framework and work with rational numbers, which are critical for future success in math
- Cover fewer topics in more depth and with coherence
- Intervention curriculum should not be over-simplified

Is my SRBI program aligned to the core curriculum?

- Alignment with the core curriculum is not as critical as ensuring that instruction builds students' foundational proficiencies.

- Tier 2 and tier 3 instruction focuses on foundational and often prerequisite skills that are determined by the students' rate of progress.

Recommendation 3:

- Instruction should be explicit and systematic:
  - Instruction should gradually build proficiency by introducing concepts in a logical order and providing students with numerous applications of each concept and skill
    - CCSS Shift: Rigor = conceptual understanding, procedural skill and fluency, and application
  - Explicit instruction ensures that students possess the foundational skills and conceptual knowledge necessary for understanding their grade-level mathematics

Explicit Instruction includes:

- Teacher demonstration of proficient problem solving with sufficient models
- Verbalization of the thought processes and the reasons behind math procedures, formulas, and problem-solving methods
  - Teachers should be knowledgeable enough to anticipate and address misconceptions
  - Include numerous clear models of easy and difficult problems, with accompanying teacher think-alouds

Explicit Instruction includes:

- Guided, scaffolded, extensive practice
  - Teacher should ask students to communicate the strategies they are using to complete each step of the process and provide reasons for their decisions
    - CCSS Math Practice #3: "Construct viable arguments and critique the reasoning of others."
- Teachers provide immediate, specific, actionable corrective feedback with opportunities to correct errors (with guidance, as needed)
- Frequent, cumulative review

Sal Khan's Words of Wisdom

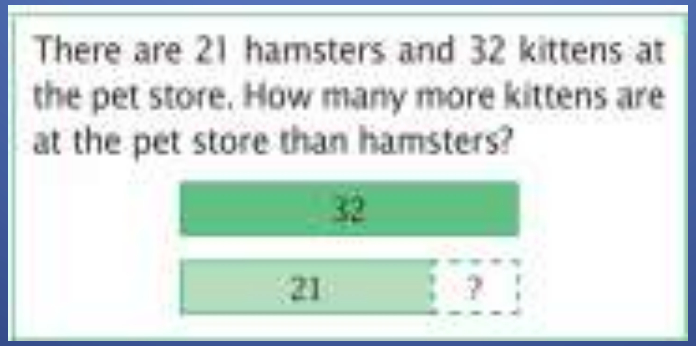
The Learning Myth:

Why I'll Never Tell My Son He's Smart

https://www.khanacademy.org/about/blog/post/95208400815/the-learning-myth-why-ill-never-tell-my-son-hes

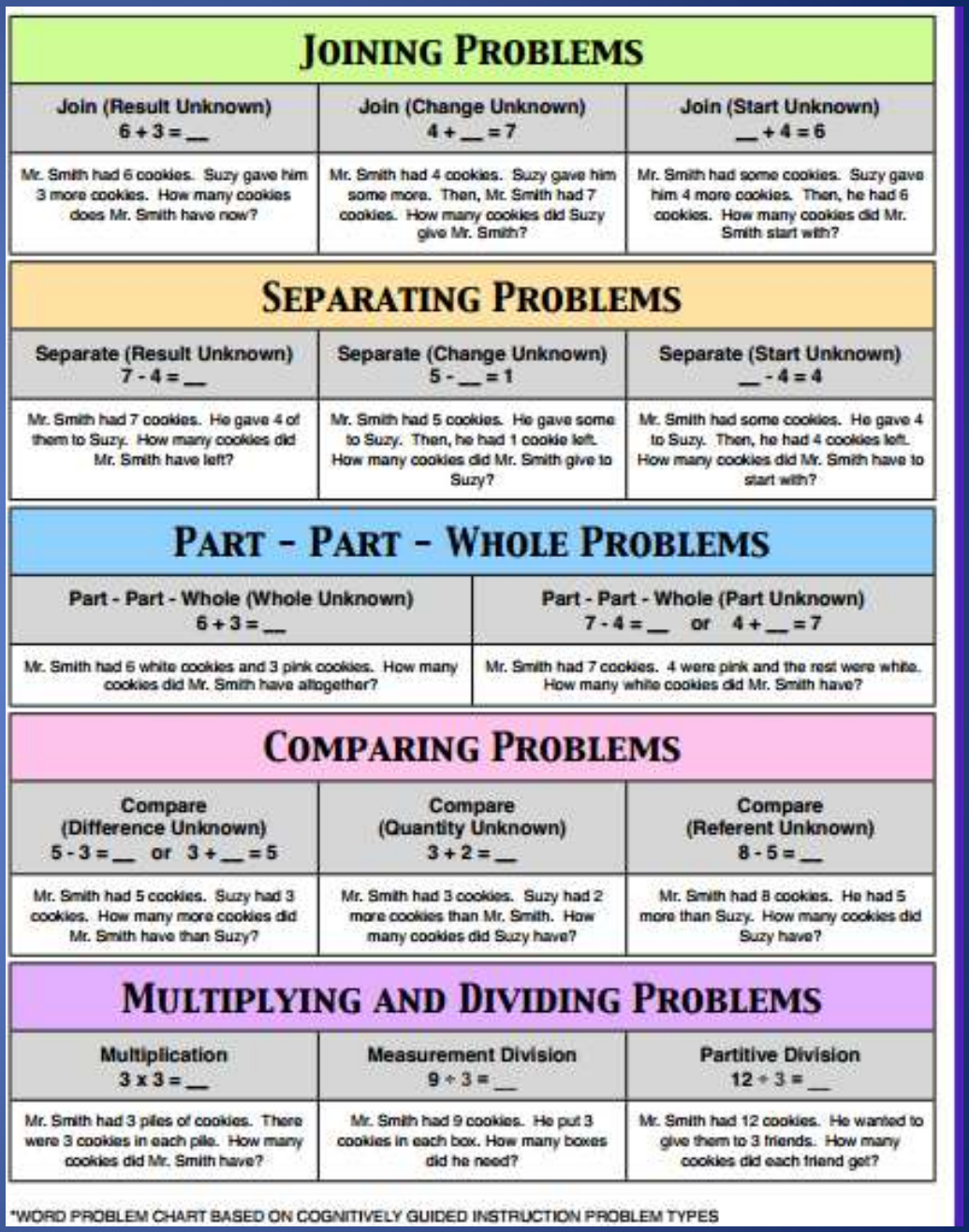
Recommendation 4:

- Interventions should include instruction on **solving word problems** that is **based on common underlying structures**
  - Visual representations can be effective for teaching students how to categorize problems based on their structure and determine a solution method appropriate for the underlying structure



Math Story Problem Types:

http://www.teachertipster.com/CGI_problem_types.pdf



JOINING PROBLEMS

Join (Result Unknown) 6 + 3 = __	Join (Change Unknown) 4 + __ = 7	Join (Start Unknown) __ + 4 = 6
Mr. Smith had 6 cookies. Suzy gave him 3 more cookies. How many cookies does Mr. Smith have now?	Mr. Smith had 4 cookies. Suzy gave him some more. Then, Mr. Smith had 7 cookies. How many cookies did Suzy give Mr. Smith?	Mr. Smith had some cookies. Suzy gave him 4 more cookies. Then, he had 6 cookies. How many cookies did Mr. Smith start with?

SEPARATING PROBLEMS

Separate (Result Unknown) 7 - 4 = __	Separate (Change Unknown) 5 - __ = 1	Separate (Start Unknown) __ - 4 = 4
Mr. Smith had 7 cookies. He gave 4 of them to Suzy. How many cookies did Mr. Smith have left?	Mr. Smith had 5 cookies. He gave some to Suzy. Then, he had 1 cookie left. How many cookies did Mr. Smith give to Suzy?	Mr. Smith had some cookies. He gave 4 to Suzy. Then, he had 4 cookies left. How many cookies did Mr. Smith have to start with?

PART - PART - WHOLE PROBLEMS

Part - Part - Whole (Whole Unknown) 6 + 3 = __	Part - Part - Whole (Part Unknown) 7 - 4 = __ or 4 + __ = 7
Mr. Smith had 6 white cookies and 3 pink cookies. How many cookies did Mr. Smith have altogether?	Mr. Smith had 7 cookies. 4 were pink and the rest were white. How many white cookies did Mr. Smith have?

COMPARING PROBLEMS

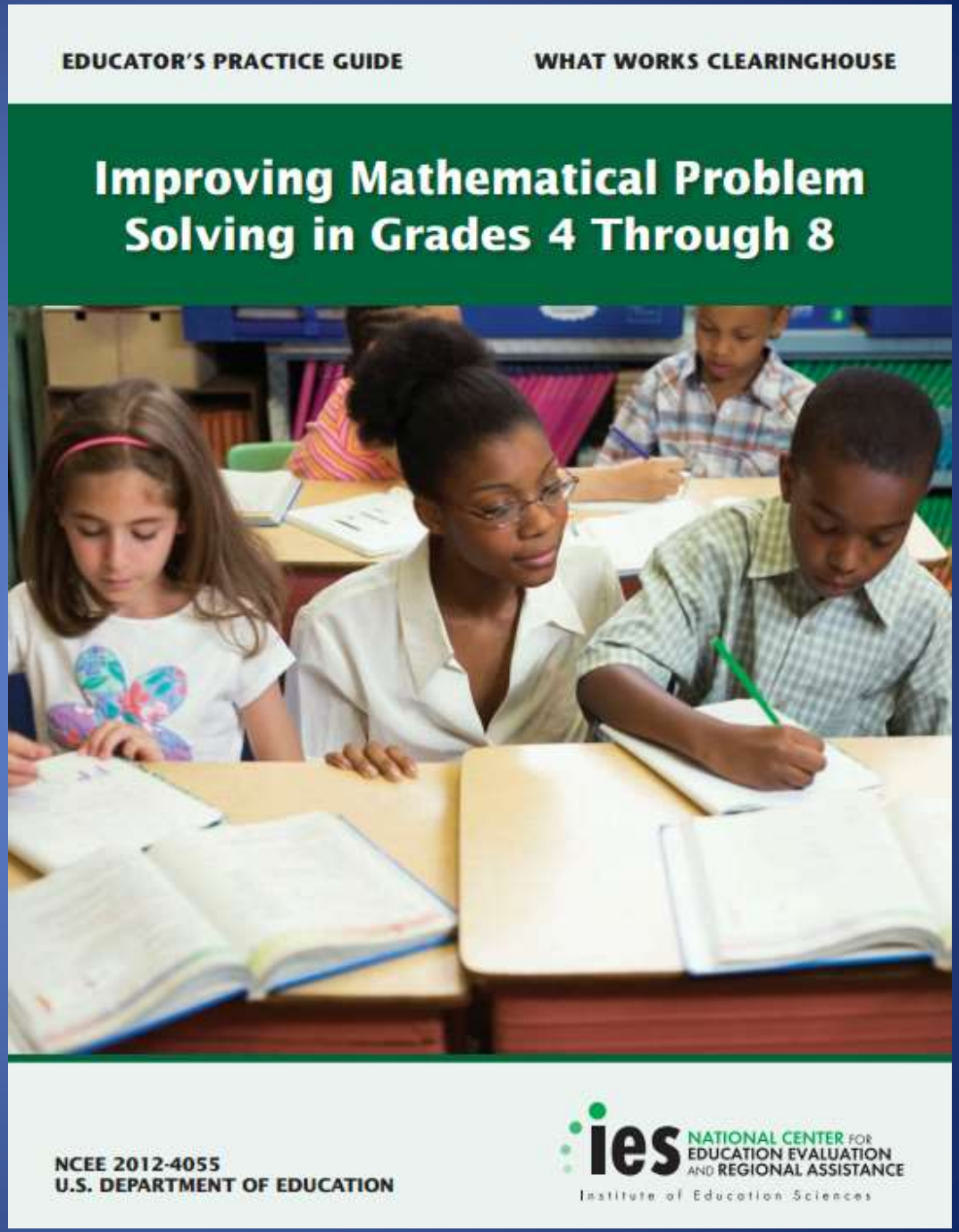
Compare (Difference Unknown) 5 - 3 = __ or 3 + __ = 5	Compare (Quantity Unknown) 3 + 2 = __	Compare (Referent Unknown) 8 - 5 = __
Mr. Smith had 5 cookies. Suzy had 3 cookies. How many more cookies did Mr. Smith have than Suzy?	Mr. Smith had 3 cookies. Suzy had 2 more cookies than Mr. Smith. How many cookies did Suzy have?	Mr. Smith had 8 cookies. He had 5 more than Suzy. How many cookies did Suzy have?

MULTIPLYING AND DIVIDING PROBLEMS

Multiplication 3 x 3 = __	Measurement Division 9 ÷ 3 = __	Partitive Division 12 ÷ 3 = __
Mr. Smith had 3 piles of cookies. There were 3 cookies in each pile. How many cookies did Mr. Smith have?	Mr. Smith had 9 cookies. He put 3 cookies in each box. How many boxes did he need?	Mr. Smith had 12 cookies. He wanted to give them to 3 friends. How many cookies did each friend get?

*WORD PROBLEM CHART BASED ON COGNITIVELY GUIDED INSTRUCTION PROBLEM TYPES

http://ies.ed.gov/ncee/wwc/pdf/practice_guides/mps_pg_052212.pdf



	Recommendation	Level of Evidence
1.	Prepare problems and use them in whole-class instruction.  Download Recommendation 1 (4.6 MB)  Play Presentation (5:17 minutes) Download Transcript (587 KB)	Minimal
2.	Assist students in monitoring and reflecting on the problem-solving process.  Download Recommendation 2 (4.6 MB)  Play Presentation (4:58 minutes) Download Transcript (540 KB)	Strong
3.	Teach students how to use visual representations.  Download Recommendation 3 (4.6 MB)  Play Presentation (4:51 minutes) Download Transcript (557 KB)	Strong
4.	Expose students to multiple problem-solving strategies.  Download Recommendation 4 (4.6 MB)  Play Presentation (2:18 minutes) Download Transcript (597 KB)	Moderate
5.	Help students recognize and articulate mathematical concepts and notation.  Download Recommendation 5 (4.6 MB)  Play Presentation (2:23 minutes) Download Transcript (921 KB)	Moderate

http://ies.ed.gov/ncee/wwc/PracticeGuide.aspx?sid=16

Recommendation 5:

- Intervention materials should include opportunities for students to work with **visual representations** of mathematical ideas

- Interventionists should be proficient in the use of visual representations of mathematical ideas

Recommendation 5:

- The ability to express mathematical ideas using visual representations and to convert visual representations into symbols is critical for success in mathematics
  - Visual representations such as number lines, number bonds, strip diagrams/bar models, concrete drawings, and other forms of pictorial representations help scaffold learning and pave the way for understanding the abstract version of the representation
  - Interventionists should explicitly link visual representations with the standard symbolic representations: CRA progression

The CRA Progression

Concrete stage	Representational stage	Abstract stage
A mathematical concept is introduced with manipulatives; students explore the concept using the manipulatives in purposeful activity.	A mathematical concept is represented using pictures of some sort to stand for the concrete objects (the manipulatives) of the previous stage; students demonstrate how they can both visualize and communicate the concept at a pictorial level.	Mathematical symbols (numerals, operation signs, etc.) are used to express the concept in symbolic language; students demonstrate their understanding of the mathematical concept using the language of mathematics.

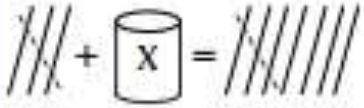
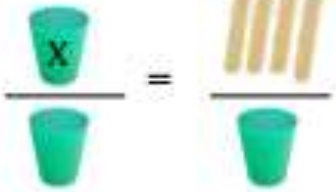
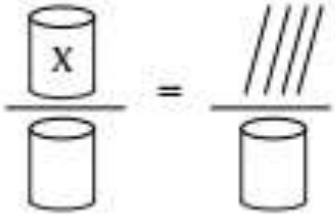
Research indicates that using manipulatives is especially useful for teaching low achievers, students with learning disabilities, and English language learners. (Marsh and Cooke, 1996; Ruzic and O'Connell, 2001)

Interventionists should allow students to continue to use manipulatives to demonstrate their understanding in the representational and abstract stages, if needed.

https://www.hand2mind.com/pdf/learning_place/research_math_manips.pdf

Example 8. A set of matched concrete, visual, and abstract representations to teach solving single-variable equations

3 + X = 7

Solving the Equation with Concrete Manipulatives (Cups and Sticks)	Solving the Equation with Visual Representations of Cups and Sticks	Solving the Equation with Abstract Symbols
A 		$3 + 1X = 7$
B 		$-3 \qquad -3$
C 		$\frac{1X}{1} = \frac{4}{1}$
D		
E 		$X = 4$

Concrete Steps

A. 3 sticks plus one group of X equals 7 sticks
B. Subtract 3 sticks from each side of the equation
C. The equation now reads as one group of X equals 4 sticks
D. Divide each side of the equation by one group
E. One group of X is equal to four sticks (i.e., 1X/group = 4 sticks/group; 1X = 4 sticks)

When it's Over

by Ron F. Ferguson, Ph.D.

The lesson ain't over
'til the skinny kid smiles
and signals that he understands.

April, 2000

Ronald F. Ferguson, Faculty Co-Chair and Director, Achievement Gap Initiative at Harvard University and Founder, the Tripod Project for School Improvement

Recommendation 6:

- Interventions at all grade levels should devote about 10 minutes in each session to building **fluent retrieval of basic arithmetic facts**.
  - Quick retrieval of basic math fats is critical for success in mathematics
  - Weak ability to fluently retrieve math facts impedes later understanding of rational number concepts

Recommendation 6:

- The goal is quick retrieval of facts using the digits 0 to 9 without any access to pencil and paper or manipulatives
  - Fact families are an efficient way to learn
- In grades 2-8, also include instruction on how to use the commutative, associative, and distributive properties to derive more complex facts in their heads

NCTM Wisdom:

February, 2104

Growth Mindset!

CCSS Math Practice #1:
Make sense of problems and persevere in solving them.

Mathematics Teaching Practices

Establish mathematics goals to focus learning. Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.

Implement tasks that promote reasoning and problem solving. Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies.

Use and connect mathematical representations. Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving.

Facilitate meaningful mathematical discourse. Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.

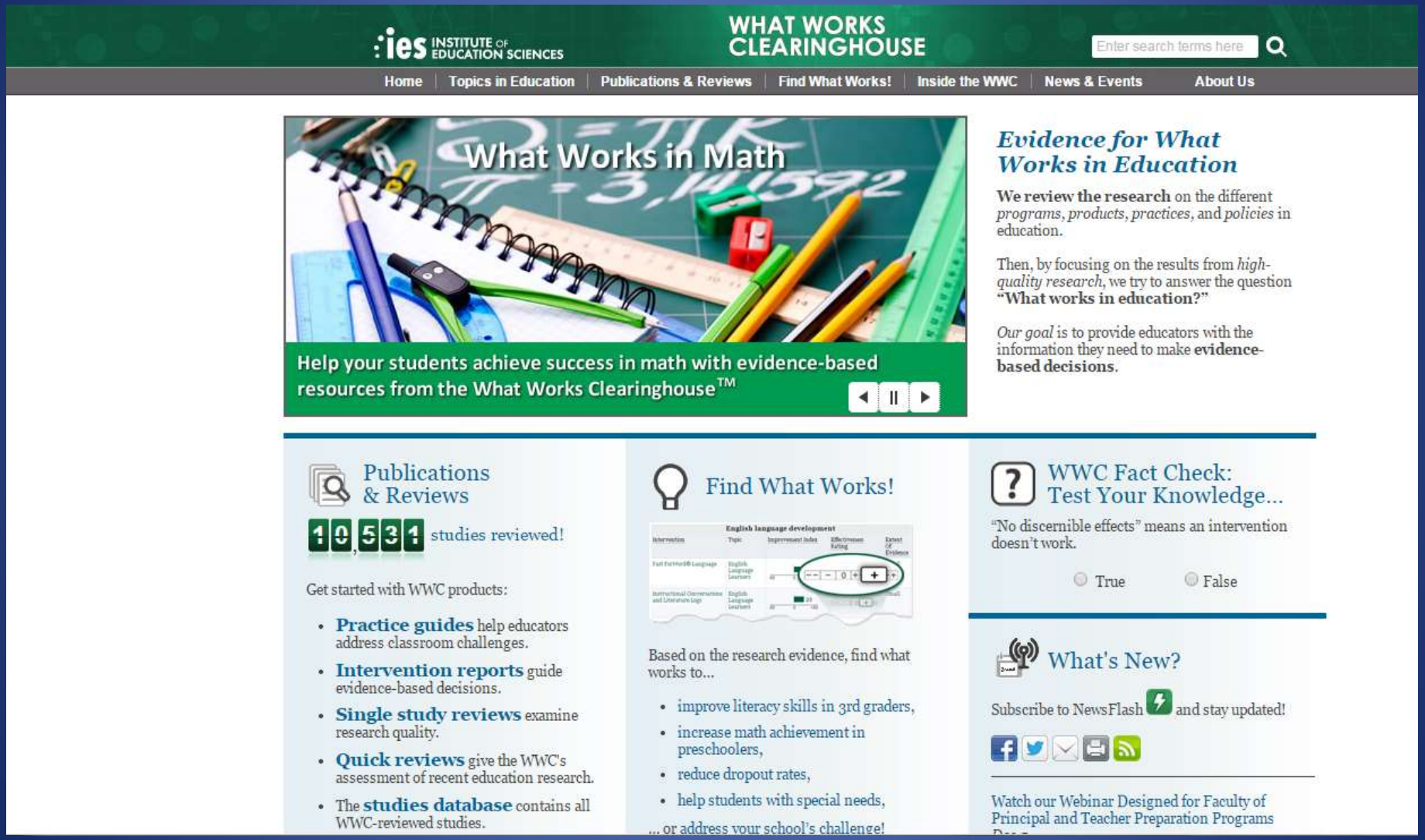
Pose purposeful questions. Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships.

Build procedural fluency from conceptual understanding. Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.

Support productive struggle in learning mathematics. Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships.

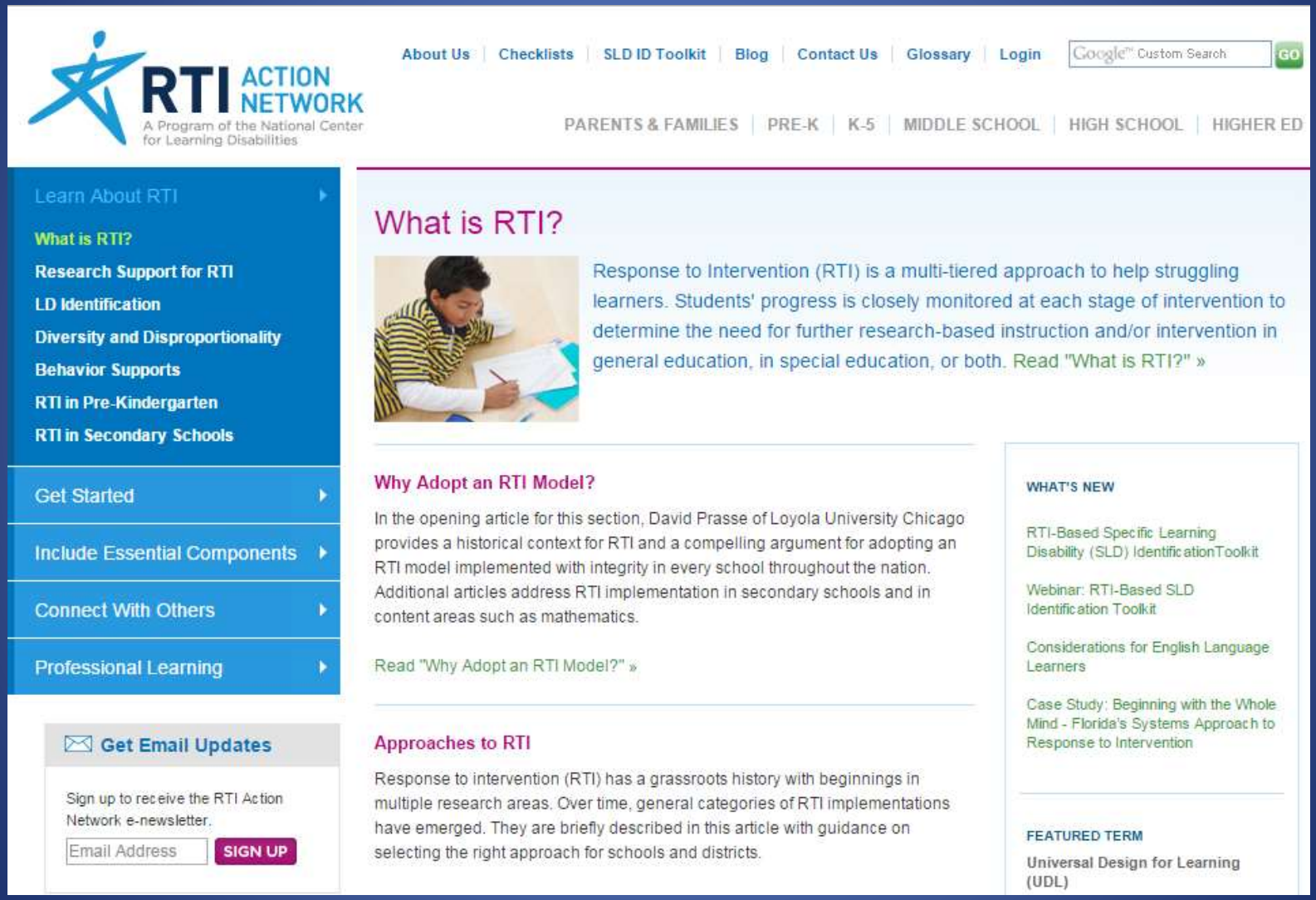
Elicit and use evidence of student thinking. Effective teaching of mathematics uses evidence of student thinking to assess progress toward mathematical understanding and to adjust instruction continually in ways that support and extend learning.

Resources: What Works Clearinghouse



http://ies.ed.gov/ncee/wwc/default.aspx

Resources: RTI Action Network

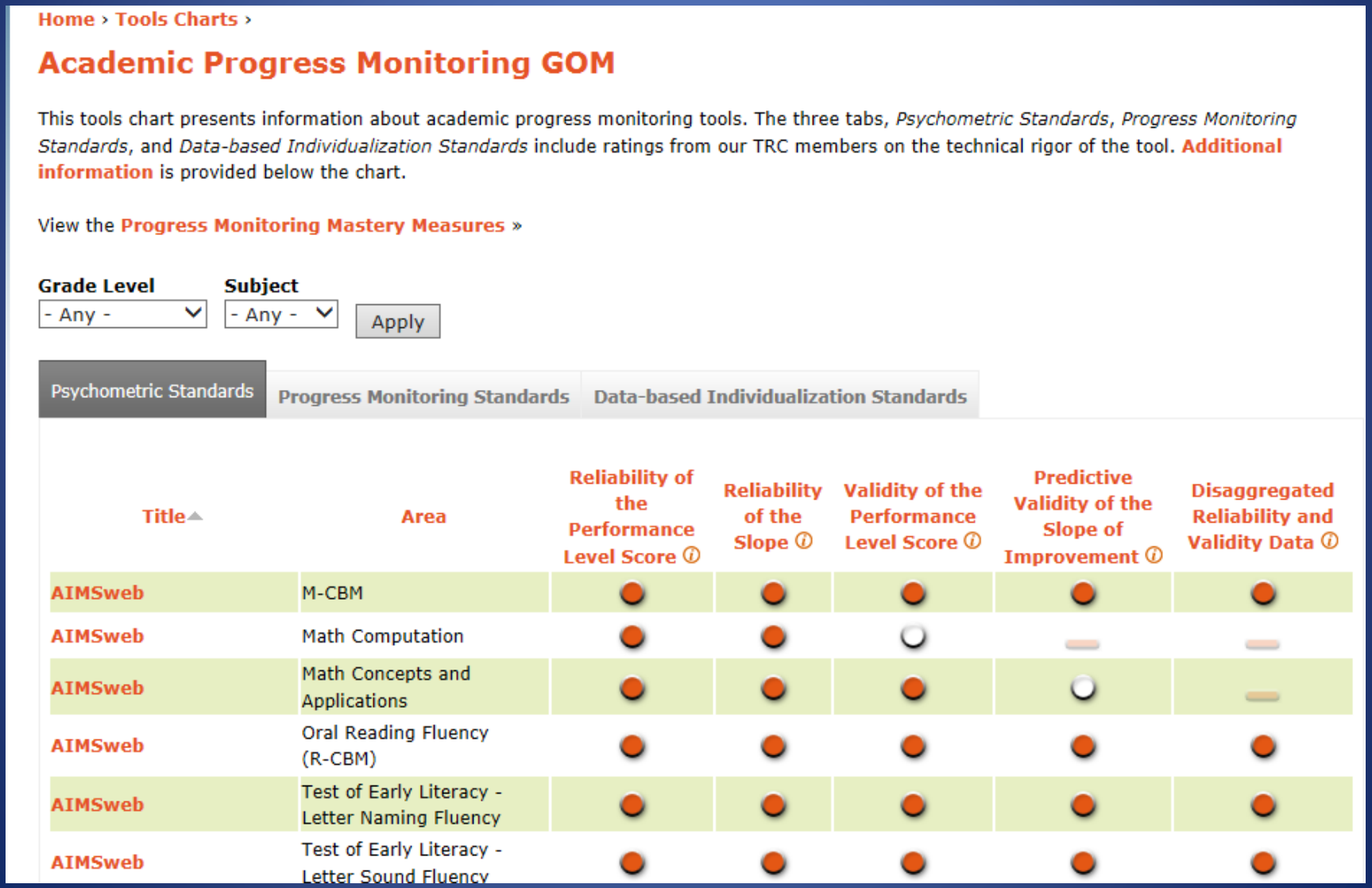


http://www.rtinetwork.org/learn/what

Resources: National Center on Intensive Intervention

http://www.intensiveintervention.org/resources/tools-charts

Resources: National Center on Intensive Intervention - Tools Chart



Home › Tools Charts ›

Academic Progress Monitoring GOM

This tools chart presents information about academic progress monitoring tools. The three tabs, *Psychometric Standards*, *Progress Monitoring Standards*, and *Data-based Individualization Standards* include ratings from our TRC members on the technical rigor of the tool. **Additional information** is provided below the chart.

View the **Progress Monitoring Mastery Measures** »

Grade Level - Any - **Subject** - Any - Apply

Psychometric Standards | Progress Monitoring Standards | Data-based Individualization Standards

Title	Area	Reliability of the Performance Level Score	Reliability of the Slope	Validity of the Performance Level Score	Predictive Validity of the Slope of Improvement	Disaggregated Reliability and Validity Data
AIMSweb	M-CBM	●	●	●	●	●
AIMSweb	Math Computation	●	●	○	—	—
AIMSweb	Math Concepts and Applications	●	●	●	○	—
AIMSweb	Oral Reading Fluency (R-CBM)	●	●	●	●	●
AIMSweb	Test of Early Literacy - Letter Naming Fluency	●	●	●	●	●
AIMSweb	Test of Early Literacy - Letter Sound Fluency	●	●	●	●	●

Center on
RESPONSE to INTERVENTION
at American Institutes for Research

RTI Implementer Series Self-paced Learning Modules

	Introduction	Screening	Progress Monitoring	Multi-level Prevention System
Defining the Essential Components	What Is RTI? (34:25)	What Is Screening? (18:09)	What Is Progress Monitoring? (37:37)	What Is a Multi-level Prevention System? (33:13)
Assessment and Data-based Decision Making	Understanding Types of Assessment within an RTI Framework (24:37)	Using Screening Data for Decision Making (58:32)	Using Progress Monitoring Data for Decision Making (53:10)[2]	IDEA and the Multi-level Prevention System (10:57)
Establishing Processes	Implementing RTI (35:58)	Establishing a Screening Process (12:40)		Selecting Evidence-based Practices (53:46)

http://www.rti4success.org/rti-implementer-series-self-paced-learning-modules

Common Core State Standards

Table 1. Progress to Algebra in Grades K–8

K	1	2	3	4	5	6	7	8
Know number names and the count sequence Count to tell the number of objects Compare numbers Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from Work with numbers 11-19 to gain foundations for place value	Represent and solve problems involving addition and subtraction Understand and apply properties of operations and the relationship between addition and subtraction Add and subtract within 20 Work with addition and subtraction equations Extend the counting sequence Understand place value Use place value understanding and properties of operations to add and subtract Measure lengths indirectly and by iterating length units	Represent and solve problems involving addition and subtraction Add and subtract within 20 Understand place value Use place value understanding and properties of operations to add and subtract Measure and estimate lengths in standard units Relate addition and subtraction to length	Represent & solve problems involving multiplication and division Understand properties of multiplication and the relationship between multiplication and division Multiply & divide within 100 Solve problems involving the four operations, and identify & explain patterns in arithmetic Develop understanding of fractions as numbers Solve problems involving measurement and estimation of intervals of time, liquid volumes, & masses of objects Geometric measurement: understand concepts of area and relate area to multiplication and to addition	Use the four operations with whole numbers to solve problems Generalize place value understanding for multi-digit whole numbers Use place value understanding and properties of operations to perform multi-digit arithmetic Extend understanding of fraction equivalence and ordering Build fractions from unit fractions by applying and extending previous understandings of operations Understand decimal notation for fractions, and compare decimal fractions	Understand the place value system Perform operations with multi-digit whole numbers and decimals to hundredths Use equivalent fractions as a strategy to add and subtract fractions Apply and extend previous understandings of multiplication and division to multiply and divide fractions Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition Graph points in the coordinate plane to solve real-world and mathematical problems*	Apply and extend previous understandings of multiplication and division to divide fractions by fractions Apply and extend previous understandings of numbers to the system of rational numbers Understand ratio concepts and use ratio reasoning to solve problems Apply and extend previous understandings of arithmetic to algebraic expressions Reason about and solve one-variable equations and inequalities Represent and analyze quantitative relationships between dependent and independent variables	Apply and extend previous understanding of operations with fractions to add, subtract, multiply, and divide rational numbers Analyze proportional relationship and use them to solve real-world and mathematical problems Use properties of operations to generate equivalent expressions Solve real-life and mathematical problems using numerical and algebraic expressions and equations	Work with radical and integer exponents Understand the connections between proportional relationships, lines, and linear equations** Analyze and solve linear equations and pairs of simultaneous linear equations Define, evaluate, and compare functions Use functions to model relationships between quantities

http://teacher.scholastic.com/products/math180/assets/CommonCoreProgressAlgebra.pdf

SRBI Planning Tool:

Last year:

Focus was on building strong foundational skills to support Tier 1 content

Math SRBI Planning Sheet for 2013-2014

		Tier 2	Tier 3
1st Quarter	6th	Fraction Concepts: Do the Math Now! Fraction Fundamentals	Whole Number Computation: Do the Math Now! Multiplication and Division
	7th	Fraction Concepts: Equivalence, order, compare, number line, mixed to improper, +/- like denominators	Fraction Concepts: Do the Math Now! Fraction Fundamentals Unit 6
	8th	Fraction Computation: Foundations for Algebra: Fractions and Decimals	Fraction Concepts: Do the Math Now! Fraction Fundamentals Units 8 and 9
2nd Quarter	6th	Fraction Concepts: Do the Math Now! Fraction Fundamentals	Whole Number Computation: Do the Math Now! Multiplication and Division
	7th	Fraction Computation: Foundations for Algebra: Fractions and Decimals	Fraction Concepts: Do the Math Now! Fraction Fundamentals Unit 7
	8th	Fraction Computation/ Ratios+ Proportions Foundations for Algebra: Fractions and Decimals	Fraction Computation: Do the Math Now! Fraction Fundamentals Foundations for Algebra: Fractions/ Decimals
3rd Quarter	6th	Fraction Computation: Do the Math Now! Fraction Fundamentals	Whole Number Computation: Do the Math Now! Multiplication and Division
	7th	Fraction / Decimal Computation: Foundations for Algebra: Fractions and Decimals	Fraction Concepts: Do the Math Now! Fraction Fundamentals Unit 8
	8th	Integers and Algebra: Foundations for Algebra: Integers, Equations	Fraction Computation: Foundations for Algebra: Fractions/ Decimals
4th Quarter	6th	(Finish) Fraction & (Begin) Decimal Computation: Do the Math Now! Fraction Fundamentals	Fraction Concepts: Do the Math Now! Fraction Fundamentals
	7th	Integers and Algebra: Foundations for Algebra: Integers, Equations	Fraction Concepts: Do the Math Now! Fraction Fundamentals Unit 9
	8th	Integers and Algebra: Foundations for Algebra: Integers, Equations	Ratios/Proportions / Integers Foundations for Algebra: Fractions/ Decimals Foundations for Algebra: Integers, Equations

SRBI Planning Tool:

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Grade 6, Tier 2	Fraction Concepts →		Fraction Computation → (Begin Decimal Computation, if time)	
Grade 6, Tier 3	Whole Number Computation →			Fraction Concepts
Grade 7, Tier 2	Fraction Concepts	Fraction Computation	Frac/Dec. Computation	Ratios/Proportions
Grade 7, Tier 3	Fraction Concepts →			
Grade 8, Tier 2	Fraction Computation	Fr.Comp./Ratios/Prop.	Integer Computation	Integers/ Algebra eq.
Grade 8, Tier 3	Fraction Concepts	Fraction Computation	Fraction Computation	Ratios/Propor/Integers

SRBI Planning Tool:

This year:

Focus is on remediating Tier 1 content from the prior marking period

Math SRBI Planning Sheet for 2014-2015

Tentative

		Tier 2 (not meeting gr level standard on unit assessments)	Tier 3 (more than 1 yr below grade level)
1st Quarter	6th	Prepping for Decimal Computation (reviewing gr 5 content)	ST Math time (gr 6 content), Fastt Math, & remediation curriculum (tbd)
	7th	Prepping for Fraction Computation (reviewing gr 6 content)	ST Math (Secondary Intervention) & Fastt Math
	8th	Prepping for The Number System (reviewing gr 7 content)	ST Math (Secondary Intervention) & Fastt Math
2nd Quarter	6th	Re-teaching standards from Understanding +/- #s, & Add/Sub/Mult Decimals	ST Math time (gr 6 content), Fastt Math, & remediation curriculum (tbd)
	7th	Re-teaching add/sub/mult/div rational #s	ST Math (Secondary Intervention) & Fastt Math
	8th	Re-teaching Pythagorean Theorem & Real Numbers	ST Math (Secondary Intervention) & Fastt Math
3rd Quarter	6th	Re-teaching standards from Division (whole #/dec/frac) & Expression & Eqs	ST Math time (gr 6 content), Fastt Math, & remediation curriculum (tbd)
	7th	Re-teaching Applications of Proportions & Connecting Tables/Graphs/Eqs	ST Math (Secondary Intervention) & Fastt Math
	8th	Re-teaching Volume of Cylinders/Cones/Spheres & Congruence & Similarity	ST Math (Secondary Intervention) & Fastt Math
4th Quarter	6th	Re-teaching standards from Geometry (SA & Volume) & Ratios, Rates, & Percents	ST Math time (gr 6 content), Fastt Math, & remediation curriculum (tbd)
	7th	Re-teaching Expressions & Equations & 2d & 3d Geometry & Measurement	ST Math (Secondary Intervention) & Fastt Math
	8th	Re-teaching Linear Relationships	ST Math (Secondary Intervention) & Fastt Math

Fact Fluency Program:

http://teacher.scholastic.com/math-fact-fluency/fastt-math-next-generation/

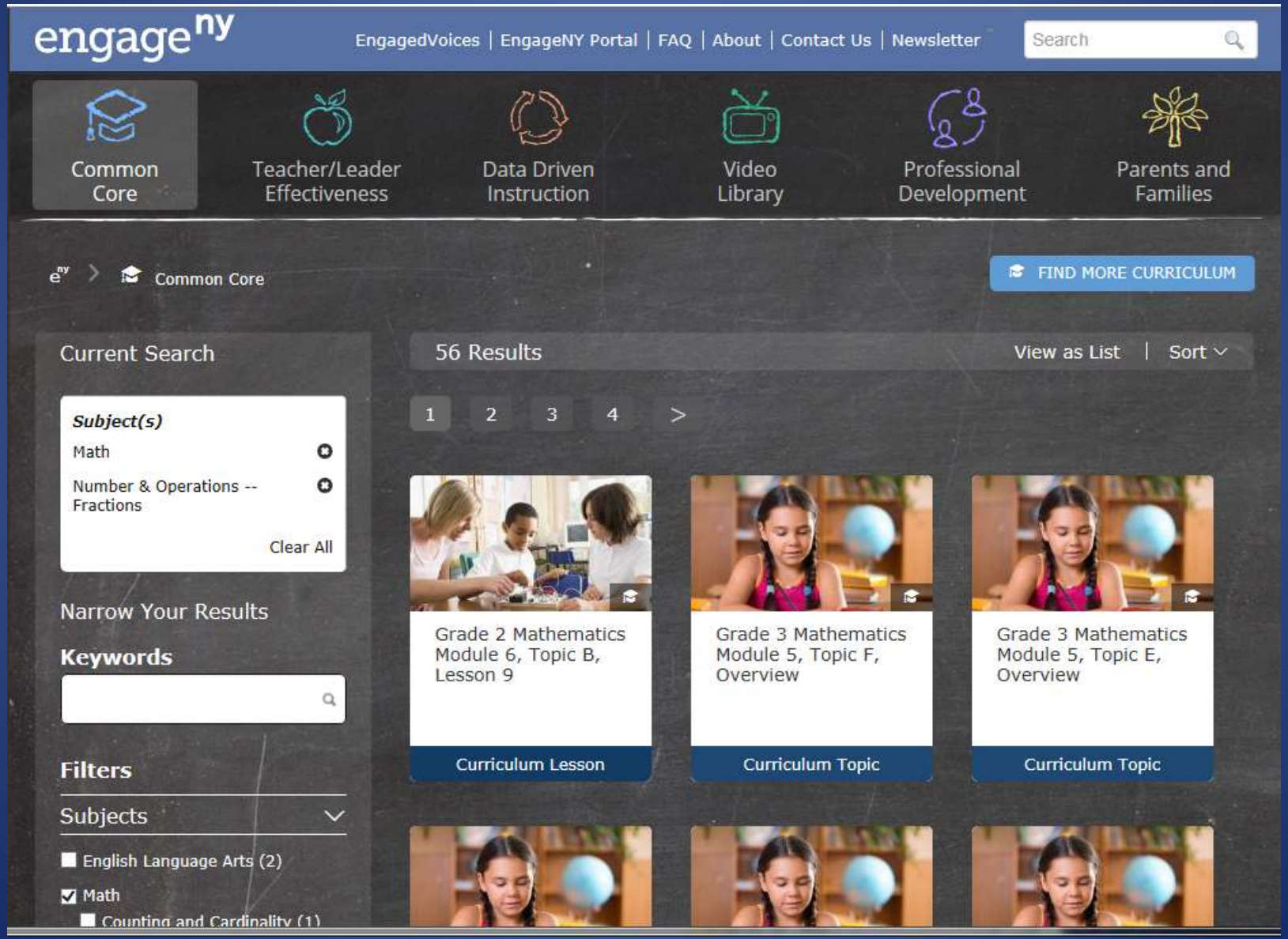
Renaissance Learning: Accelerated Math

http://www.renaissance.com/products/accelerated-math

Marilyn Burns' "Do the Math" program

http://teacher.scholastic.com/products/dothemath/dtmn_structure.htm

Engage NY.org



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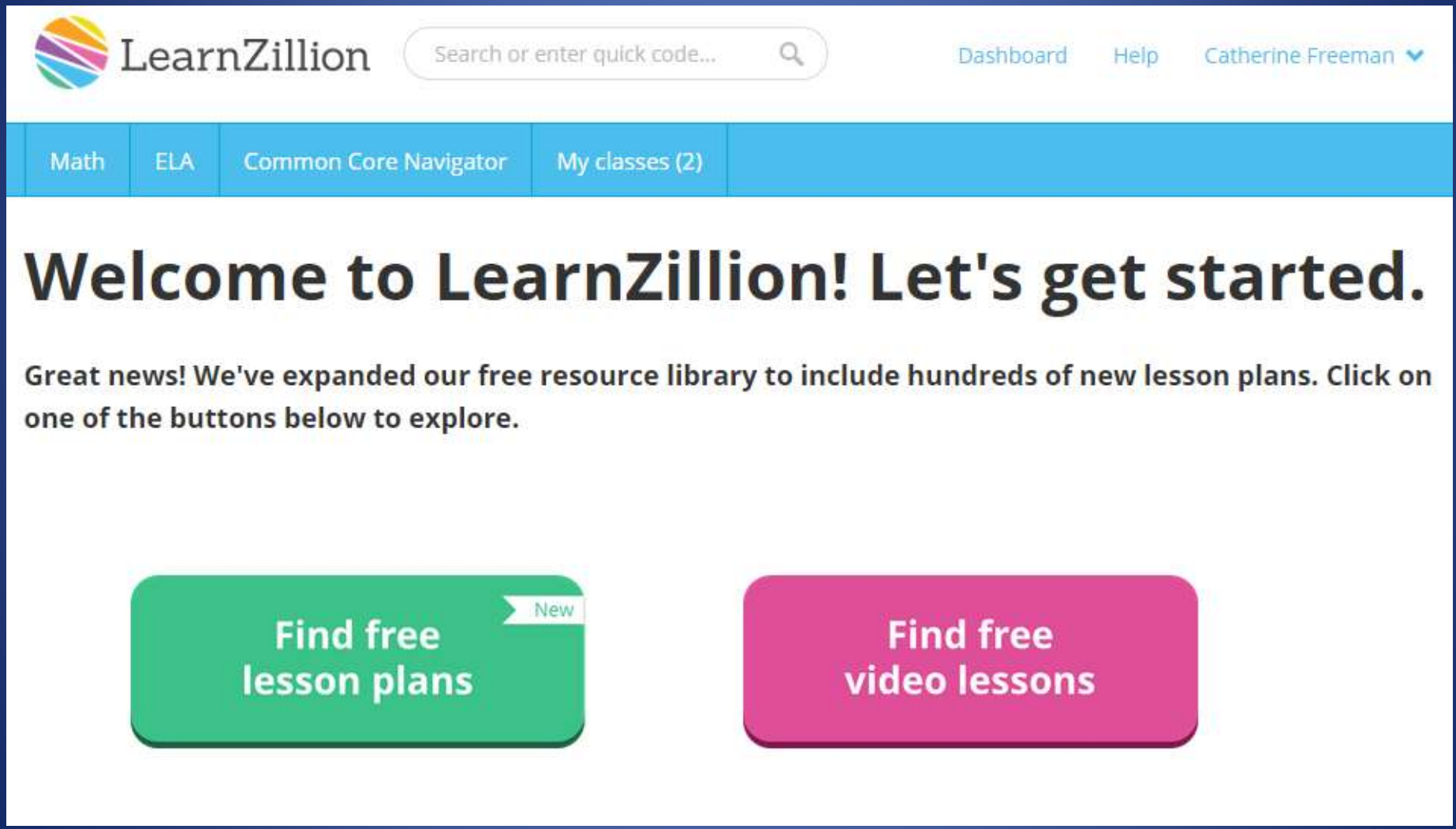

https://learnzillion.com/resources/17132

Persist

by Ron F. Ferguson, Ph.D.

There is no greater frustration
than to be stubbornly misunderstood
by a child who is afraid that she can't learn.

And there is no greater elation
than when the light of understanding
burns away the fear and makes her smile return.

April, 2000

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