



PALS Reading

PALS Math

GCASE

Spring 2011

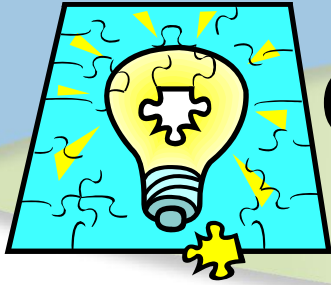
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Agenda

- Georgia POI/RTI
- Overview/Research on PALS Reading and Math
- Intro to PALS Math
- Intro to PALS Reading
- Iris Vanderbilt PALS-Reading Modules: Using technology to support SWD, ELL and struggling students



Guiding Thought

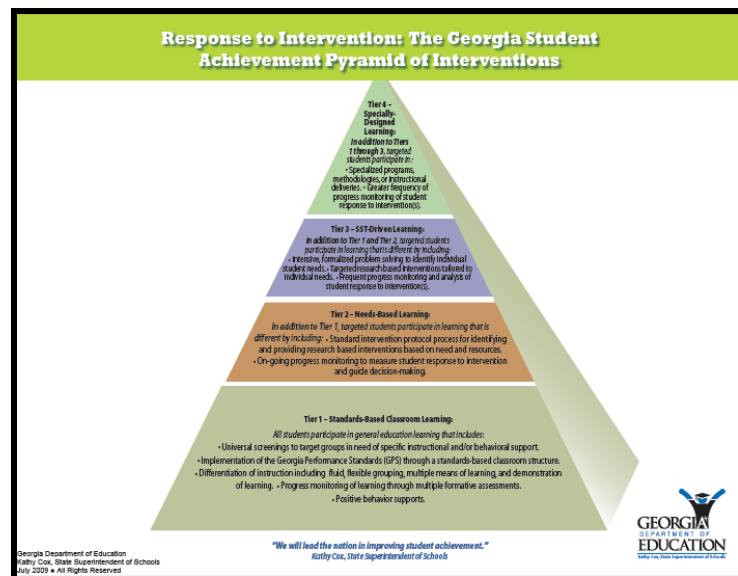
In 21st Century Education:

“We cannot continue to do the same things we have always done and expect different results”

Georgia's Pyramid of Interventions is the overarching structure and framework for Response to Intervention

“...a process which aligns appropriate assessment with purposeful instruction for all students

(page 6, GaDOE RTI Guide)



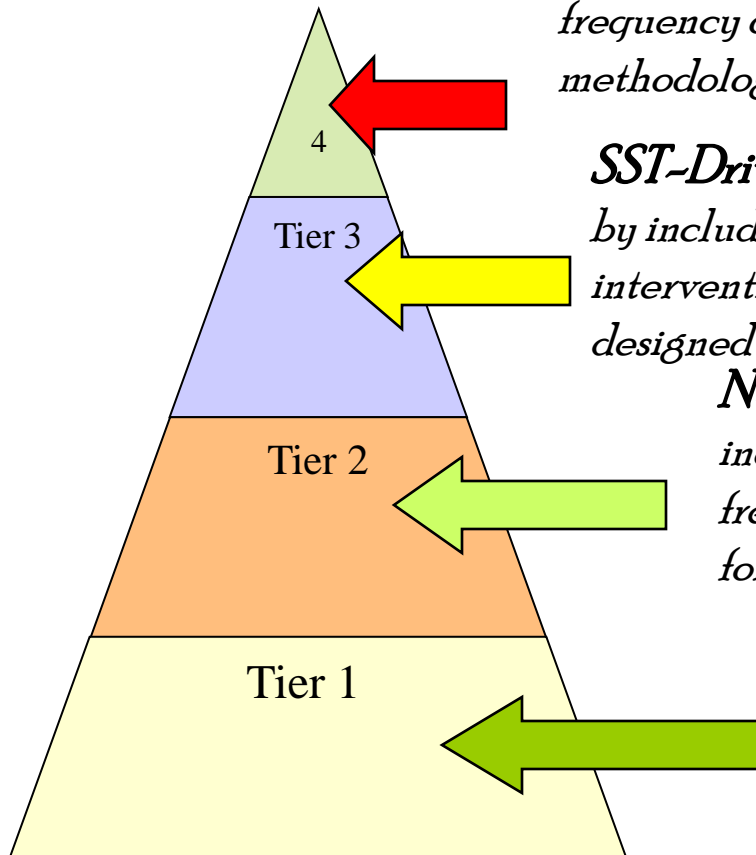
RTI National Approaches (NASP-Harn, 2007)

	Standard Protocol	Problem-Solving
Pros:	<ul style="list-style-type: none"> Prevention/intervention oriented Emphasis on SBRR Maybe easier for schools to implement? Problem defined in terms of responding to learner Intervention not the 	<ul style="list-style-type: none"> Prevention/intervention oriented Emphasis on SBRR Individualized interventions Sped Focus on learner Focus on Intervention not the
Cons:	<ul style="list-style-type: none"> Problem of responding to intervention? Fidelity of implementation Dependent on selection of “right” package Definition of a problem unclear? What is adequate response? Intervention needs to be proportional to the difficulty 	<ul style="list-style-type: none"> Representation is key Intervention (need a functional intervention) Definition of a problem is unclear? What is adequate response? Intervention needs to be proportional to the difficulty

Why not combine?
 Georgia's Hybrid Model
 Tier 2
 Standard Protocol
 Tier 3/SST
 Problem-Solving Process

Key elements

Georgia Pyramid of Interventions (SSTAGE, 2010)



Specially-Designed Learning: *GPS access/extension, greater frequency of progress monitoring, specialized programs, methodology or instructional delivery*

SST-Driven Learning: *In addition to Tier 1 and Tier 2 and different by including individualized assessments, formal progress monitoring, interventions tailored to individual needs, referral for specially-designed instruction if needed.*

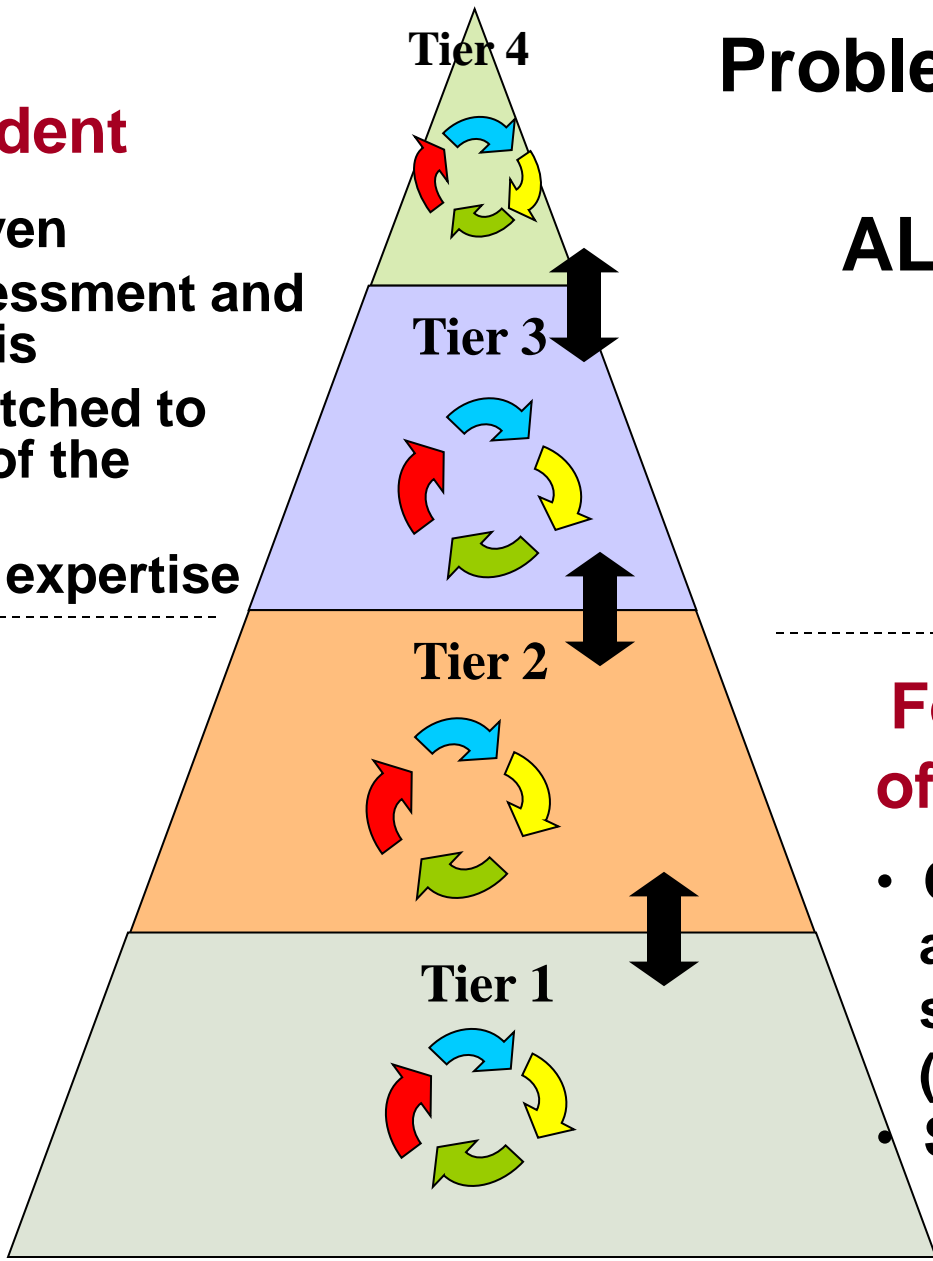
Needs-Based Learning: *In addition to Tier 1 and different by including specialized pyramids of intervention, greater frequency of progress monitoring of learning through multiple formative assessment and analysis of student work.*

Standards-Based Classroom Learning: *All students participate in general education learning that includes implementation of the GPS through research-based practices, through use of differentiation of instruction such as flexible grouping, varied instructional strategies and progress monitoring of learning through multiple formative assessment and analysis of student work. Positive Behavioral Interventions and Supports.*

Focus on the individual student

- Hypothesis-driven
- Diagnostic assessment and in-depth analysis
- Intervention matched to specific needs of the student
- Infuses diverse expertise

Problem Solving at ALL Tiers



Focus on groups of students

- Common assessments and screening (automatic triggers)
- Standards-based preplanned interventions

(Pennington, 2009-SSTAGE)

Tier 1 is the Foundation for ALL Tiers

Tier 1 is **the foundation** of the Pyramid.
Strengthening Tier 1 academic and behavioral supports is vital to the success at all other Tiers.

- Implement R-B strategies beginning with Tier 1
- Classroom management ; Differentiation
- *Common Core GPS*
- Teaching core foundational skills in reading, math, behavior
- Ongoing formative assessment
- Provide coaching, consultation, feedback

Pretest- Insert & Rank Order List:

Discussion

Practice by Doing

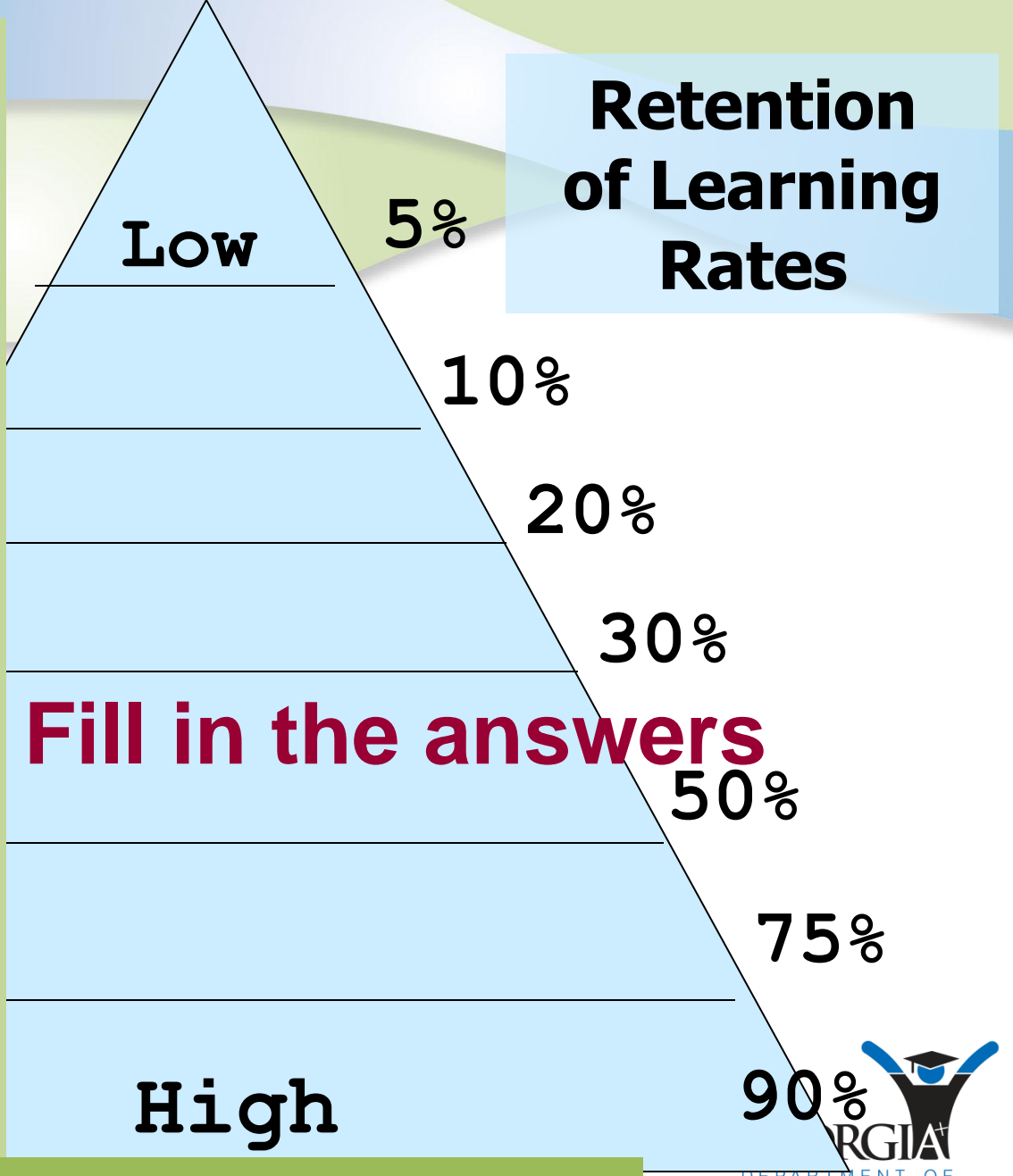
Lecture

Auditory/Visual

Teaching Others

Demonstration

Reading to Them

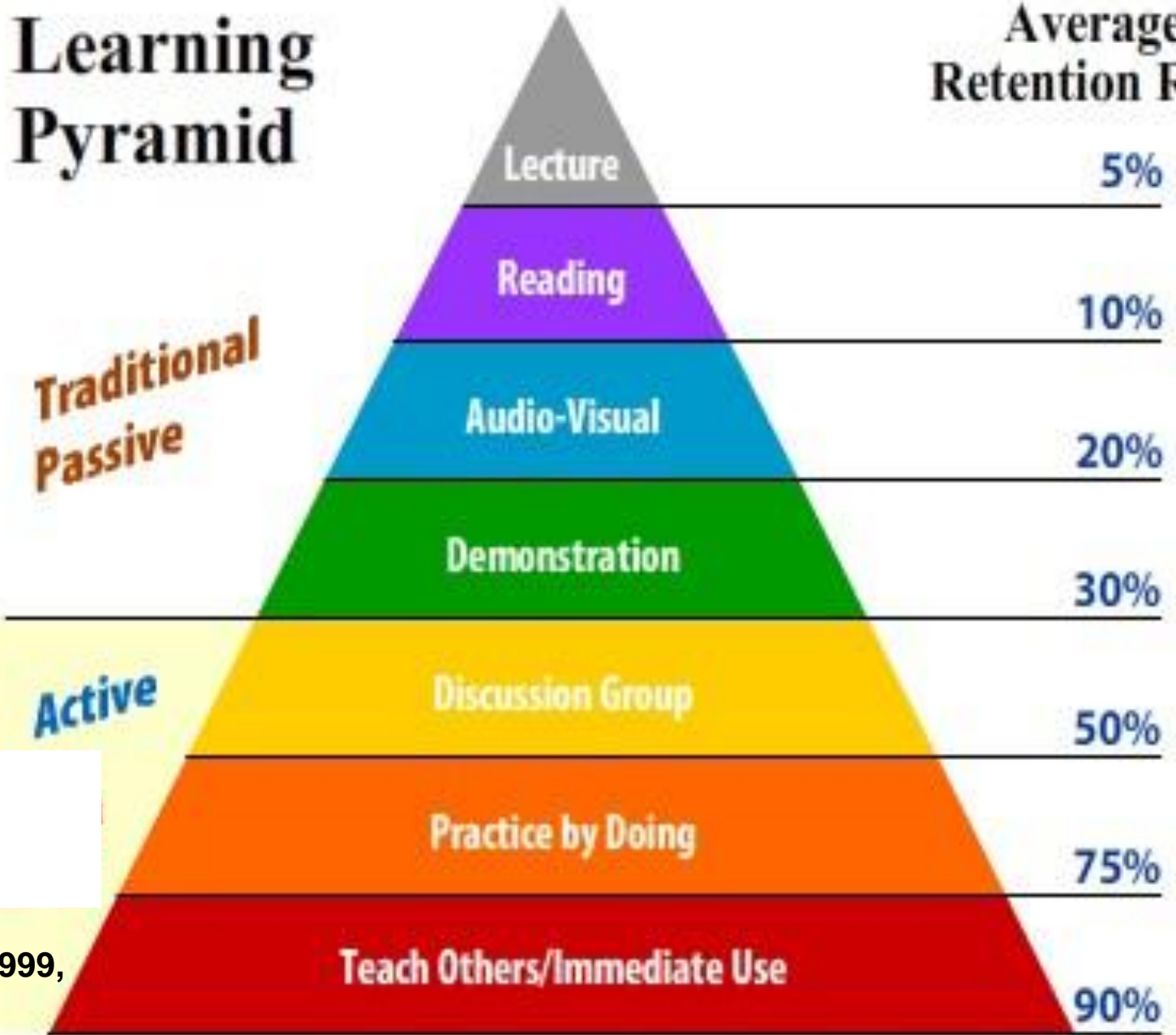


Pyramid of Learning

(Dale, 1960, LLC 1999, PENT-Browning-Wright, 2005)

Learning Pyramid

Average Retention Rate

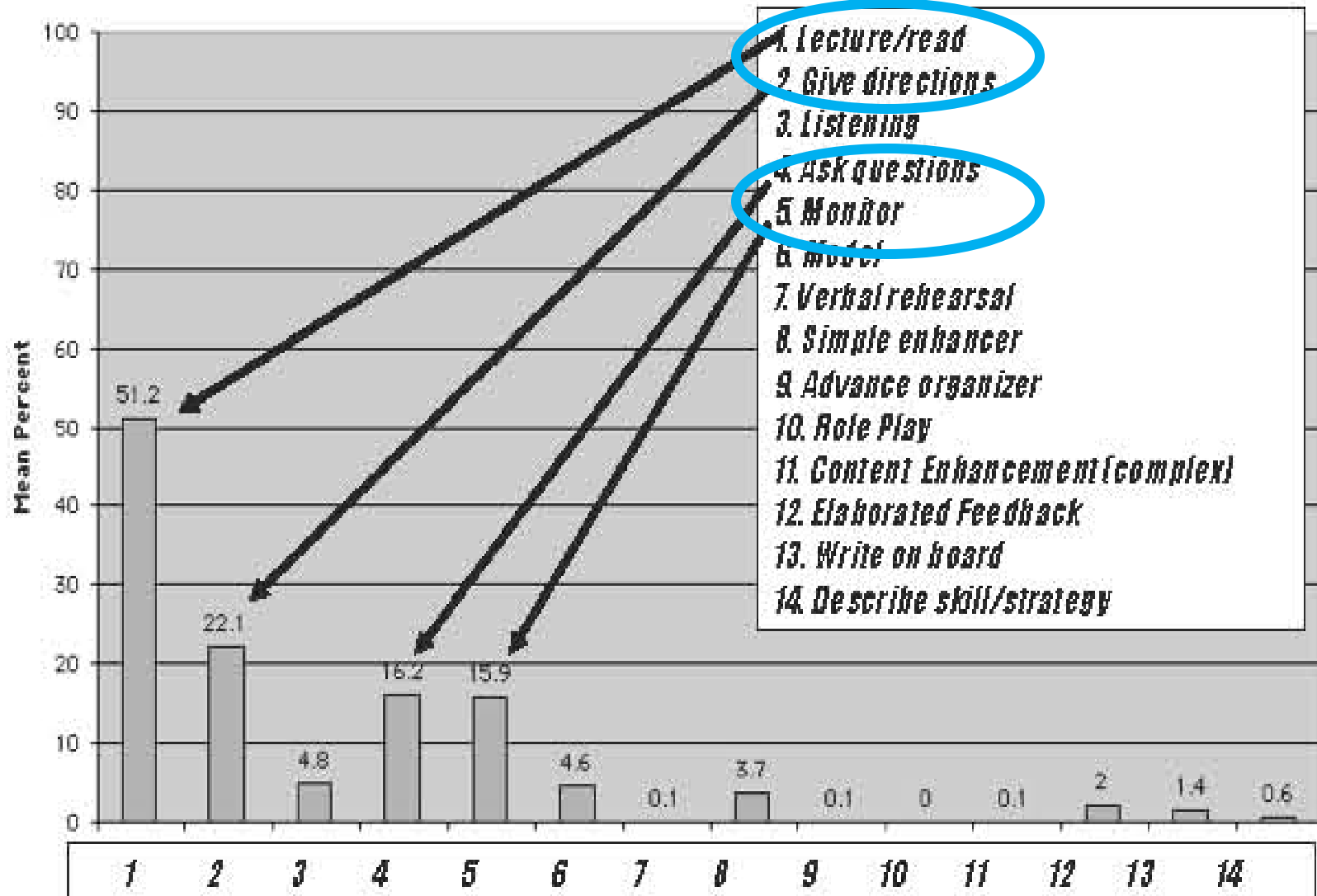


(Dale, 1960, LLC 1999, PENT-Browning-Wright, 2005)

Source: National Training Laboratories, Bethel, Maine

What activities do teachers use during instruction?

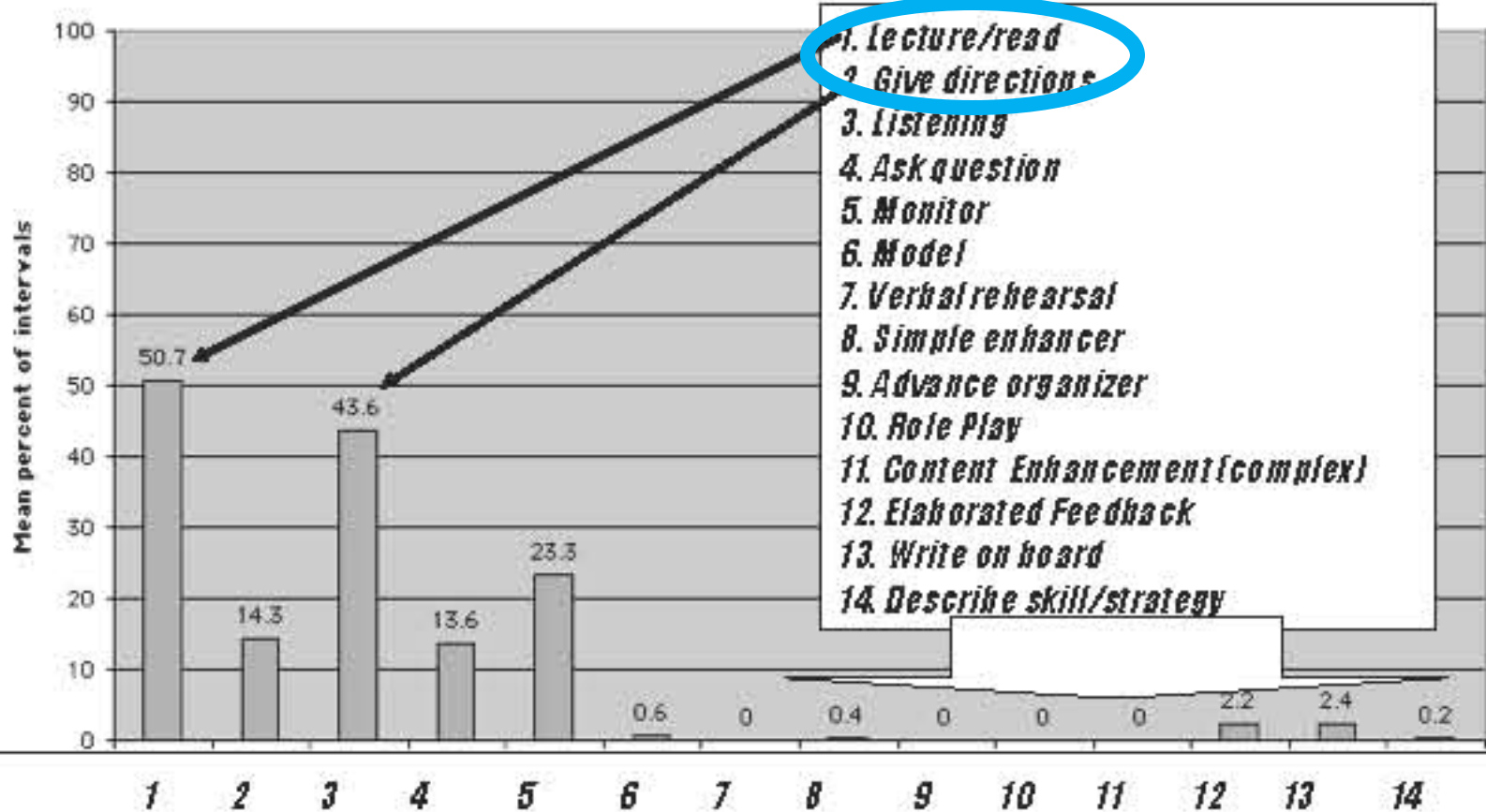
General Education Teacher Observation



(Hock, 2009; Schumaker, et al., Instructional Activities
2002; 2005)

What activities do Sp. Ed. teachers use during instruction?

Special Education Teacher Observations



(Hock, 2009; Schumaker, et al., 2002; 2005)

Instructional Activities



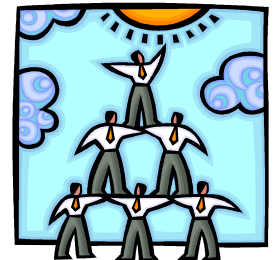
Tier 1: Build a solid foundation

Tier 1 Standards Based Classroom

- Sound differentiated classroom instruction
Teaching and Learning
- Data that drives instruction
- CCGPS/Performance Tasks Peer Assisted Learning, Cooperative Learning, PALS is one best practices example of research-learning:
 - Discussion
 - Practice by Doing
 - Teaching Others



these practices



There is a great deal of confusing language being used to 'qualify' strategies, interventions, programs and practices

Which is which?

- **Strategies**

- **Interventions:**

- Scientifically-Based
- Research-Based
- Evidence-Based



Strategies

- **Definition of Strategy**

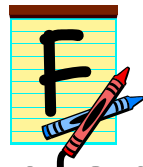
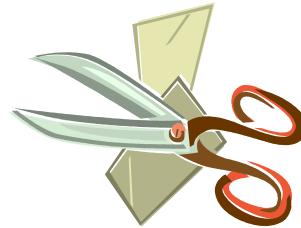
- A loosely defined collective term that is often used interchangeably with the word “intervention”; **however strategies are generally considered effective instructional and behavioral practices** rather than a set of prescribed instructional procedures, systematically implemented. (GaDOE RTI Guidance)



Interventions are NOT... (John McCook, 2006)



- Preferential seating
- Shortened assignments
- Parent contacts
- Classroom observations
- Suspension
- Doing MORE of the same
- Retention
- Peer helpers (informal)





Understanding Scientifically-Based Interventions

(NASP-Harn, 2007)

- ❖ NCLB Defines Scientifically Based Reading Research as:
 - (A) applies rigorous, systematic, and objective procedures to obtain valid knowledge relevant to reading development, reading instruction, and reading difficulties; and
 - (B) includes research that:
 - (i) employs **systematic, empirical methods** that draw on observation or experiment;
 - (ii) involves **rigorous data analyses** that are adequate to test the stated hypotheses and justify the general conclusions drawn;
 - (iii) relies on measurements or observational methods that provide **valid data across evaluators and observers and across multiple measurements and observations**; and
 - (iv) has been **accepted by a peer-reviewed journal** or approved by a **panel of independent experts** through a **comparably rigorous, objective, and scientific review**. (20 U. S. C. § 6368(6))

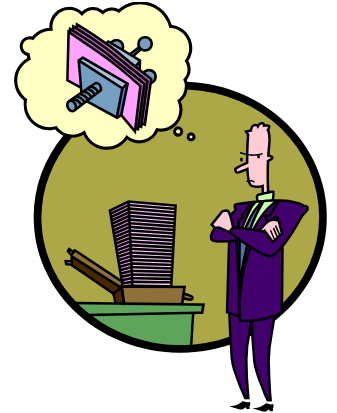
Interventions

- **Definition of an intervention**
 - Targeted instruction that is based on student needs.
 - Interventions supplement the general education curriculum.
 - Interventions are a systematic compilation of well researched or evidence-based specific instructional strategies and techniques. (GaDOE RTI Guidance)



Interventions should ...

- Be **connected to a specific goal** that is well-defined, observable and measurable
- **Have specific, defined, *step-by-step descriptions*** so they can be:
 - Implemented consistently
 - Can be replicated and researched
- **Include ongoing data, progress monitoring** of the student's response to the intervention



PALS Reading and Math

Peer Assisted Learning Strategies is a type of classwide peer tutoring that is used to improve reading and math skills.

- Teachers pair lower and high performing students, and the partners work on different activities that address the skills that are causing problems.
- The pairs are changed regularly, giving all students the opportunity to act as coaches and players.

PALS enables teachers to address individual student needs, as well as observe students and develop individual remedial lessons.

- It is a complementary intervention that teachers can use to augment their existing reading and math curricula.
- PALS is composed of 25-35 minute activities that are implemented 2-4 times a week.

PALS Research

(Fuchs & Fuchs,
retrieved March,
2011)

- Based on Juniper Gardens Classwide Peer Tutoring model
- More than 15 years of experimental research
- Title I and non-Title I schools
- Urban and suburban schools
- High, average, and low achievers
- SWD, struggling students, ELL students
- “Validated Practice” status from U.S. Department of Education
- Validated in reading (preschool through grade 6 and high school)
- Validated in math (kindergarten through grade 6)
- All students in a class are paired, so that higher and lower performing students work on highly structured activities.

PALS Research

- Best Practice status by US Dept Ed Program Effectiveness Panel for PALS Math and PALS Reading for inclusion in National Diffusion Network
- PALS Reading has been noted to show positive results on What Works Clearinghouse research website
- PALS Math is listed among best evidence-supported math programs on the John Hopkins University website, [Best Evidence Encyclopedias \(BEE\)](#).
- A body of research studies using experimental and quasi-experimental have shown positive outcomes in using PALS Reading and PALS Math with different student groups (ELL, SWD, struggling general education students)

NICHCY Math Research

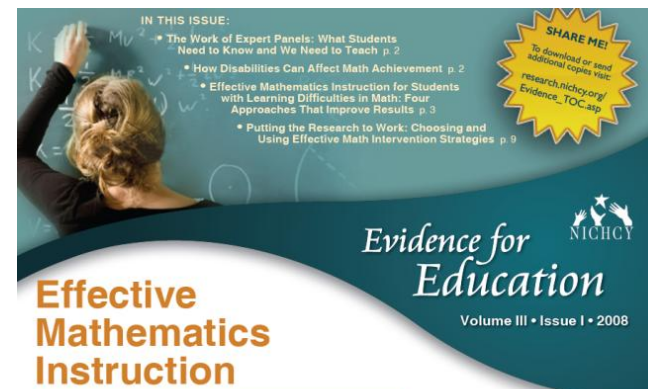
5 meta-analyses reviewing over 183 research studies on students with disabilities (Steadly et. Al., 2008; Evidence for Education 2008).

http://research.nichcy.org/Evidence_TOC.asp

Four approaches that improve results and show the most promise:

- Systematic and Explicit Instruction
- Self-instruction
- Peer Tutoring
- Visual Representation

National Dissemination Center for Children with Disabilities (NICHCY)



IN THIS ISSUE:

- The Work of Expert Panels: What Students Need to Know and We Need to Teach p. 2
- How Disabilities Can Affect Math Achievement p. 2
- Effective Mathematics Instruction for Students with Learning Difficulties in Math: Four Approaches That Improve Results p. 3
- Putting the Research to Work: Choosing and Using Effective Math Intervention Strategies p. 9

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Effective Mathematics Instruction

By Kathlyn Steedly, Ph.D., Kyrie Drago, M.Ed., Sousean Arafeh, Ph.D., & Stephen D. Luke, Ed.D.

"CAN YOU DO ADDITION?" The White Queen asked, "What's one and one and one and one and one and one and one and one and one and one?" "I don't know," said Alice. "I lost count."
—Lewis Carroll
Through the Looking Glass

We start this *Evidence for Education* with an odd, little quote that illustrates several things quickly about math. It's easy to get lost, especially if the question comes at you too fast, and once you get lost, well...

Well, we don't want students to get lost in math. This *Evidence for Education* is about helping students stay on track in math, building concept upon concept in a steady progression of skills. This is as much a national priority as it is a practical necessity for the students themselves, because daily life involves math—from the check-out counter at the school store to the express line in the grocery, from our most routine jobs to the high-paying, high-profile ones in mining, technology, and science (Lee, Grigg, & Dion, 7, U.S. Government Accountability Office, 2003).

So—two questions naturally arise: What do students need now: how to do, mathematically? And what instructional approaches are effective in teaching those skills?

This *Evidence for Education* addresses these questions, and one more: What do we do when disability affects a student's ability to learn math skills? That's the reality for literally millions of students in our schools; certain disabilities do add to the challenge of learning an already challenging subject. Therefore, what the research has to say about effective math instruction for students with disabilities is a vital tool in the hands of school personnel responsible for designing and delivering math programming. This publication offers just such research-based tools and guidance to teachers, administrators, and families.

We've divided the discussion into four sections, as follows:

- The work of four expert panels, which have recommended what students need to learn in math and what we need to teach;
- How disability can affect math learning;
- Four instructional approaches emerging from the research as effective math interventions for students with disabilities; and
- Suggestions for moving research into practice.

National Dissemination Center for Children with Disabilities (NICHCY)

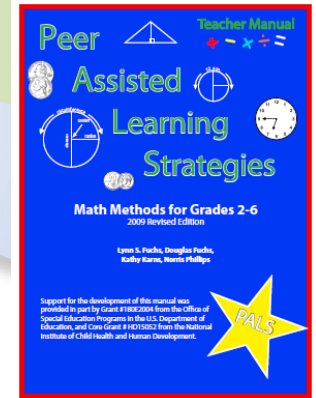
Research: Peer Tutoring Effectiveness

- Research shows that a variety of peer-tutoring intervention programs are effective in teaching math:
 - Classwide Peer Tutoring (CWPT)
 - Peer Assisted Learning Strategies (PALS)
 - Reciprocal Peer Tutoring (RPT)

PALS Math: Gr K-6

Structured Peer Tutoring Intervention

- Minimum of 30 minutes, 2 times per week
 - May be used more frequently, depending on student needs
-
- Teachers are “managers” of the intervention
 - Encouraged to assist students in making math connections
 - Students move past concepts and questions into conceptual knowledge by using
 - Real life examples
 - Discussing meaning and answers to problems
 - Use of manipulative(s) or concrete representations



Two Parts to Gr 2-6 PALS Math Lessons:

Coaching: 15-20 minutes

- Each of the partners work on math problems in a specific area
- The coach questions the player in order to guide the activity
- Coach has been trained on how to provide feedback

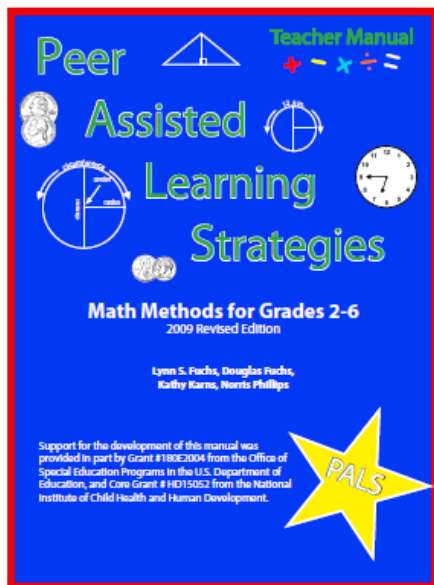
Practice: 5-10 minutes

- Students do independent practice worksheet with mix of difficult and less challenging problems
- Students exchange papers and score them
- Students earn points based on cooperation, explanations and accuracy

Math PALS Manuals

Each teacher needs a Teacher Manual and a Student Manual

- The Teacher Manual is for all teachers (blue)
- The Student Manual (at each grade) has the templates for copies
 - Grade 2 (yellow)
 - Grade 3 (red)
 - Grade 4 (green)
 - Grade 5 (purple)
 - Grade 6 (orange)



Math PALS Lessons

- Each Student Manual contains:
 - Computation lessons
 - Easiest to hardest
 - Applications lessons
 - Alphabetical order
- Teachers choose which lessons to use
 - Concurrent with curriculum
 - Review

Math PALS Lessons

- Two ways to do lessons:
 - All students in class work on same lesson
 - Pairs work on different lessons
 - Focus skill should help lower-performing student in pair

Math PALS Basics

- There are 2 PALS sessions each week
- A lesson lasts two weeks (Days 1 & 2, 3 & 4)
- Students are self-sufficient when doing PALS, but teacher facilitates to ensure the effectiveness of each pair
- Students are paired together
 - One student starts as Coach and one as Player – students switch roles halfway through Coaching part of lesson

Math PALS Basics

- During each PALS session:
 - Coaching (15-20 minutes)
 - Coach leads Player through half of Coaching Sheet
 - Coach and Player switch jobs
 - New Coach leads new Player through rest of Coaching Sheet
 - Students earn teacher-awarded points
 - Practice (10 minutes)
 - Every student completes Practice Sheet individually
 - Paired students grade each other's Practice Sheet
 - Students earn points for correct answers

Materials

- PALS folders
 - Each pair receives two folders:
 - Coach folder
 - Player folder
 - Folders are stuffed for a two-week lesson (Days 1, 2, 3, 4 of a lesson)

Skills Sequence

Grade 6

Peer Assisted Learning Strategies

6th Grade

Math Methods for Grades 2-6
2009 Revised Edition

Lynn S. Fuchs, Douglas Fuchs,
Kathy Karns, Norris Phillips

Support for the development of this manual was provided in part by Grant #180E2004 from the Office of Special Education Programs in the U.S. Department of Education, and Core Grant # HD15052 from the National Institute of Child Health and Human Development.

PALS



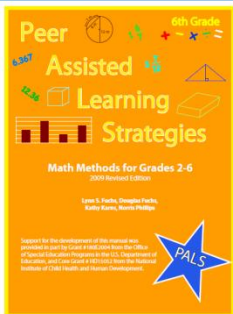
GRADE 6

COMPUTATION

Code	Operation	FOCUS
6A1	Adding	5-digit with regrouping
6S1	Subtracting	5-digit with regrouping
6M1	Multiplying	4-digit \times 3-digit with regrouping
6D1	Dividing	1, 2, & 3 step; 2-digit & 3-digit divisors
6F1	Adding/subtracting fractions	With like denominators
6F2	Adding/subtracting fractions	With unlike denominators
6F3	Multiplying and dividing fractions	With whole numbers & fractions
6.1	Adding and subtracting decimals	Line up and adding zeros (to ten thousandths)
6.2	Multiplying decimals	2-digit & 3-digit multipliers with regrouping
6.3	Dividing decimals	Decimals as dividends & divisors; 1 & 2 step

APPLICATIONS

6AC	Applied computation	1-2: Rounding whole numbers (to millions) 3-4: Rounding decimals (to ten thousandths)
6CG	Charts and graphs	Picture charts, bar graphs, schedules, & pie charts
6Ge	Geometry	1-2: Area & volume of triangles & parallelograms 3-4: Identifying segments, angles, polygons, diameters, chords, radii and arcs
6Me	Measurement	1-2: Converting times, distances, & weights 3-4: Adding & subtracting distances (with regrouping)
6Nu	Numeration	1-2: Prime or composite 3: Place value (to ten thousandths) 4: Writing decimals; mixed form to number form
6Pc	Percentages	Converting fractions, decimals and percentages
6Pp	Proportions	1-2: Fill-in the blank 3-4: Word problems
6RP	Ratios and probability	1-2: Writing ratios from word problems 3-4: Calculating probability from word problems
6Va	Variables	1-2: Writing equations 3-4: Solving equations
6WP	Word problems	1 & 2 step; addition, subtraction, multiplication, division, & money



Computation Lesson

Grade 6

6F1 Days 1-2

Adding Fractions With Like Denominators Coach's Question Sheet

1. Read the problem aloud.
2. Rewrite the problem, vertically, in the space below the first fraction.
3. Do you need to add or subtract the fractions?
4. Add the fractions.
5. Add the whole numbers if there are whole numbers in the problem.
6. Do you need to rename the fraction? If yes, do it. (If you need help, see Renaming Hint below)
7. Add renamed fraction to the whole number if there is a whole number.
8. Do you need to reduce your fraction to lowest terms? If yes, do it.
9. Write you answer in the circle.

Hint for Renaming When Adding
Is the numerator of the fraction less than, equal to, or greater than the denominator?
If LESS THAN, you do not need to rename the fraction.
If EQUAL TO, the fraction equals 1.

EXAMPLE: $\frac{3}{3} = 1$

If GREATER THAN, divide the numerator by the denominator. The quotient becomes a whole number, the remainder becomes the numerator, and the divisor remains the denominator. This number is your renamed fraction.

EXAMPLE: $\frac{9}{7} = 1\frac{2}{7}$

Diagram showing the division of 9 by 7: $7 \overline{)9} \begin{matrix} 1 \\ \underline{7} \\ 2 \end{matrix}$. Labels: Divisor (7), Quotient (1), Remainder (2).

5F1 Day 1

Adding Fractions With Like Denominators Coaching Sheet

Player's Name _____ Date _____

Coach's Name _____

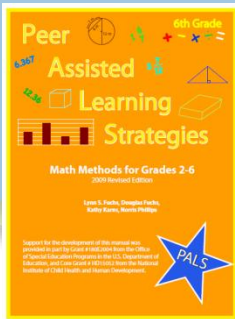
$\frac{7}{12} + \frac{8}{12} = \square$	$4\frac{6}{9} + 2\frac{4}{9} = \square$	$5\frac{3}{8} + 1\frac{5}{8} = \square$
_____	_____	_____
_____	_____	_____
+ _____	+ _____	+ _____

$\frac{4}{7} + \frac{6}{7} = \square$	$6\frac{3}{8} + 4\frac{7}{8} = \square$	$\frac{4}{9} + \frac{5}{9} = \square$
_____	_____	_____
_____	_____	_____
+ _____	+ _____	+ _____

$9\frac{3}{6} + 2\frac{5}{6} = \square$	$\frac{5}{10} + \frac{7}{10} = \square$	$8\frac{3}{7} + 3\frac{6}{7} = \square$
_____	_____	_____
_____	_____	_____
+ _____	+ _____	+ _____

$\frac{6}{8} + \frac{4}{8} = \square$	$3\frac{6}{9} + 5\frac{3}{9} = \square$	$2\frac{4}{10} + 6\frac{8}{10} = \square$
_____	_____	_____
_____	_____	_____
+ _____	+ _____	+ _____





Applications Lesson

Grade 6

Variables Coach's Question Sheet

6Va Days 1-2

1. Read the problem.
2. What is the first thing you need to find out?
3. Find the correct answer and point to it.
(If you need help, see Hint box below.)
4. Write the LETTER that is next to the correct answer in the blank.
5. What is the next thing you need to find out?
6. Replace the variable with the number.
7. Do you need to add, subtract, multiply, or divide? Do it.
8. Write your answer in the blank.

Hint for Variables

Sum refers to addition.
Difference refers to subtraction.
Product refers to multiplication.
Divided by refers to division.

6Va Day 2

Variables Coaching Sheet

Player's Name _____

Date _____

Coach's Name _____

Write the answers in the blanks.

Which expression matches the phrase: 36 divided by x ?

- (A) $\frac{36}{x}$
 (B) $36 + x$
 _____ (C) $\frac{x}{36}$

If $x = 9$, then the value of the expression is _____

Which expression matches the phrase: The difference between x and 26?

- (A) $\frac{x}{26}$
 (B) $x - 26$
 _____ (C) $x + 26$

If $x = 44$, then the value of the expression is _____

Which expression matches the phrase: y divided by 11?

- (A) $\frac{y}{11}$
 (B) $y \times 11$
 _____ (C) $\frac{11}{y}$

If $y = 33$, then the value of the expression is _____

Which expression matches the phrase: The product of n and 6?

- (A) $\frac{n}{6}$
 (B) $n - 6$
 _____ (C) $n \times 6$

If $n = 7$, then the value of the expression is _____

Which expression matches the phrase: The sum of y and 12?

- (A) $y \times 12$
 (B) $\frac{12}{y}$
 _____ (C) $y + 12$

If $y = 38$, then the value of the expression is _____

Which expression matches the phrase: The product of 8 and m ?

- (A) $8 \times m$
 (B) $8 - m$
 _____ (C) $8 + m$

If $m = 4$, then the value of the expression is _____

Which expression matches the phrase: The sum of 31 and x ?

- (A) $31 - x$
 (B) $31 + x$
 _____ (C) $\frac{x}{31}$

If $x = 11$, then the value of the expression is _____

Which expression matches the phrase: 28 divided by x ?

- (A) $\frac{x}{28}$
 (B) $\frac{28}{x}$
 _____ (C) $28 - x$

If $x = 4$, then the value of the expression is _____

Which expression matches the phrase: The product of 10 and n ?

- (A) $\frac{10}{n}$
 (B) $10 \times n$
 _____ (C) $10 - n$

If $n = 3$, then the value of the expression is _____

Which expression matches the phrase: The difference between 32 and y ?

- (A) $32 \times y$
 (B) $32 + y$
 _____ (C) $32 - y$

If $y = 19$, then the value of the expression is _____

Which expression matches the phrase: The difference between 47 and x ?

- (A) $47 - x$
 (B) $\frac{47}{x}$
 _____ (C) $47 + x$

If $x = 29$, then the value of the expression is _____

Which expression matches the phrase: The sum of 9 and y ?

- (A) $9 + y$
 (B) $9 - y$
 _____ (C) $9 \times y$

If $y = 29$, then the value of the expression is _____



How to assign PALS pairs

- Different ways to pair students (pages 23-24)
- Students are paired by the teacher
- Higher-performing students are paired with lower-performing students
- The higher-performing student is the Coach first
 - Students switch roles when they finish two rows (Computation) or when signaled on their gameboards by a flag (Applications)

PALS Timeline

- Training
 - Teacher trains using the simplest addition Computation
- Weeks 1-2
 - 2 sessions per week, only Computation PALS
- Weeks 3-4
 - Teacher trains on helping and explaining
 - Continue with Computation PALS
- Weeks 5-8
 - Teacher trains on strategies for giving mathematical explanations
 - Continue with Computation PALS
- Weeks 9-30
 - Teacher trains on Applications problem types
 - Continue with PALS, teacher can assign both Computation and Applications content for PALS

Training Students for PALS

- Training for PALS is 5 sessions

Teacher Explains:

- What is PALS? (Session 1)
- Role of Coach (Session 2)
 - How to lead activity and provide feedback
 - How to earn points
- Finishing Coaching (Session 3)
 - How to correct and narrate work
- How to complete Practice Sheets (Session 4)
- Session 5 is first session of new lesson
 - First time pairs do a full PALS lesson together

Helping and Explaining

- **Emphasis for Players:**
 - Ask the Coach for help
 - Keep asking until you understand

- **Emphasis for Coaches:**
 - Ask the Player if they need help
 - Ask the Player to explain something back to you

Helping and Explaining

WHEN YOU NEED HELP

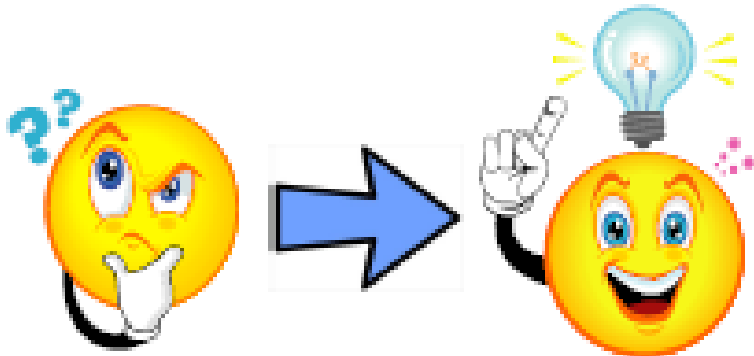
ASK for help.

KEEP ASKING until you understand.

GOOD EXPLANATIONS ...

Help Players learn something new.

Help Coaches understand something better!



WHEN YOU GIVE HELP

1. Pay careful attention to your partner.
2. If you think your partner needs help, offer to help.
3. Don't just give the answer. Explain how you partner can find the answer.
4. Ask questions that begin with what, where, when, how, and why to help your partner think about what the problem means.
5. If one explanation doesn't help, try another one.
6. If you have trouble explaining, ask your teacher for help.
7. Ask your partner to explain to back to you to find out if he/she really understands.

Giving Mathematical Explanations

- Teacher trains students on strategies to help with PALS
 - Lesson 1 - Real-life examples (video clip 3)
 - Lesson 2 - Discuss the meaning (video clip 4)
 - Lesson 3 - Make marks (video clip 5)
 - Lesson 4 - Use manipulatives (video clip 6)
 - Lesson 5 - Review (video clip 7)
- There are five scripts, but two can be used in one session to keep up with PALS time
- Scripts start on page 71

Giving Mathematical Explanations: Weeks 5-6

MATH STRATEGIES

1. Use Real-Life Examples



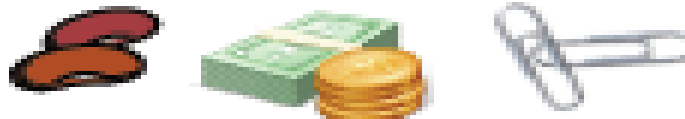
2. Discuss the Meaning

$$\begin{array}{r} 9 \\ - 4 \\ \hline \end{array} \quad 4 + 3 = \quad \begin{array}{r} 32 \\ + 8 \\ \hline \end{array}$$

3. Make Marks



4. Use Manipulatives



Math PALS Best Practices

- Use a timer during PALS, this will keep sessions to 30 minutes
 - Coaching (first Coach) 7-10 minutes
 - Coaching (second Coach) 7-10 minutes
 - Practice Sheet 5 minutes
 - Wrap-up 5 minutes

Math PALS Fidelity

- To check how well PALS is implemented, Fidelity Checklists can be used
- Fidelity Checks on:
 - **At lesson beginning** – teacher behaviors
 - **During Coaching** – teacher behaviors and 3 students pairs behavior
 - **During Practice** – teacher and student behaviors
 - **At lesson end** – teacher and student behaviors

PALS Math

http://iris.peabody.vanderbilt.edu/math/math_07.html

Summary

Important Features of Math PALS

- Reciprocal roles (Coaches and Players)
- Structured activities
- Individualized
- More time engaged on task
- Includes all students
- Opportunities for success for all students
- Encourages positive peer interactions
- Practical and effective
- Opportunities to monitor student progress

McGlinchey, Miblisi, r. March, 2011

PALS Reading

1. Partner Reading

11–12 minutes



2. Paragraph Shrinking

10 minutes



3. Prediction Relay

10 minutes



Pairs: Coaches and Players

- Higher performing readers are paired with lower performing readers
- **Coach**
 - Provides prompts and helps Reader; takes turn reading
- **Player**
 - Reads and accepts help from Coach; takes turn helping
- Partners remain the same for 4 weeks

PALS Reading Gr 2-6 Three Activities: First Is Partner Reading

Partner reading is conducted for 11–12 minutes.

- ☞ Stronger reader reads aloud for 5 minutes.
- ☞ Weaker reader reads same text aloud for 5 minutes.
- ☞ Weaker reader retells story for 1–2 minutes.
- ☞ Readers read quickly, correctly, and with expression.
- ☞ Coach listens, corrects mistakes, and marks points.
- ☞ Roles are switched, and steps are repeated.

Three Activities at Grades 2–6: Second Is Paragraph Shrinking

Paragraph shrinking is conducted for 10 minutes.

- Stronger reader reads new text aloud for 5 minutes, summarizing each paragraph:
 - Names the most important who or what.
 - Names the most important thing about the who or what.
 - Shrinks the paragraph to 10 or fewer words.
- Weaker reader reads new text aloud for 5 minutes, summarizing each paragraph.
- Coach listens, corrects mistakes, and marks points.
- Roles are switched, and steps are repeated.

Three Activities at Grades 2–6: Third Is Prediction Relay

Prediction relay is conducted for 10 minutes.

- Stronger reader
 - Reads one half page aloud.
 - Makes prediction.
 - Reads half page.
 - Checks prediction.
 - States main idea.
 - Makes new prediction.
 - Continues reading next half page and repeats.
- Coach listens, corrects errors, and marks points.
- Roles are switched, and steps are repeated on next text.

Common Principles of Small-Group Validated Tutoring

- Point system is used to motivate students.
- Corrective feedback is immediate.
- Students master content before moving on to more difficult activities.
- Tutors are trained to implement tutoring with high level of fidelity:
 - Practice with other tutors and non-tutored students
 - Meet weekly to problem solve and share ideas

Teacher Monitoring

- Teacher keeps time and gives directions to students for moving from activity to activity.
- During activities, teacher walks around room:
 - assists students and listens to students read,
 - listens for fluency,
 - gives feedback,
 - awards points for correct implementation and positive behaviors/cooperation.

Teams and Reward Structure

- Pairs keep point sheets.
- Teacher tallies points accumulated by pairs for each team weekly.
- Teacher announces first- and second-place teams each week, and students clap for public recognition.

High School PALS

- HS PALS is focused more on remediation
- Conduct PALS every other day, 35 – 40 minutes per session
- Conduct PALS at a regularly scheduled time
- SUPPLEMENT to regular reading program
- Your other teacher-directed reading instruction should cover reading objectives not covered during PALS

HS PALS

- Relies on the same dyadic structure, and the same three activities (Partner Reading, Paragraph Shrinking, and Prediction Relay) as PALS for grades 2-6.
- The motivational system was modified for older students, focusing on a "work" theme.
 - Instead of earning points as in PALS for elementary students, high schools students earn PALS "dollars" that are redeemed for tangible rewards.

HS PALS

- While elementary PALS students use fictional readings, high school PALS students also read expository text. Teachers are encouraged to select reading material that is perceived by students as useful, including informational texts about employment opportunities, life skills, and social relationships
- Unlike other versions of PALS that are intended to be primarily implemented in the inclusive general education setting, PALS for high school students has typically been used by special educators and remedial reading teachers for students with more significant reading problems.

HS PALS

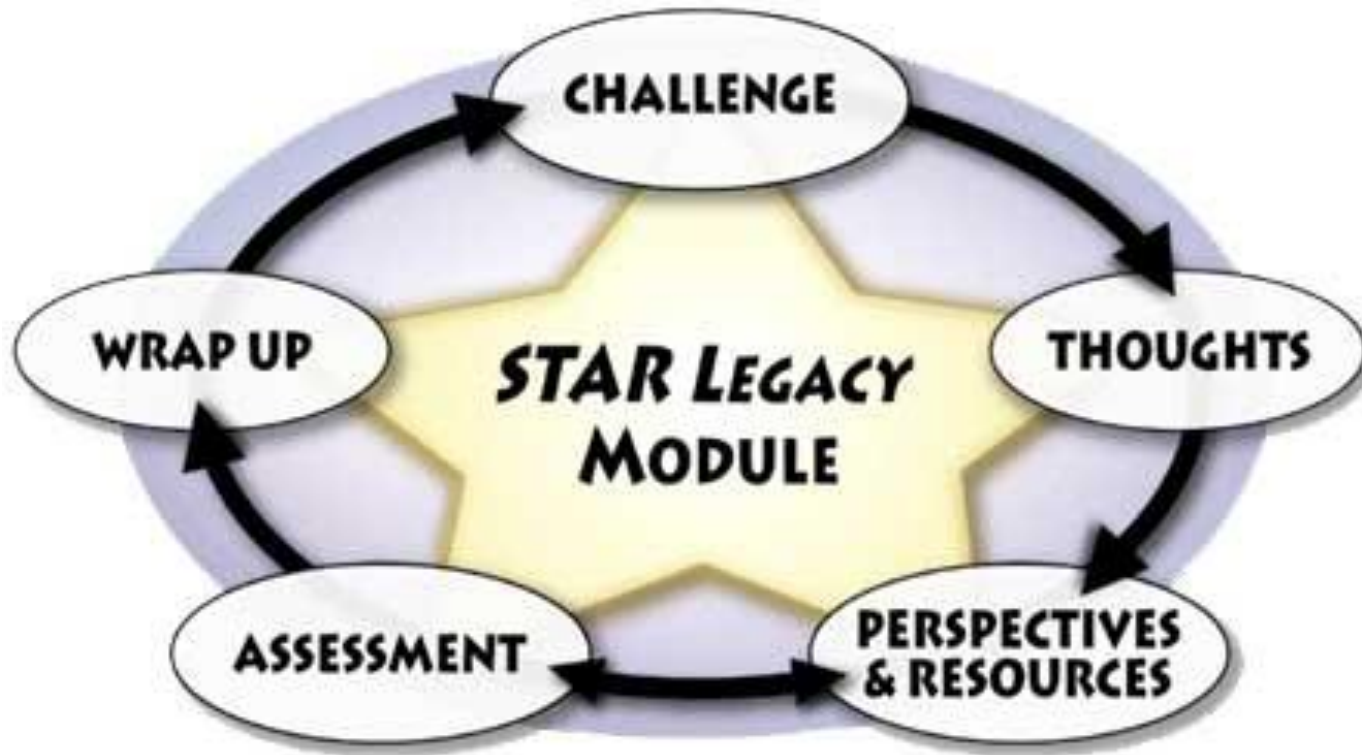
- Six Training Lessons
- Goal of these Training Lessons: to train your students to do PALS independently
- Each of the Training Lessons contains an outline and a script

HS PALS

Introduction

- Lesson 1: Learning about PALS
- Lesson 2: Partner Reading
- Lesson 3: Paragraph Shrinking
- Lesson 4: Prediction Relay
- Lesson 5: Check Writing
- Lesson 6: Reading for Information

PALS TA: Iris Vanderbilt Website



PALS TA: Iris Vanderbilt Website

How to Use a Module

- IRIS *STAR Legacy* Modules are Web-based instructional materials that provide information about working with students with disabilities. Each interactive module is made up of five components:
- **Challenge** – a realistic scenario relevant to education professionals
- **Initial Thoughts** – questions that allow students to explore and consider what they currently know about the scenario presented in the Challenge
- **Perspectives and Resources** – nuggets of information (e.g., text, movies, audio interviews, activities) that allow students to actively engage in learning the module's main content
- **Assessment** – an evaluation tool that offers students the opportunity to apply what they know and to evaluate what topics they need to study further
- **Wrap Up** – a summary of the information presented in the previous components

PALS TA: Iris Vanderbilt Website

<http://iris.peabody.vanderbilt.edu/>

Gr 2-6 Reading PALS

[http://iris.peabody.vanderbilt.edu/pals26/c
halcycle.htm](http://iris.peabody.vanderbilt.edu/pals26/c
halcycle.htm)

HS PALS Module

[http://iris.peabody.vanderbilt.edu/palshs/ch
alcycle.htm](http://iris.peabody.vanderbilt.edu/palshs/ch
alcycle.htm)

PALS on Iris

Once on the Iris website:

- ☞ On left hand menu- go to the “Reading, Literacy Language Arts” Tab
- ☞ Then to right menu and click on “Modules”
- ☞ Click on PALS (K-1, Gr 2-6 or HS)

Iris Vanderbilt

STAR Legacy Modules

- Powerful way to provide low cost, free TA and PL for your district/schools
- Helps to redeliver PL/TA support for PALS Reading
- Important to follow website outline, suggestions, and assignment tips
- Working in teams, collaborating with others, and providing coaching supports are the keys to success

References

- Fuchs & Fuchs, r. March, 2011, PALS for Grades 2–6
studentprogressmonitoring.org
- The IRIS Center for Training Enhancements. (2008). *PALS: A reading strategy for grades 2–6*. Retrieved on February 2011 from
<http://iris.peabody.vanderbilt.edu/pals26/chalcycle.htm>
- Powell, S. Math PALS training, January 2010
- Steedly, K., Dragoo, K., Arafah, S. and Luke, S (2008). Effective Math Instruction. Evidence for Education, V3;1: 1-12. National Dissemination Center for Children with Disabilities; NICHCY Student Progress Monitoring

PALS Info Website

Vanderbilt University, Peer-Assisted Learning Strategies:
Strategies for Successful Learning

<http://kc.vanderbilt.edu/pals/>

This Web site developed and maintained by the Kennedy Center at Vanderbilt University is a hub for information and resources related to Peer-Assisted Learning Strategies (PALS). Featured are links to resources regarding professional development in math and reading, a helpful FAQ, teacher materials (including classroom videos of PALS implementation), and an annotated bibliography.

References/Resources

What Works Clearinghouse

<http://ies.ed.gov/ncee/wwc/>

Promising Practices Network

<http://www.promisingpractices.net/>

Johns Hopkins Best Evidence Encyclopedia

<http://www.bestevidence.org/>

PALS information <http://kc.vanderbilt.edu/pals/>

Center on Instruction www.centeroninstruction.org

Mathematics Advisory Panels and Their Reports

- **National Commission on Mathematics and Science Teaching for the 21st Century—Before It's Too Late**
<http://www.ed.gov/inits/Math/glenn/index.html>
- **National Research Council—Adding It Up: Helping Children Learn Mathematics**
<http://www.nap.edu/catalog/9822.html>
- **RAND Mathematics Study Panel—Mathematical Proficiency for All Students**
http://www.rand.org/pubs/monograph_reports/MR1643/index.html
- **Foundations for Success: The Final Report of the National Mathematics Advisory Panel**
<http://www.ed.gov/about/bdscommi/list/mathpanel/report/final-report.pdf>

For More Information on Explicit and Systematic Instruction

- **National Institute for Direct Instruction (NIFDI)**
<http://www.nifdi.org/>
- **The Access Center's Direct or Explicit Instruction and Mathematics**
http://www.k8accesscenter.org/training_resources/DirectExplicitInstruction_Mathematics.asp
- **Special Connections' Direct Instruction: Math**
<http://www.specialconnections.ku.edu/cgi-bin/cgiwrap/specconn/main.php?cat=instruction§ion=main&subsection=di/math>
- **NICHCY's The Power of Strategy Instruction**
http://research.nichcy.org/strategy_instruction1.asp
- **The Access Center's Strategy/Implicit Instruction and Mathematics**
http://www.k8accesscenter.org/training_resources/Strategy_ImplicitInstructionandMath.asp
- **University of Nebraska-Lincoln's Cognitive Strategy Instruction: Math**
<http://www.unl.edu/csi/math.shtml>

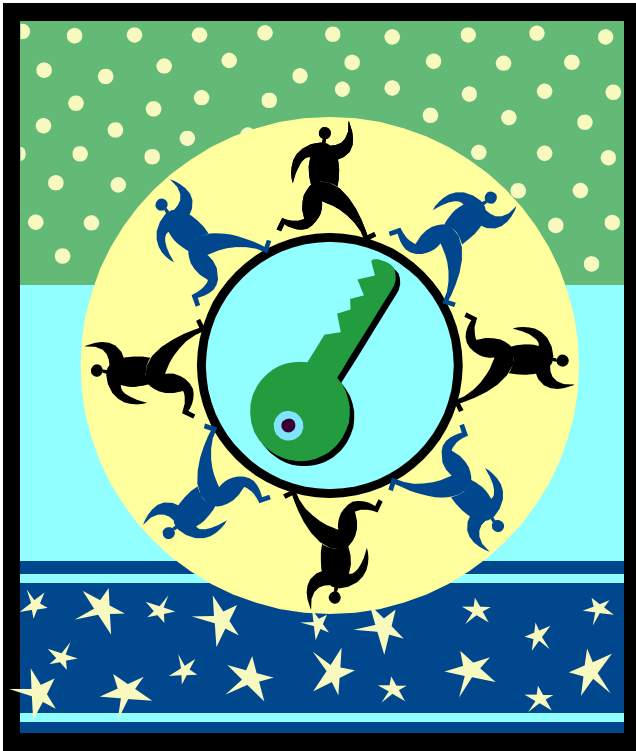
For More Information and Guidance on Self-Instruction

- Penn State's *Self-Regulation Abilities, Beyond Intelligence, Play Major Role in Early Achievement*
<http://www.pop.psu.edu/searchable/press/apr0407.htm>
- The National Research Center on the Gifted and Talented (NRC/GT)'s module, *Self-Regulation*
<http://www.gifted.uconn.edu/Siegler/SelfRegulation/section0.html>
- The Access Center's *Math Problem Solving for Primary Elementary Students with Disabilities*
http://www.k8accesscenter.org/training_resources/mathprimaryproblemsolving.asp
- The Access Center's *Math Problem Solving for Upper Elementary Students with Disabilities*
http://www.k8accesscenter.org/training_resources/MathPrblSolving_upperelem.asp
- Federal Way Public Schools' *Adaptations Are Essential: Early Years Mathematics*
<http://www.feps.org/our/adaptations/math.pdf>
- Marjorie Montague's 2007 article, "Self-Regulation and Mathematics Instruction" in *Learning Disabilities Research & Practice*, 22(1), 75-83. (This article appears in a special issue of the journal devoted to math instruction.)
<http://www3.interscience.wiley.com/journal/118480756/abstract>

For More Information and Guidance on Peer Tutoring

- **Vanderbilt's Peer-Assisted Learning Strategies (PALS)**
<http://kc.vanderbilt.edu/pals/>
- **The Institute of Education Sciences' Intervention: Peer-Assisted Learning Strategies (PALS)**
http://ies.ed.gov/nces/wwc/reports/english_lang/pals/index.asp
- **The Institute of Education Sciences' Intervention: ClassWide Peer Tutoring (CWPT)**
http://ies.ed.gov/nces/wwc/reports/beginning_reading/cwpt/index.asp
- **The Access Center's Using Peer Tutoring for Math**
http://www.k8accesscenter.org/training_resources/mathpeertutoring.asp
- **The Access Center's Using Peer Tutoring to Facilitate Access**
(Reviews the use of CWPT, RPT, and PALS in teaching mathematics and other subjects)
www.k8accesscenter.org/training_resources/documents/PeerTutoringFinal.doc
- **Fulk and King's Classwide Peer Tutoring at Work**
http://www.dldcec.org/pdf/teaching_how-tos/classwide_peer_tutoring.pdf
- **Special Connection's An Introduction to ClassWide Peer Tutoring**
<http://www.specialconnections.ku.edu/cgi-bin/cgiwrap/specconn/main.php?cat=instruction§ion=main&subsection=cwpt/main>
- **The Center for Effective Collaboration and Practice's Classwide Peer Tutoring: Information for Families**
http://cecp.air.org/Peer_Tutoring.pdf

Thank you!



You are the key to success!

Together,

We Can Make a Difference!

pfreer@doe.k12.ga.us