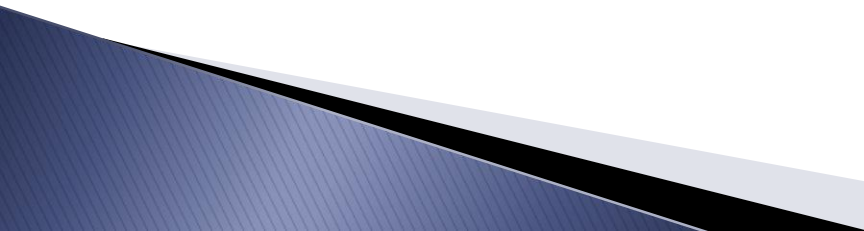


Response to Intervention in Mathematics

Elementary Math
Frisco ISD



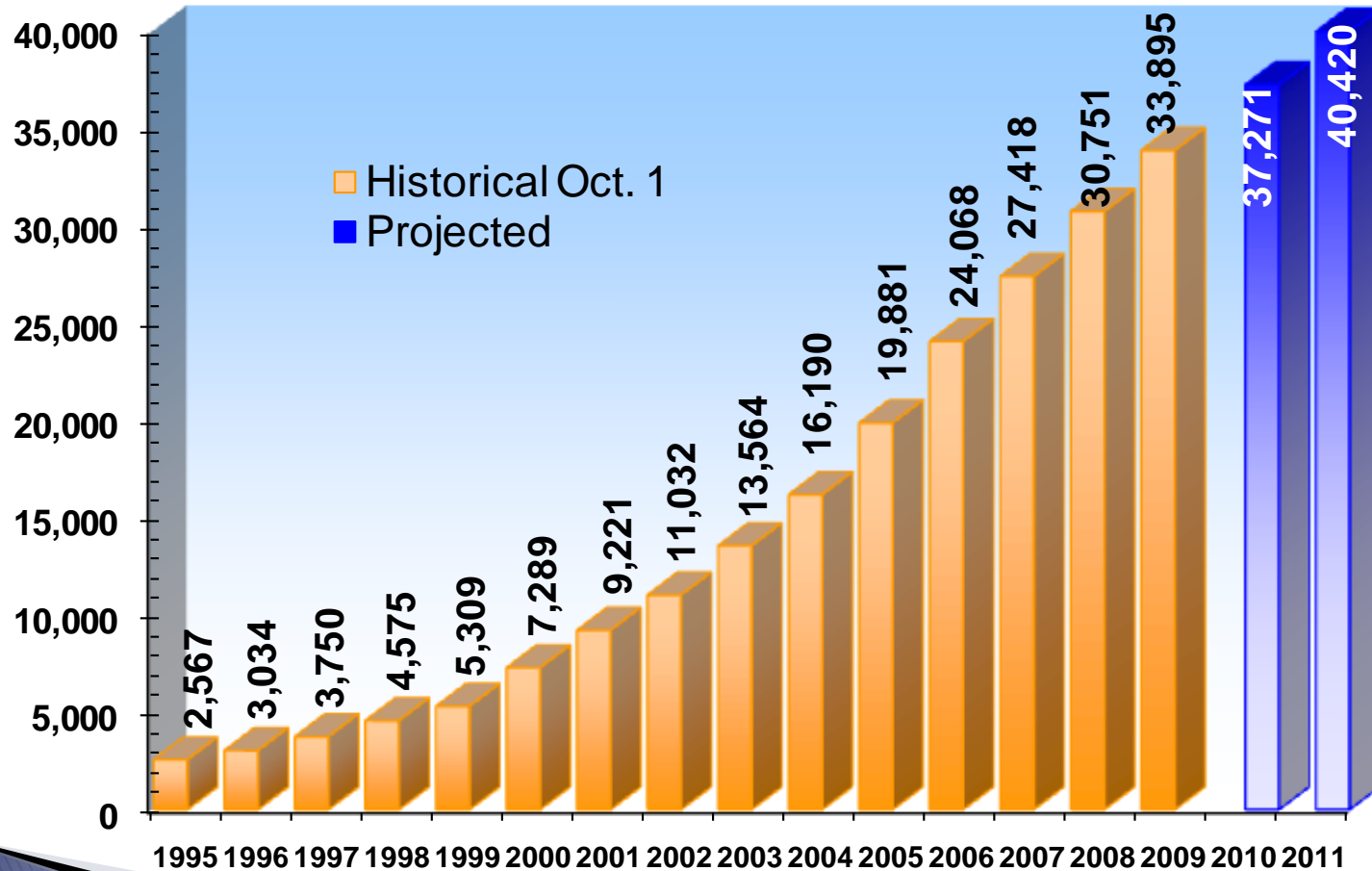
Instructional Presentation Team

- ▶ Tammy Chandler: Elementary Math Coordinator
 - ▶ Debbie Lair: Special Education Coordinator
 - ▶ Laurie Tinsley: Elementary Principal, Ogle
 - ▶ Marcy Corley: 5th Grade Math Teacher, Ogle
 - ▶ Heather Woodward: Resource Teacher, Isbell
- 


About Frisco ISD....

- ▶ **10%-30% Growth Per Year**
- ▶ **1998: Seven Total Campuses**
- ▶ **2010: 52 Total Campuses**
 - 30 Elementary Campuses 30
 - 12 Middle School Campuses
 - 6 High School Campuses
 - 4 Special Program Campuses

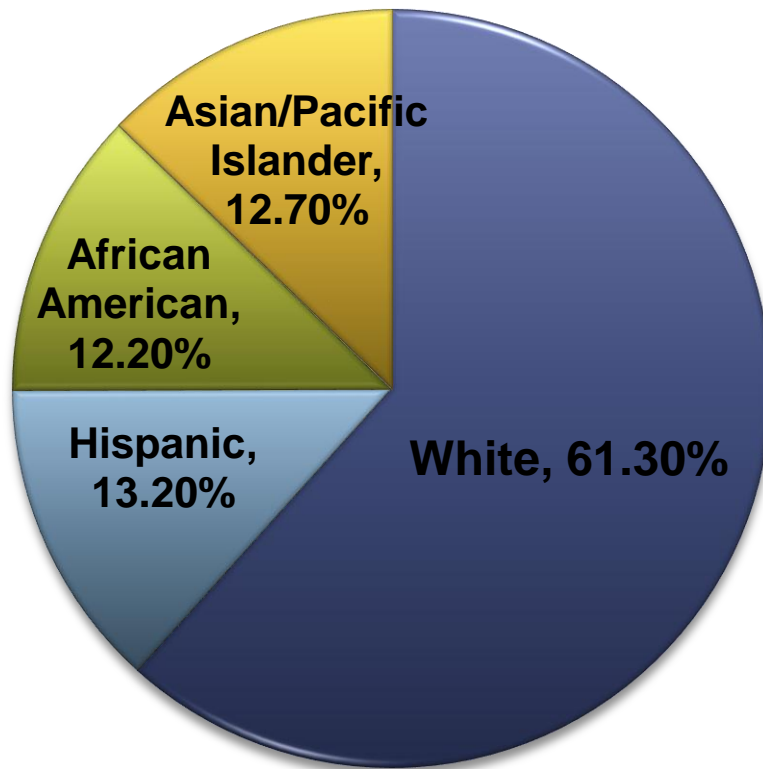
One of the Nation's Fastest Growing School Districts



Where we are now.....

- ▶ 2010 September Enrollment: 37,269
 - ▶ 5% Bilingual
 - ▶ 6% Gifted and Talented
 - ▶ 9% Special Education
 - ▶ 12.7% Low SES
 - ▶ 74 Languages
- 

Demographic Breakdown



■ White

■ Hispanic

■ African American

■ Asian/Pacific Islander

Looking Back 4 Years Ago....

- ▶ Math and Science Curriculum and Instruction Goals:
 - Ensure a Guaranteed and Viable Curriculum
 - Meeting the All the Learning Needs of our Growing and Changing Student Population
 - Meet the Instructional Needs of our New Teachers
 - Implement a Researched Base K-12 Instructional Model for Math and Science
 - Facilitate Student Centered Instruction
 - Ensure Horizontal and Vertical Alignment
 - Improve Student Achievement
 - Creating Teacher “Buy-In”
 - Creating Quality and Spiraling Professional Development

Rtl Process in Frisco


The Responsive Educational System:

- ▶ Response to Intervention is a system of support to help all student learn through provisions of:
 - Solid Tier I Instruction
 - Tiered Levels of Intervention
 - Universal Screening
 - Progress Monitoring

Core Principles of RtI

- All children can be effectively taught.
- Early intervention is key.
- Delivery of instruction should be multi-tiered.
- When making decisions, use a problem-solving method.
- In order to inform instruction, monitor student progress frequently.
- Utilize data to make decisions.
- Use assessments to screen all children in order to identify those not making progress at expected rates, to diagnose what children can and cannot do in important academic and behavioral domains, and to monitor progress to determine if academic or behavioral interventions are producing desired effects.

Common Themes

- ▶ High expectations and standards
 - ▶ Focus on results = Student data
 - ▶ Early identification & intervention
 - ▶ Collaboration between general and special education teachers so that students can achieve academic progress in the general education setting
- 

From the District Perspective: Elementary Math RtI Goals

- ▶ 1. Improve tier 1 instruction in all content
- ▶ 2. Improve math instruction
 - General Education
 - SPED
- ▶ 3. Develop a multi–leveled math model
- ▶ 4. Develop a process for collaboration to problem solve and provide intervention ideas to teachers: Student Success Team (SST)

1. GOAL:

Improving Tier I Instruction

Professional Development Initiatives:

- ▶ A Study of the TEKS
 - DANA Center
- ▶ Quality Questioning
 - Walsh and Sattes
- ▶ Instructional Leadership Academy
 - DANA Center
- ▶ Formative Assessment
 - ▶ Pickering, Pete, Keely, Heflebauer
- ▶ Assessment for Learning
 - Stiggins
- ▶ Collaborative Planning
 - Munger, NSDC
- ▶ 21st Century Learning
 - McLeod, McNulty
- ▶ Kagan Cooperative Learning
- ▶ Building Common Assessments
 - Solution Tree
- ▶ Classroom Assessment and Grading that Work
 - Marzano

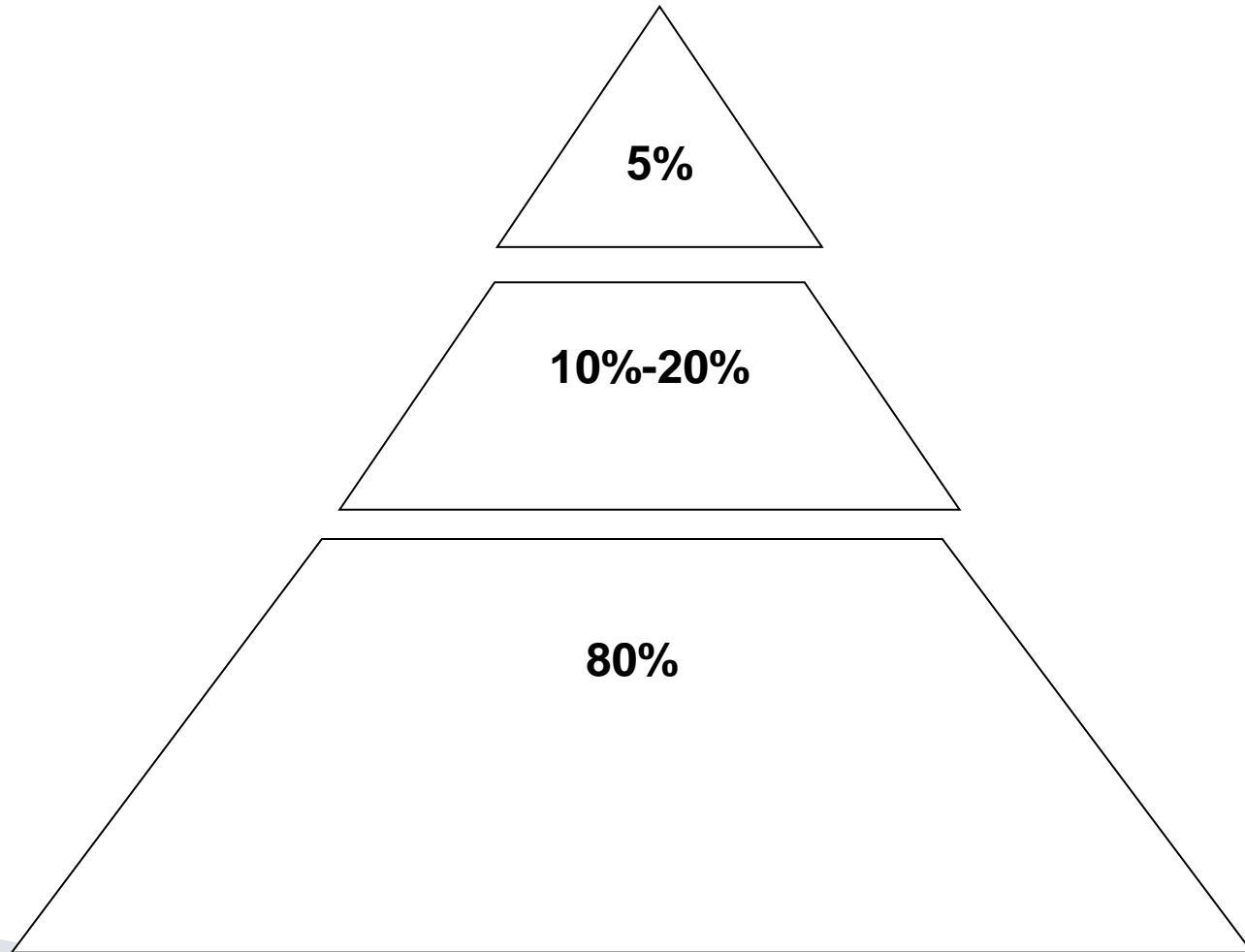
2. GOAL: Improving Math Instruction

- ▶ District Grade Level PLCs
 - General Education K–5
- ▶ Math Focused Professional Development
 - 5E Instructional Model
 - Summer PD
 - Campus PD
 - *First Steps*
 - SPED PD
 - Parent Coffee Talks
 - Administrator Curriculum and Instruction Training
 - Instructional Facilitator Support Model

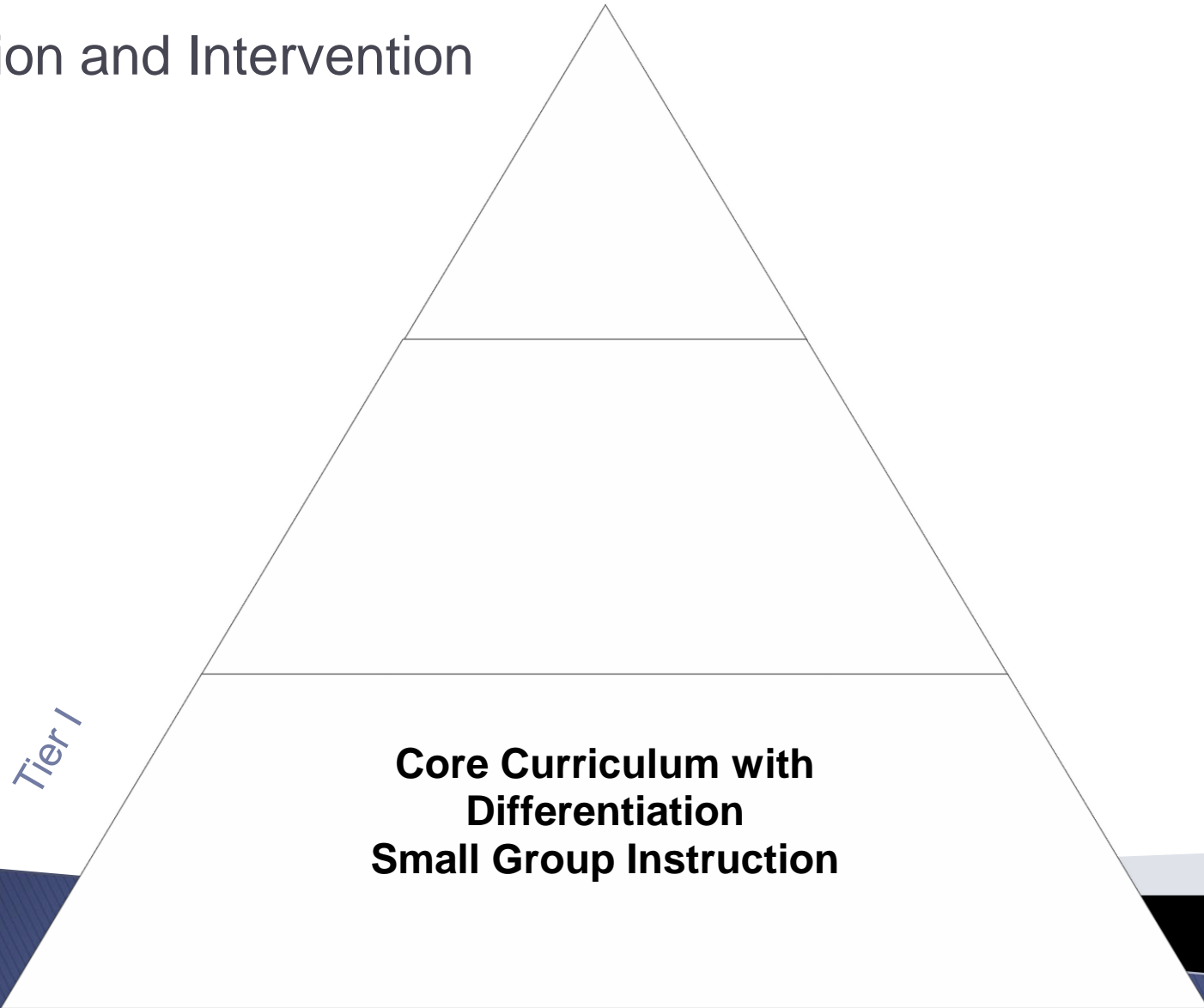
What is *First Steps*

- ▶ Provide *First Steps* Professional Development to both special education and general education teachers
- ▶ Integrate *First Steps* resources into our existing curriculum
- ▶ Video about *First Steps* in Frisco with teacher testimonies.

3. GOAL: Develop a Multi-Level Model



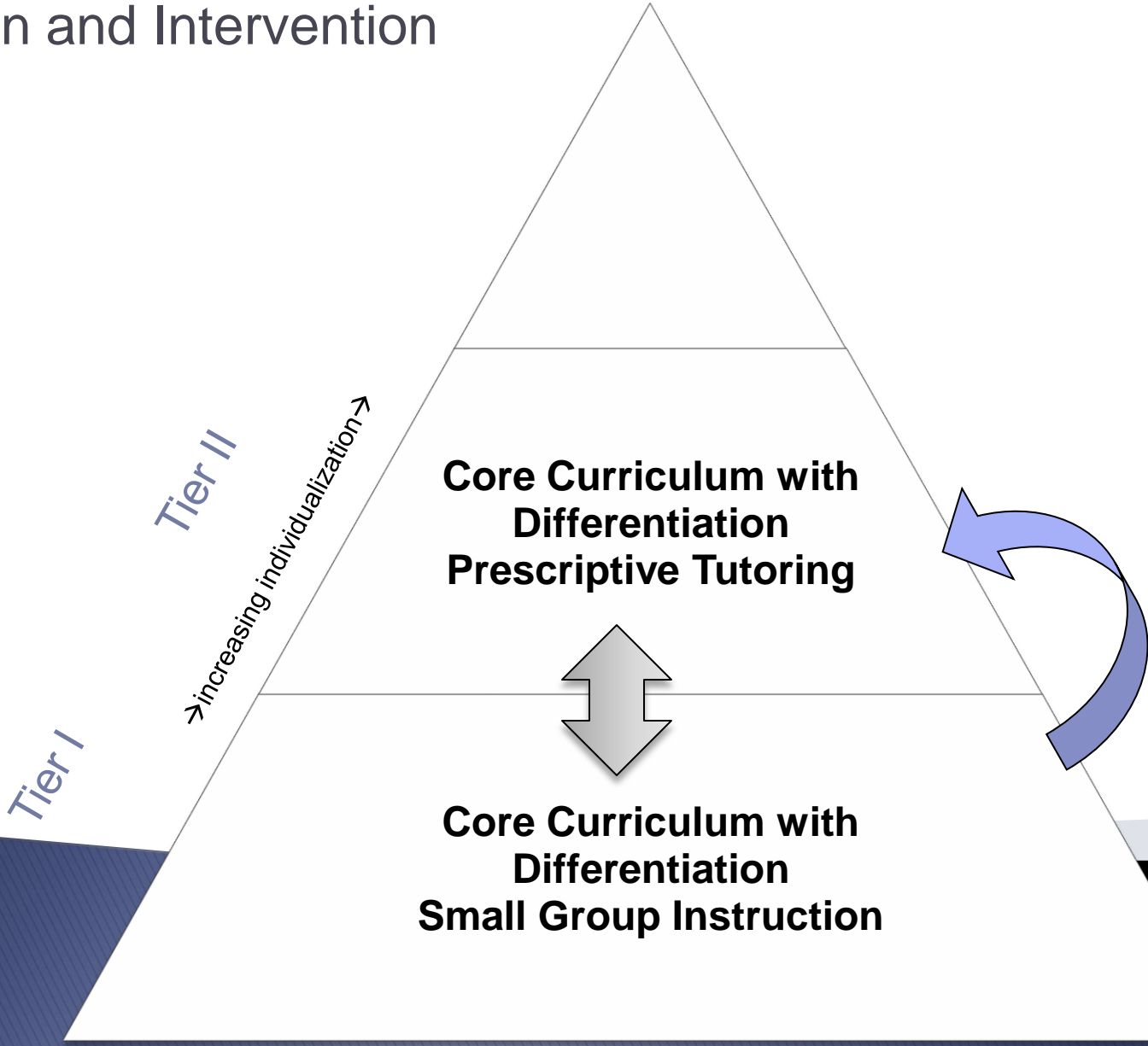
Instruction and Intervention



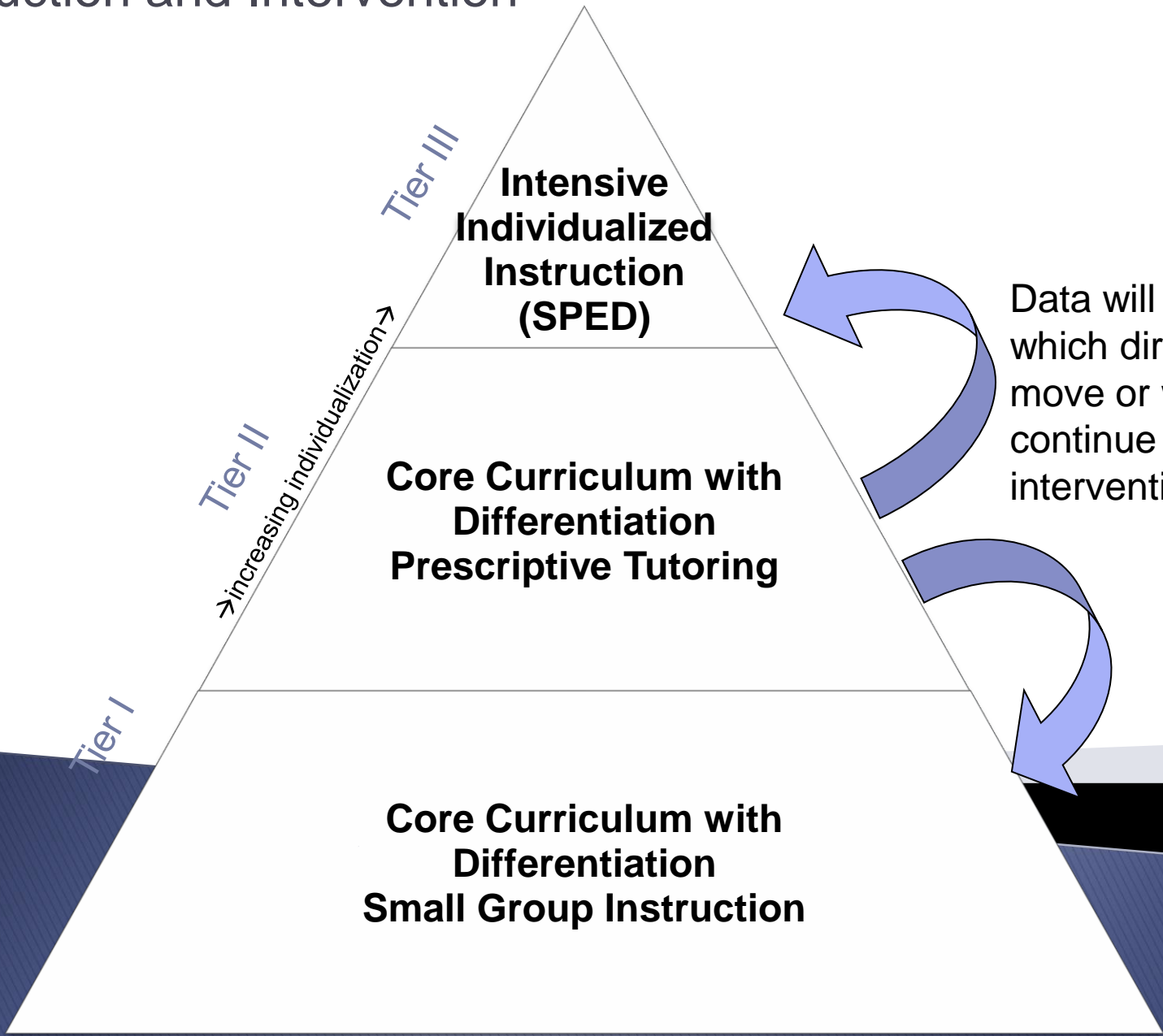
Tier 1

**Core Curriculum with
Differentiation
Small Group Instruction**

Instruction and Intervention



Instruction and Intervention



**Core Curriculum with Differentiation
Small Group Instruction**

**Core Curriculum with Differentiation
Prescriptive Tutoring**

Intensive Individualized Instruction (SPED)

Tier I

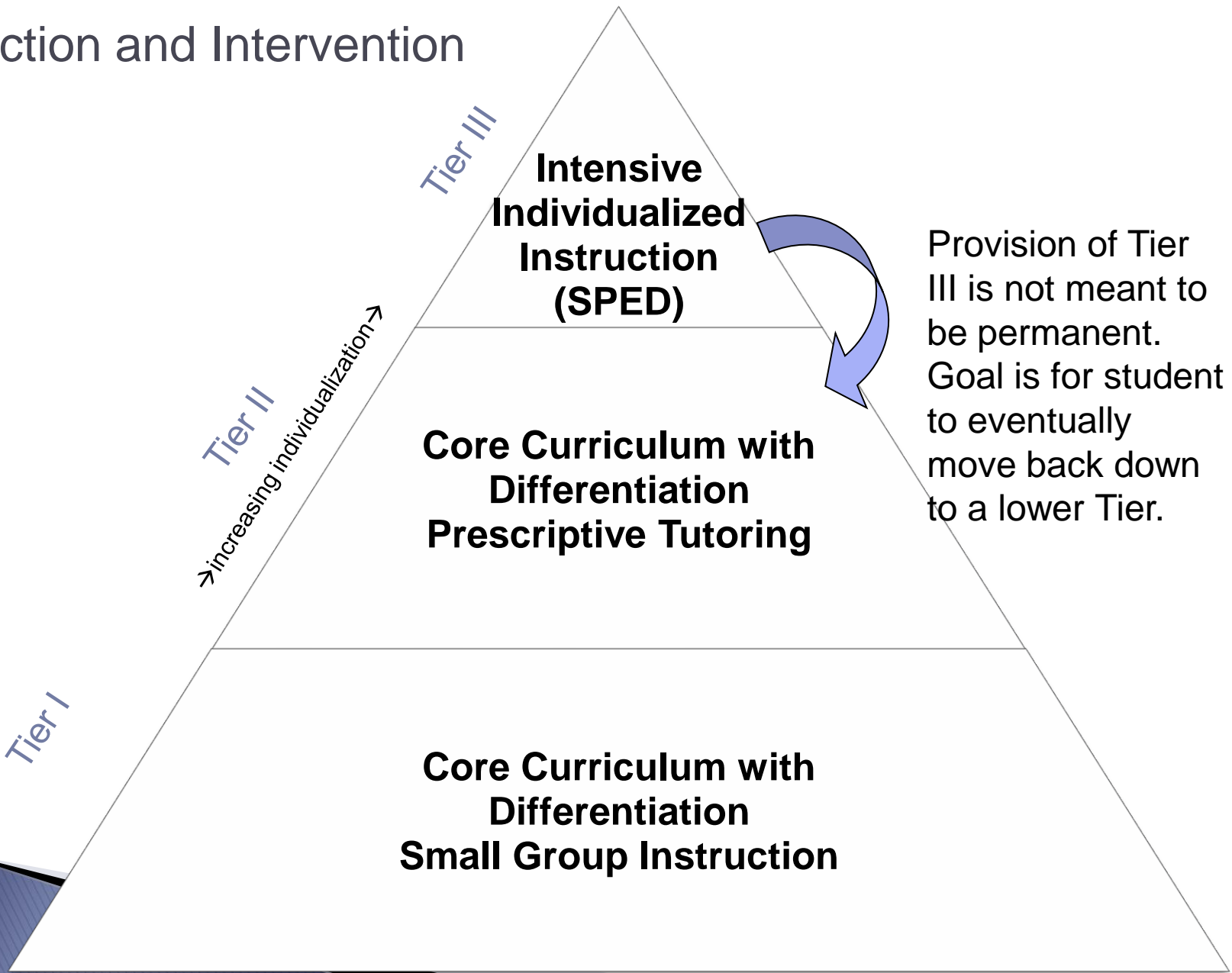
Tier II

Tier III

>increasing individualization>

Data will determine which direction we move or whether we continue the Tier II interventions

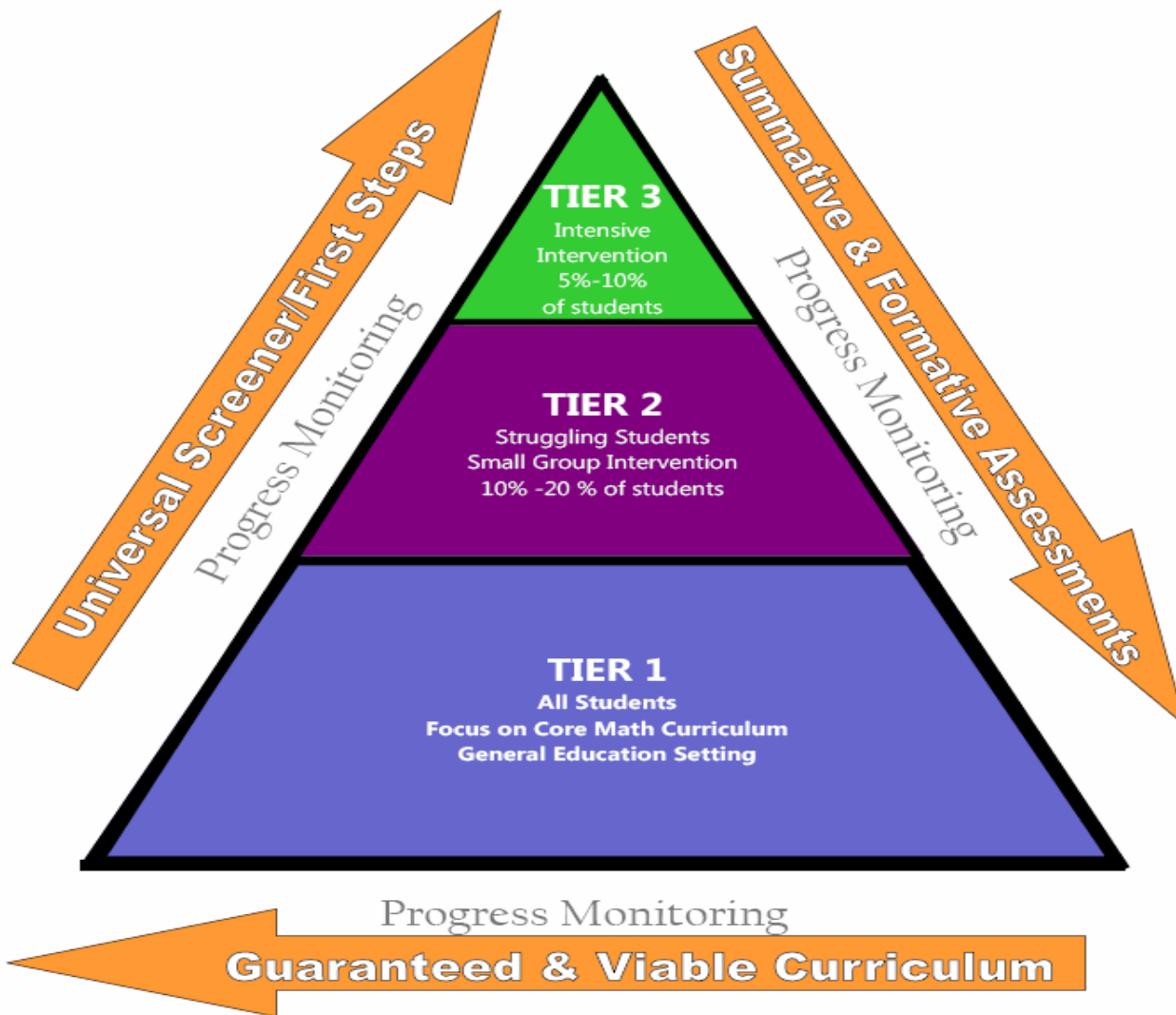
Instruction and Intervention



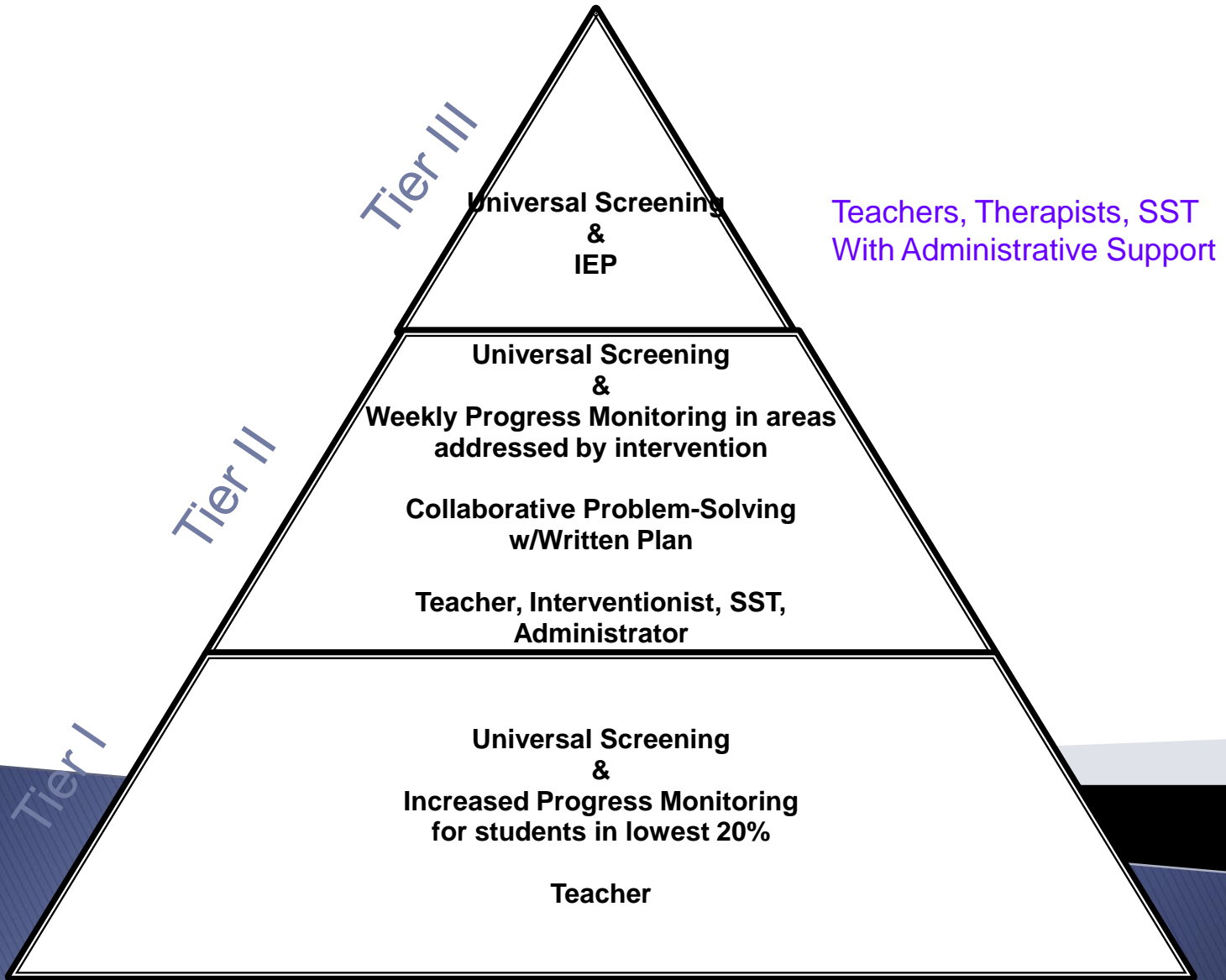
Provision of Tier III is not meant to be permanent. Goal is for student to eventually move back down to a lower Tier.

Response to Intervention

In Mathematics



Progress Monitoring Within Tiers



Universal Screener

- ▶ K-2: <http://3tiermathmodel.org/> 5: TMSDS

Grade 1: Form C of Screener




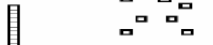


Magnitude Comparisons

3	8	5	1	2	9	2	2
14	9	4	17	18	7	13	8

Number Sequences

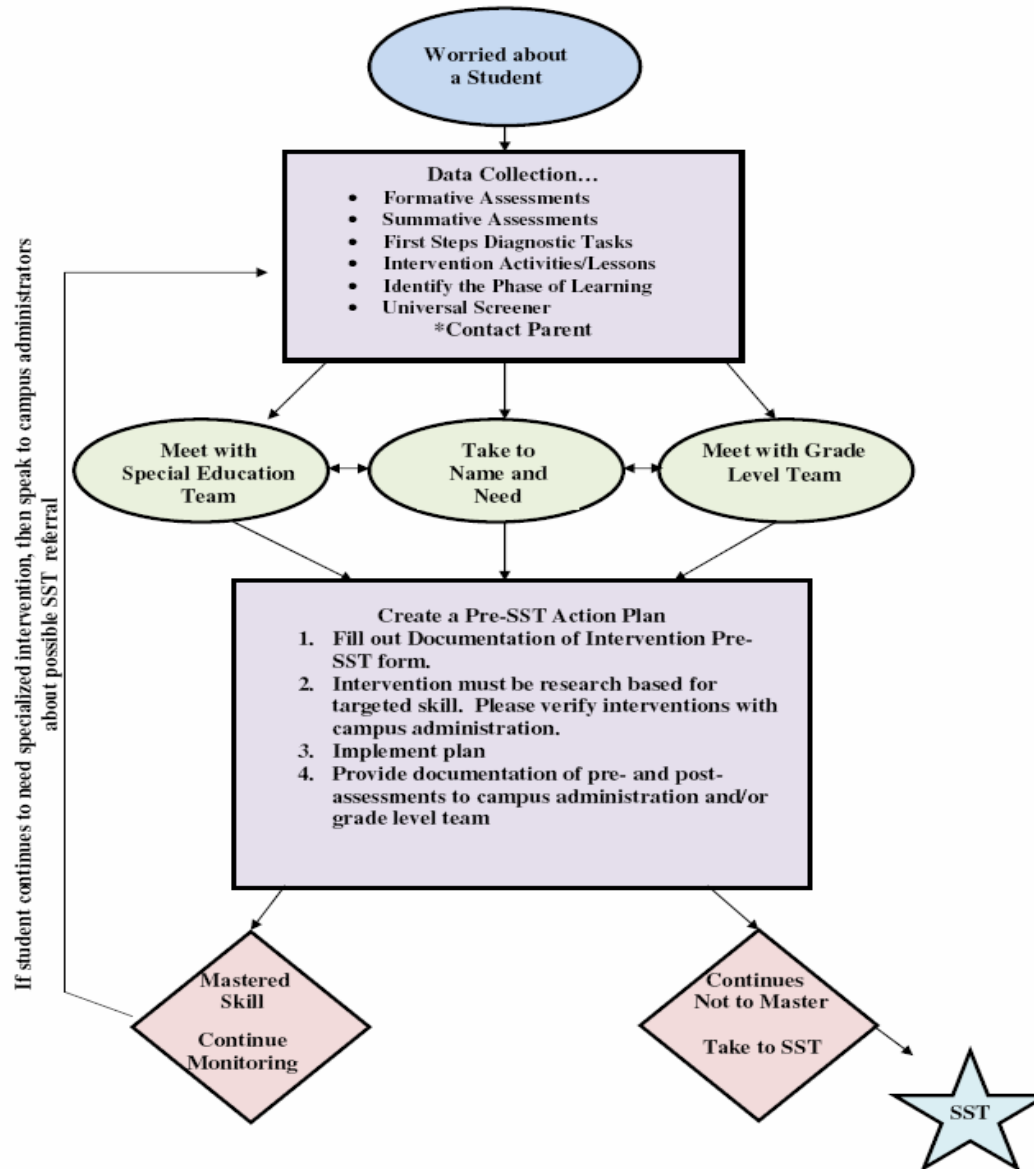
8	9	___	___	3	4	1	___	3
17	99	5	7	2	0	4	10	
10	7	33	2					
___	15	16	18	19	___	___	17	18
14	17	17	10	19	6			
19	4	29	20	16	10			

Place Value

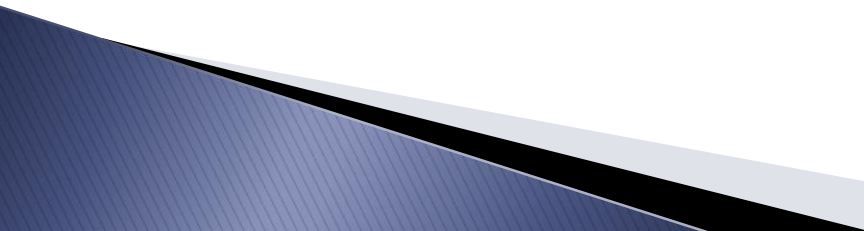
					
1	4	0	6	5	6
3	2	4	5	9	2
					
8	16	30	3	44	6
17	80	20	16	25	24

$\begin{array}{r} 6 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -1 \\ \hline \end{array}$
--	--	--	--	--

4. GOAL: Student Success Team



Campus Perspective.....

- ▶ Catching Struggling Students Before They Falter
 - ▶ Heavy Emphasis on Early Intervention
 - ▶ Common Cause–School Staff
 - ▶ Catalyst for On–Going Professional Development
 - ▶ Empowers Teachers to Make Sound Instructional Decisions (Assessment, Data, Instructional Strategies)
- 

Individual Student Action Plan

Name:		Date:
Target Area:		
Current Level:		
Goal:	The student will	
Target Date:		
Action Plan	Strategy/Intervention: Who: Where: Duration: Frequency:	
Curriculum-Based Monitoring	How will the success be measured? Instrument used: Other Information: <u>Frequency:</u>	
Other Comments:		
Follow-Up Information:		

Date to Reconvene:

Individual Student Action Plan

(To be completed by the STARS team and STARS Chairman
will attach to "Forms" tab on student profile in Aware)

Name: Eager Edgar		Date: 10/22/09
Target Area (Skill or content based):	Letter Identification	
Current Instructional Level:	Recognizes 19/26 uppercase and 19/26 lowercase letters	
Goal (TEKS):	The student will identify all letters	
Target Date:	December 10, 2010	
Action Plan	Strategy/Intervention: <ul style="list-style-type: none"> • Alphabet Arc w/magnetic letters • Alphabet cards • Alphabet Chart work • Istation (remedial instruction – not teacher directed) Who: ARI and Classroom Where: ARI and Classroom Duration: ___4___ weeks Frequency: ___5___ X per week, for 10 minutes each session	
Curriculum-Based Monitoring	How will the success be measured? Instrument used: PAPI Letter ID or Alphabet cards Other Information: Frequency: ___1___ X per week	
Other Comments:		
Follow-Up Information:		

Date to Reconvene: December 10, 2010

Classroom Teacher Perspective....

- ▶ Most Significant Impact of RtI for Math: *First Steps*
 - Tier I, II , III math instruction has improved because of the *First Steps* Professional Development and resources
 - This professional development deepened my knowledge of mathematics
 - The resource books provide the tools for diagnosing, planning, teaching and evaluating
 - The diagnostic map helps me with making judgments about a student's existing knowledge and track progress

First Steps Resource Books

- ▶ Diagnostic Tasks and Activities
 - Identify misconceptions
 - Use data to plan activities for intervention
 - Administered individually or small group
 - Use data to identify the phase of development
- ▶ Diagnostic Map
 - Guide on the phases of development

When does Rtl occur?

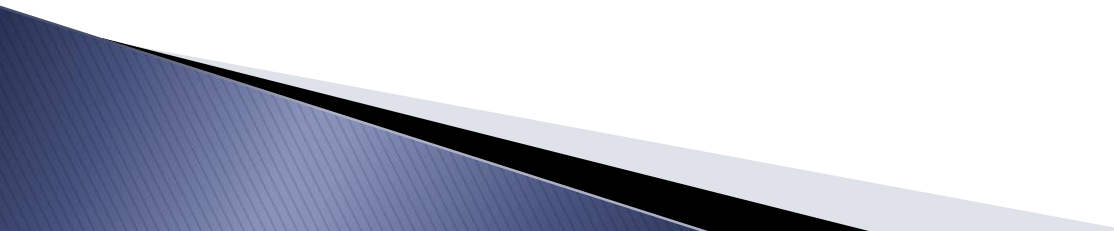
- ▶ Small Group Instruction
- ▶ Intervention and Enrichment Block, Tutoring
 - Mon–Thurs: 8:05–8:35
 - First Steps tasks and activities are used for intervention with small group
 - All hands on–board

Video of I.E. block for self-contained and departmentalized classroom settings

What's So Special About Special Education?Tier 3 Instruction

- ▶ (3) *Specially designed instruction* means adapting, as appropriate to the needs of an eligible child under this part, the **content, methodology, or delivery of instruction**—
 - ▶ (i) To address the **unique needs** of the child that result from the child's disability; and
 - ▶ (ii) To **ensure access** of the child to the **general curriculum**, so that the child can meet the educational standards within the jurisdiction of the public agency that apply to all children.

Specially Designed Instruction

- ▶ 1. Individually planned
 - ▶ 2. Specialized
 - ▶ 3. Intensive
 - ▶ 4. Goal-Directed
 - ▶ 5. Uses research-based methods
 - ▶ 6. Guided by student performance (monitored)
- 

Resource Classroom Perspective....

RtI

- ▶ *First Steps* identifies area of need
- ▶ *First Steps* includes interventions to target those areas
- ▶ *First Steps* Task Chart assists with progress monitoring

First Steps in Mathematics Task Chart							
Task	KU	Phase	Course Bk Pg. #	Grade Range	Date	Date	Notes
Understand Numbers: Introduction, Place Value, and Counting							
Counting Principles (1, 2, and 5)	UN 1	M	22	K-2			
Counting Principles (3 and 4)	UN1	Q	22	K-2			
Get Me	UN 1	M	25	K-2			
Ice Cream	UN 1	Q/M	27	1-3			
Skip Counting	UN 1	Q	29	1-4			
Up to and Over 100	UN 4, 5	Q	16	1-4			
Up to and Through the Hundreds	UN 4, 5	P	16	3-7			
Understand Numbers: Subitizing and Partitioning							
The More Game	UN2	E	34	K-1			
Subitizing	UN 2	E	35	K-2			
Hide the Jelly Beans	UN 2	Q	37	K-2			
Emus/ Rabbits/Sheep	UN2	Q,P	38	2-4			
How Did You Do It?	UN6, C4	P	32	3-7			
Understand Numbers: Place Value							
Read, Write, and Say Whole Numbers	UN 5	Q	42	3-7			
Dinosaurs	UN 5	P	46	3-7			
52 and 43 Lollies	UN 5	F	48	3-7			
800 Game	UN 5, 7	F, O	55	5-7			
116 Lollies	UN 5	F	60	6+			
Flexible Numbers	UN 6	F	62	6-8			
Circle the Biggest	UN 5, 7	F,O	58	5-7			
Understand Numbers: Decimal Fractions							
Apples and Money	UN 7	F, O	70	4-7			
Library Books	UN 4, 7	O	72	5-7			
Digit Values and Number Sequences	UN 7	O	73	6-7			
Decimal Numbers	UN 7	O	75	6-7			
Calculate: Mental and Written Strategies							
How Many?	UN1, 2, C 1	Q, P	92	K-3			
Blocks in a Box	UN1, 2, C 1	Q	102	K-2			
Number Tiles	UN 1, C5	P	98	1-7			
Find the Solutions	C 1-6	O,F	105	3-7			
Finding Equal Groups	C 3	P, F	112	3-7			
Understand Operations: Addition and Subtraction							
Kangaroos and Comparing Bananas	UOp 1	M, Q	116	K-3			
How Much Taller?	UOp 2	P	122	4-7			
Understand Operations: Links Between Addition and Subtraction							
Change	UOp 2	P	135	3-7			
Empty Boxes	UOp 2	P	129	5-7			
Understand Operations: Multiplication and Division							
Story Problems	UOp 3, 4	P, F	146	K-4			
Calculator Number Sentences	UOp 3, 4	F, O	156	4-7			
Finding Factors	UOp 5	F, O	163	5-7			

- ▶ *First Steps* provides the understanding of developmental levels/phases of math
- ▶ *First Steps* identifies gaps/misconceptions
- ▶ The diagnostic tasks are quick and show how the student is thinking
- ▶ Interventions are interactive
- ▶ Many interventions will target multiple skills
- ▶ Interventions were created for students to experience success
- ▶ It is discovery-based learning

Example of *First Steps* tasks/interventions I used with a 5th grader:

*Student had failed 4th grade TAKS

*Student had Failed 6 out of 10 CBAs (unit assessments)

➤ 9/3/10 Ice Cream Task–student is to determine number of ice cream cones needed for the students on the card.
The student covered each child with a cone, not paying attention to amounts.

➤ Interventions:

- Collections
- How Many
- Labeling Collections
- Counting Cakes

➤ 10/12/10 Reassessed with task–the student counted and then one to one matched with cones.

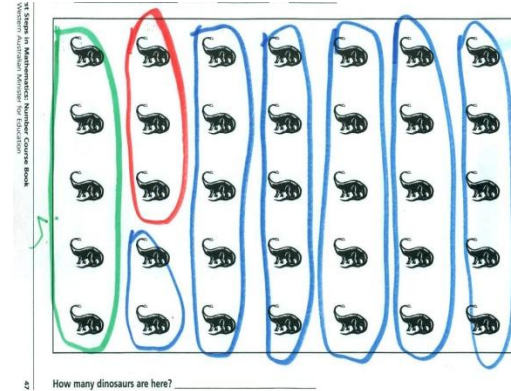
Ice Cream Task
Understand Whole Numbers
Key Understanding 1



- ▶ 9/3/10 Number Tiles Task was administered— student added the numbers in the order presented
- ▶ Intervention to address skill:
 - Grouping
 - Compatible Numbers
- ▶ 10/13/10 Reassessed— student grouped the numbers in “easier to add” groupings

<p>Task: Number Tiles</p> <p>Understand Numbers KU 1</p> <p>Calculate – Mental and Written Strategies</p> <p>KU 5</p>	<p style="text-align: right;">10/13/10</p> <p>Child's Name: _____</p> <p>Age: <u>11</u></p> <p>Grade: <u>5</u></p> <p>Assessment Date: <u>9/13/10</u></p>
<p>Purpose:</p> <p>To see whether students can use combinations to ten to add one and two digit numbers.</p>	<p>Materials:</p> <p>- A collection of number tiles, with numbers 1-10, and numbers 12, 14, 26, and 38.</p>
<p>Teacher directions/script:</p> <p>Put out the tiles 1, 3 and 9 and ASK the child to add the numbers on the tiles.</p> <p>Put out the tiles 6, 4 and 7 and ASK the child to add the numbers on the tiles.</p> <p>Put out the tiles 2, 10, 5 and 8 and ASK the child to add the numbers.</p> <p><i>If the child is able to use combinations to ten then continue with the next examples.</i></p>	<p>Observe/Record:</p> <p>After the child has found an answer ask them to explain how they did it. Notice whether they use the combinations to ten.</p> <p>1, 3, and 9 response:</p> <p>9+3 Then +1 9+1=10+3</p> <p>6, 4 and 7 response:</p> <p>6+7 Then +4 6+4=10+7</p> <p>2, 10, 5 and 8 response:</p> <p>2+10 +5 +8 5+ struggled a little but then grouped 8+2+10+5</p>

- ▶ 10/25/10 Dinosaurs Task administered—student circled 3 dinosaurs to represent the 3 in 35



- ▶ Interventions:
 - Next Number
 - Place Value Beans
 - Expanded Notation

- ▶ 12/8/10 Reassessed—student circled the 90 to represent the 9 in 93.



- ▶ This student is doing much better this year, meeting all IEP goals and understanding basic math concepts much better.

"Children do not all have to make the same journey; rather we want them to all arrive at the same destination." STEPS

