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SCHOOL COMMITTEE UPDATE: MATH INITIATIVES

INTRODUCTIONS

- Christina Astrove
- Eileen Gagnon
- Elsa Head
- Deb Holiday
- Dr. Jessica Huizenga
- Monica Leon
- Jayne Lynch
- Lisa Scolaro

MAKING CPS WORK FOR ALL BY INCREASING RIGOR AND SUPPORTING LEARNERS

- Math in Focus
- Accelerated Math Pathway
- Summer Program

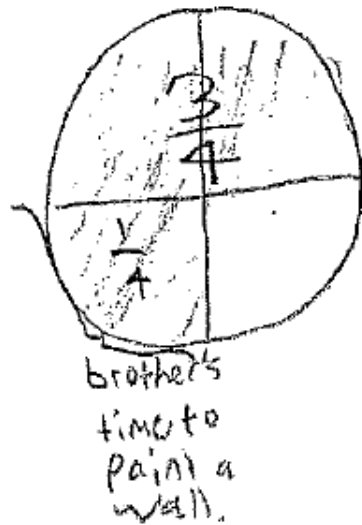
MATH IN FOCUS

Increasing Rigor

- Let's do some math 😊

Tyrone takes $\frac{3}{4}$ hour to paint a wall. His brother takes $\frac{1}{3}$ of the time he takes. How long will his brother take to paint 5 similar walls?

9. Tyrone takes $\frac{3}{4}$ hour to paint a wall. His brother takes $\frac{1}{3}$ of the time he takes. How long will his brother take to paint 5 similar walls?



$$\frac{1}{4} \times 5 = \frac{5}{4} = 1\frac{1}{4} = 1 \text{ hour and fifteen minutes}$$

I takes Tyrone's brother
1 hour and fifteen minutes
to paint 5 walls.

9. Tyrone takes $\frac{3}{4}$ hour to paint a wall. His brother takes $\frac{1}{3}$ of the time he takes.
How long will his brother take to paint 5 similar walls?

time
brother
takes $= \frac{1}{4}$ hour

$$\frac{1}{4} \times 5 = 1 \frac{1}{4} = 1 \text{ h } 15 \text{ min}$$



time
tyrone
takes



It takes
1 hour 15 minutes
for Tyrone's brother
to paint 5 walls

FIFTH GRADERS THINK...

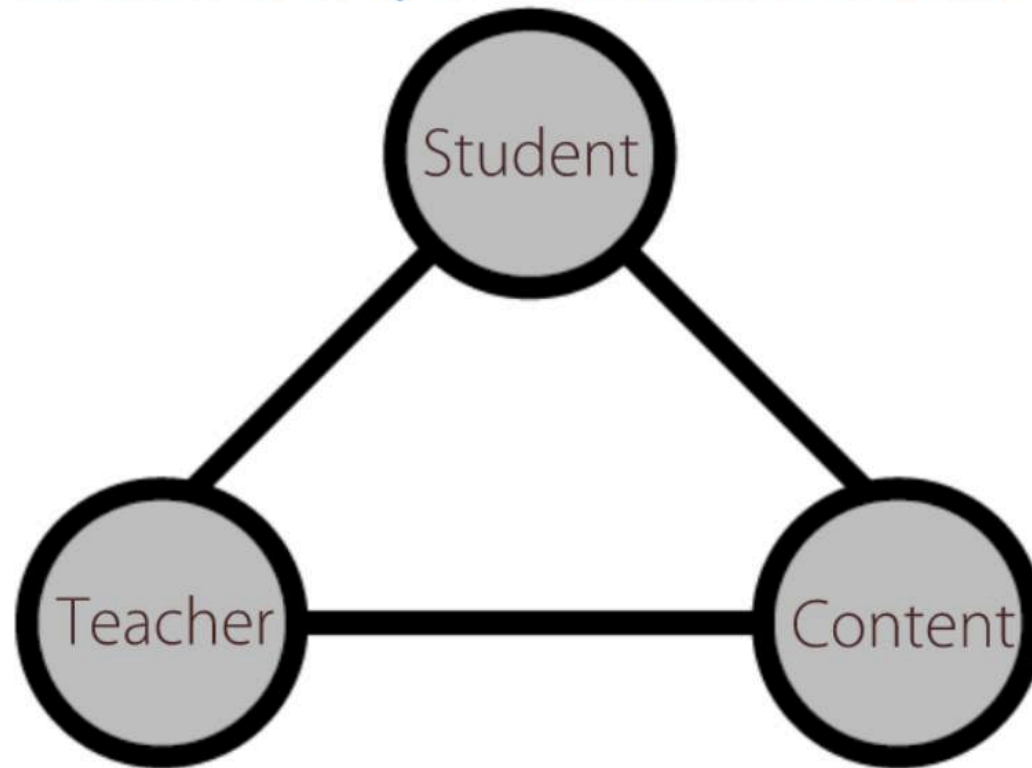
- *“It teaches me, step-by-step, many ways to solve the same problem.”*
- *“..... it has clearer diagrams.”*
- *“..... you get to take practice tests in the text books.”*
- *“I really like the use of bar models. Once you get a look at the solution you have an Aha! moment.”*
- *“Math in Focus is a challenge and I like a challenge.”*

CURRICULUM REVIEW CYCLE

- Phase 3: Implementation/Monitoring
 - Guided by the following questions:
 - Are we teaching the intended curriculum as it was designed?
 - Are we making progress towards our desired results?
 - Are students with disabilities accessing the curriculum successfully?
 - What is the instructional core? How do changes in curriculum materials affect the core?
 - What kinds of coaching do teachers need to implement the curriculum and improve instruction?
 - What “problems of practice” are emerging based on formative and summative assessment data?

MATH IN FOCUS AND THE INSTRUCTIONAL CORE

Elmore & City's "Instructional Core"






SY 2014-2015 IMPLEMENTATION

- All 1, 4, 5, 6-8 classrooms
- Six schools with full 2nd and 3rd grade implementation

2014-2015 Math Implementation

	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Amigos						
Baldwin						
Cambridgeport						
FMA						
G & P						
Haggerty						
K-Lo						
King Open						
M. L. King Jr.						
Morse						
Peabody						

 = Math in Focus Implementation
 = Math in Focus Pilot Classroom
 = MKEA Assessment Implementation

- Professional Development:
 - Teachers
 - Administrators
- Transfer Tasks
 - Process
 - Next Steps

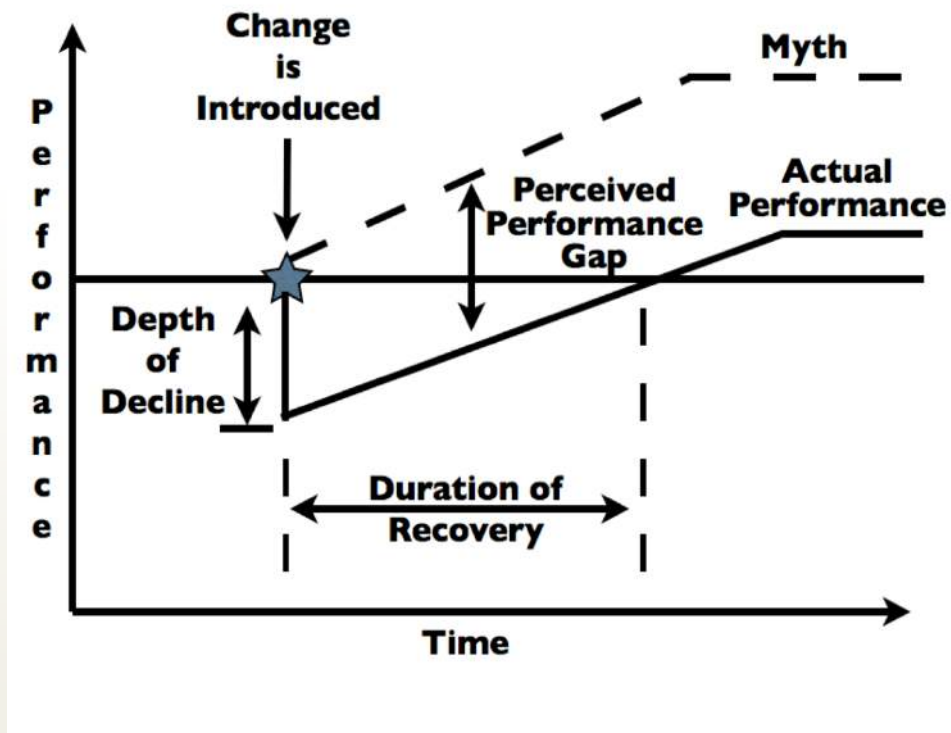
- The Pluses
 - Resources
 - Balance between conceptual and procedural
 - Professional development
 - Rigor and engagement
 - Attitudinal shifts

- The Challenges
 - Material Procurement
 - Backfilling
 - Adjusting to lesson structure

FROM THE PRACTITIONERS

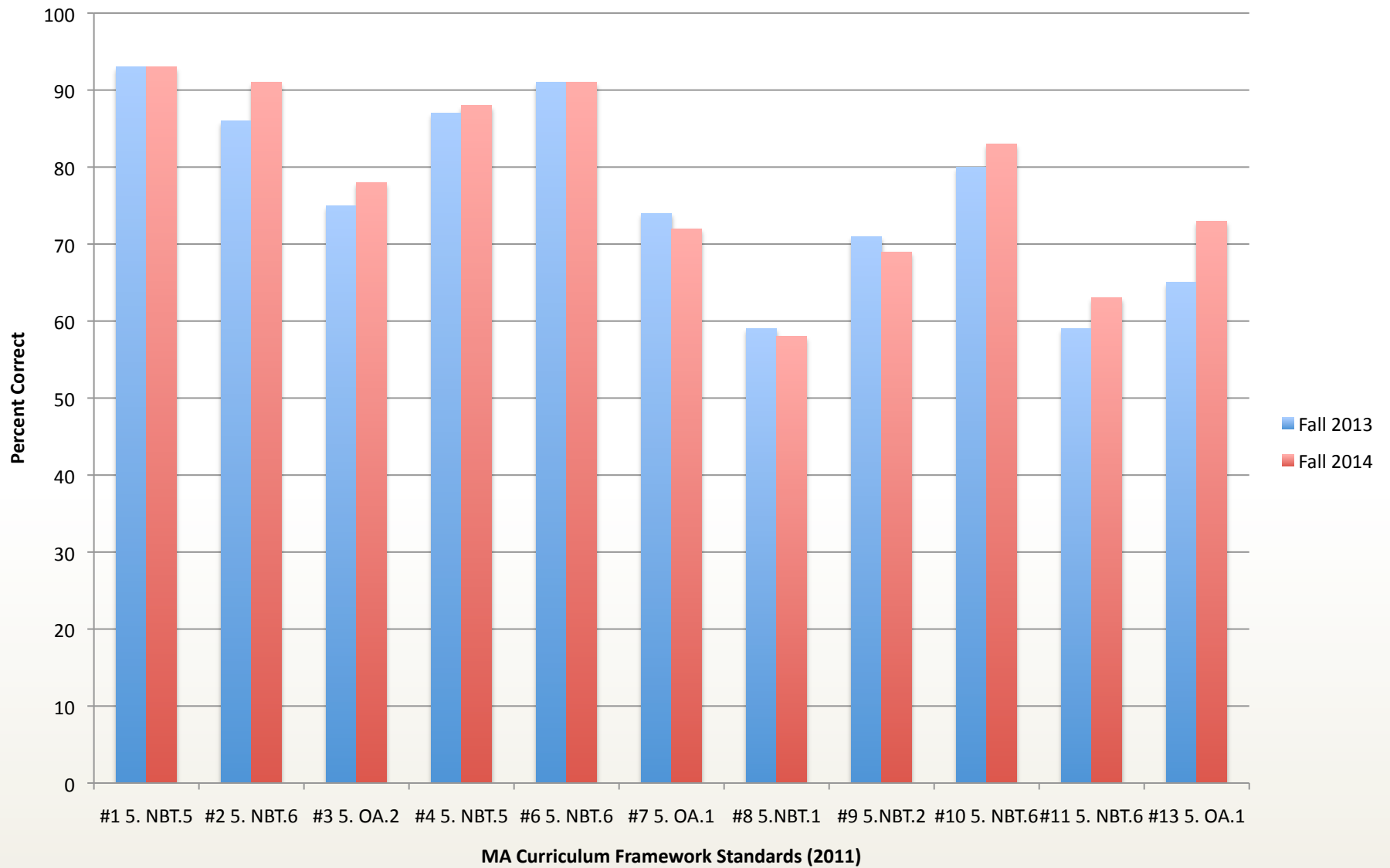
DATA ANALYSIS

- Our worry:

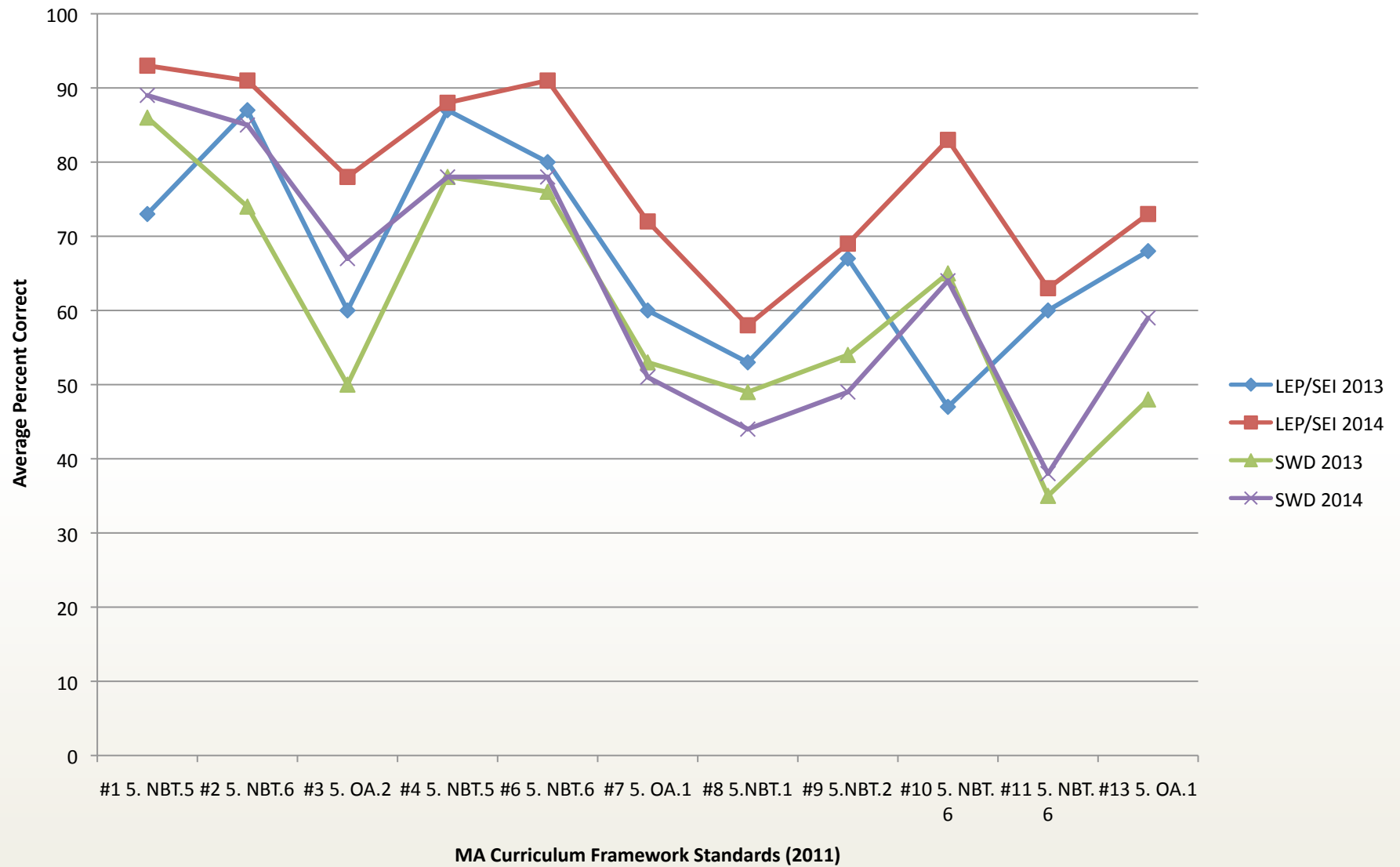


- Elementary District Assessment data shows:
 - No decrease in performance at grades 1 and 4
 - An increase on most questions at grade 5
 - English Language Learners outperforming as compared to Fall 2013 on Grade 4 and 5 District Assessment
 - Students with Disabilities outperforming as compared to Fall 2013 on Grade 4 District Assessment

Grade 5 District Assessment Data

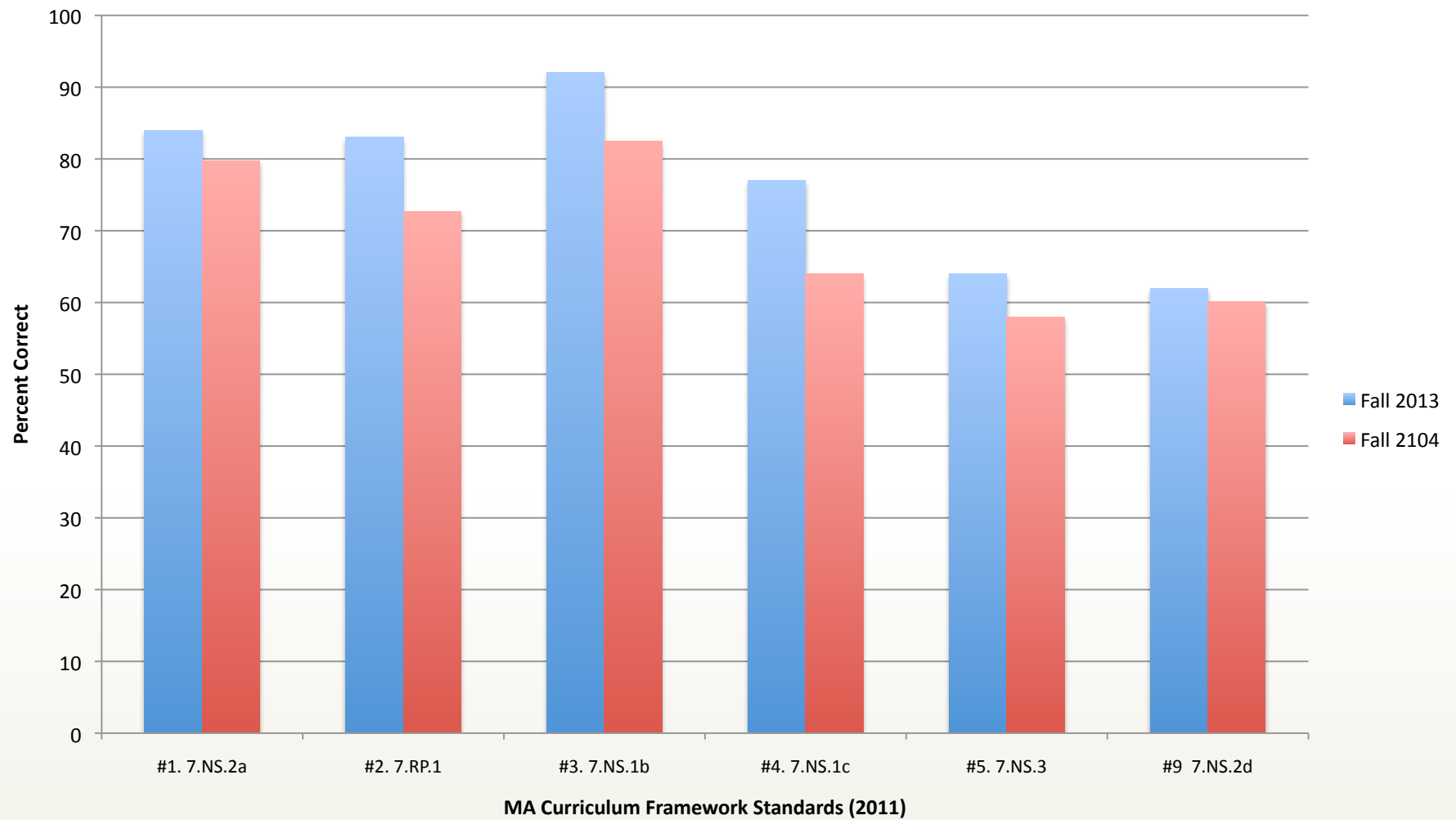


District Assessment Data - Grade 5

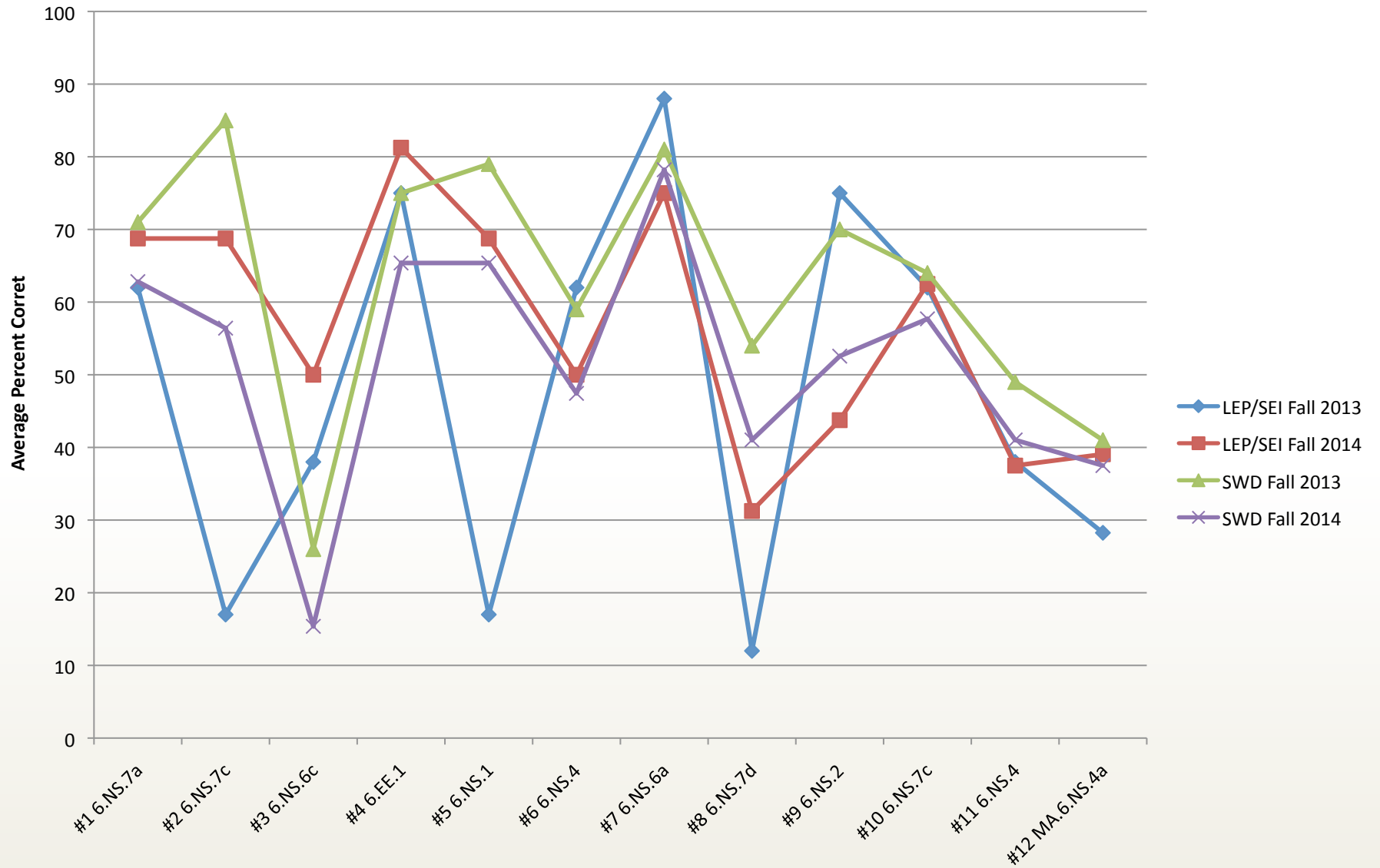


- Upper School District Assessment data shows:
 - Overall slight decrease at grades 6 and 7 for all students
 - An increase in performance for English Language Learners on most questions at grade 6 and 7
 - Performance gap between subgroups

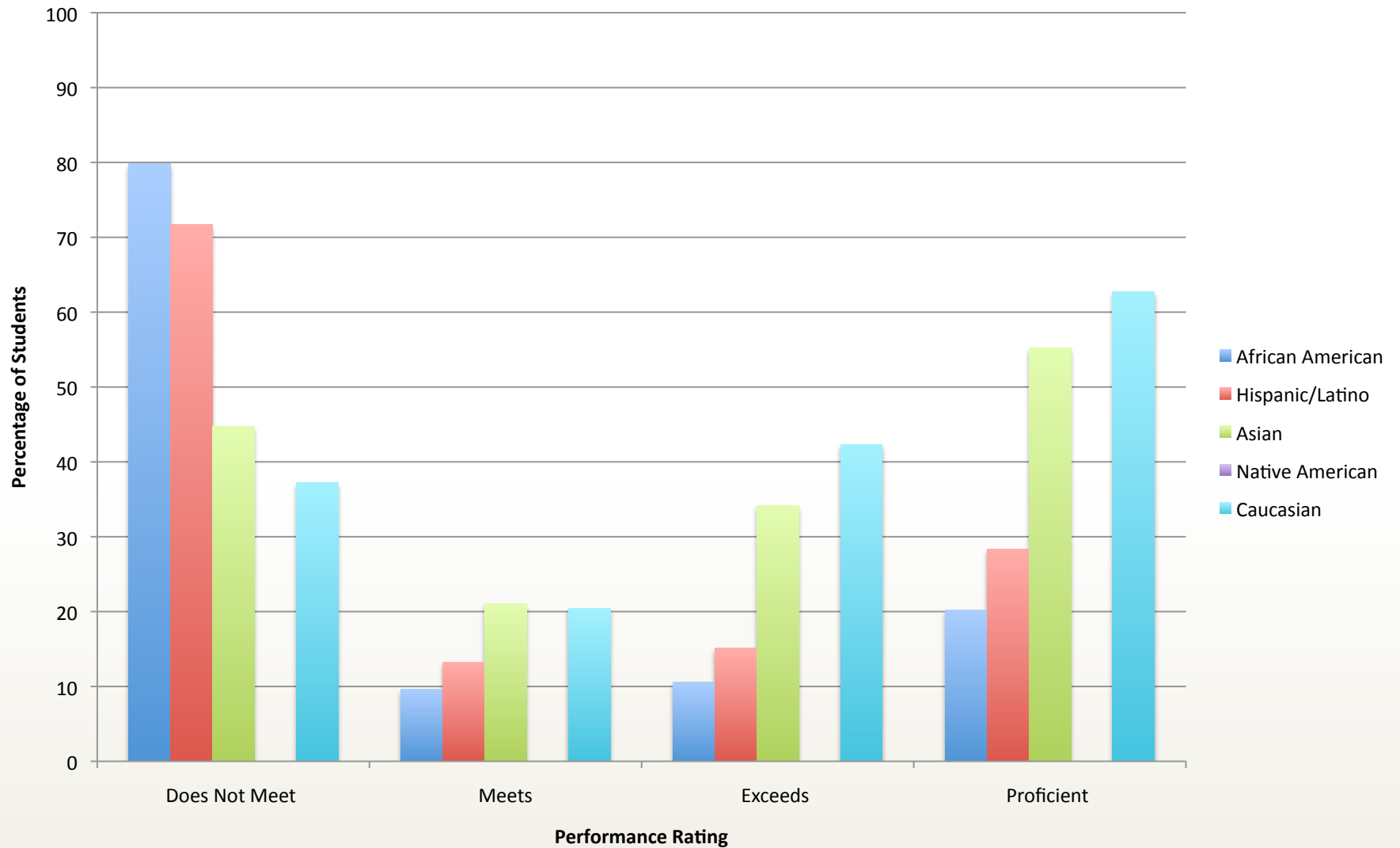
Grade 7 District Assessment Data



District Assessment Data - Grade 6



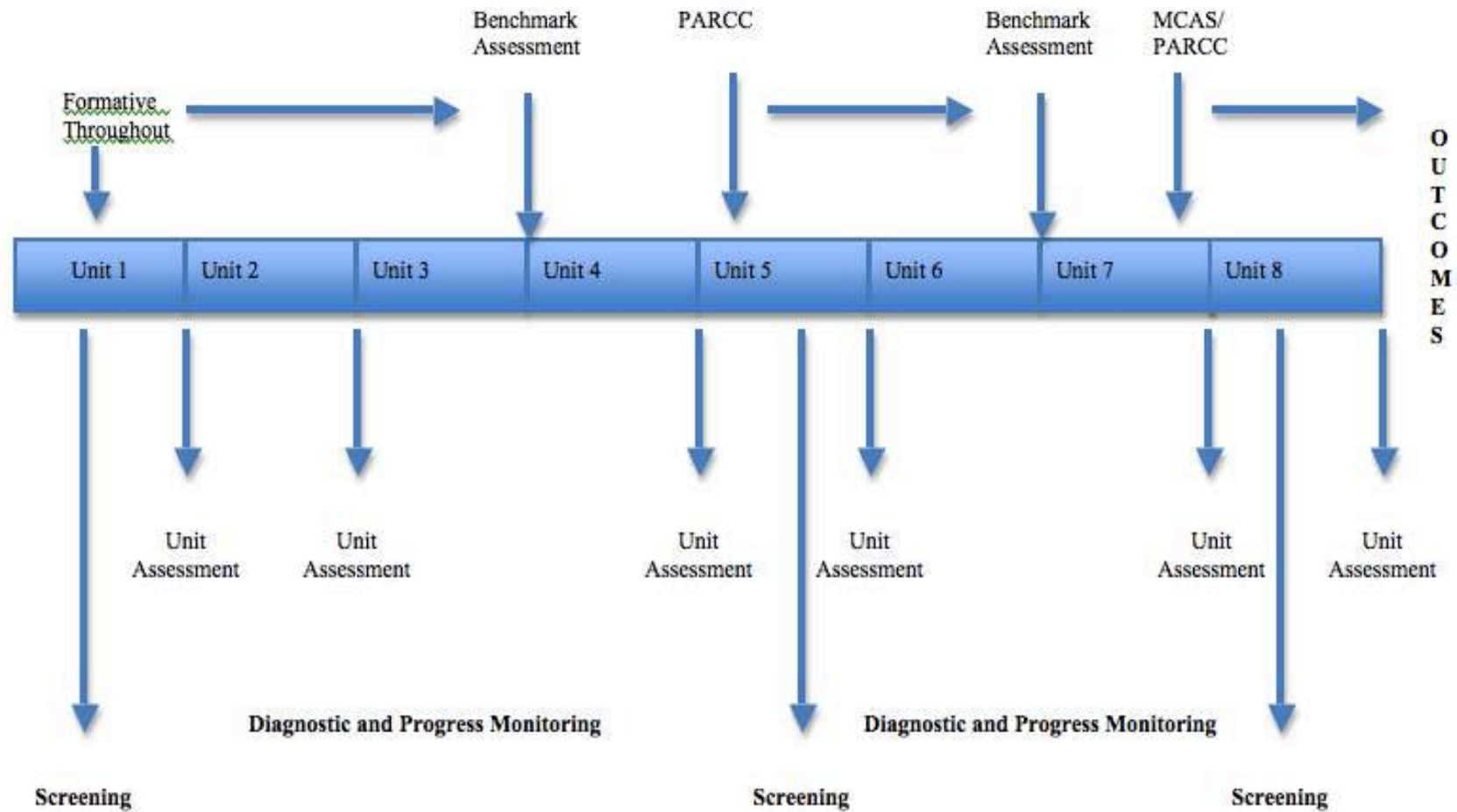
Grade 7 Performance and Demographic Data



NEXT STEPS

- SY 2015-2016 Roll Out
- Strengthening RTI
- Summer Math 180
- Task Force
- Data Analysis
- New Common Assessments

Year-Long Curriculum and Instructional Program



THE ACCELERATED MATH PATHWAY

Making CPS Work for ALL Learners

ACCELERATED MATH PATHWAY (AMP)

- Some history

School	2012-2013		2013-2014		2014-2015	
	# Enrolled in Algebra I	# Passed CRLS Algebra I Exam*	# Enrolled in Algebra I	# Passed CRLS Algebra I Exam*	# Enrolled in 8th Grade AMP	# Passed CRLS Algebra I Exam**
Amigos	7	3	8	4	11	May 2015
CSUS	21	21	21	9	23	
PAUS	3	0	3	0	25	
RAUS	26	10	28	14	23	
VLUS	26	1	26	15	24	
Total:	83	35	86	42	106	

SUCCESSES

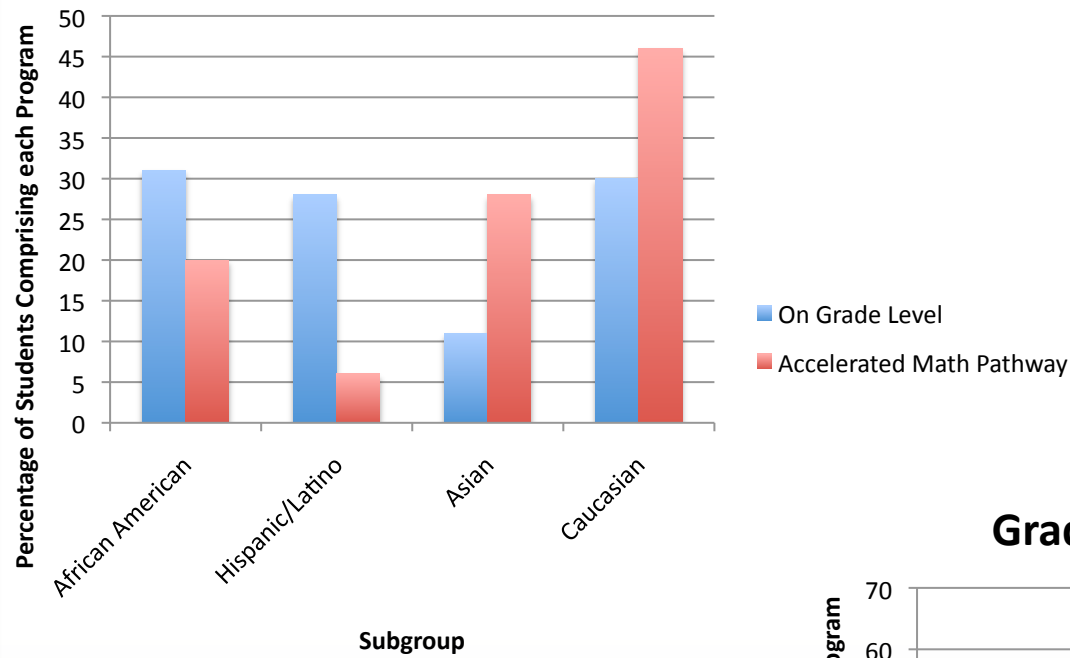
- Appropriately challenging students during the school day
- Students taking risks in a safe environment
- Students stepping up as leaders
- Student pride

IMPLEMENTATION CHALLENGES/UNINTENDED CONSEQUENCES

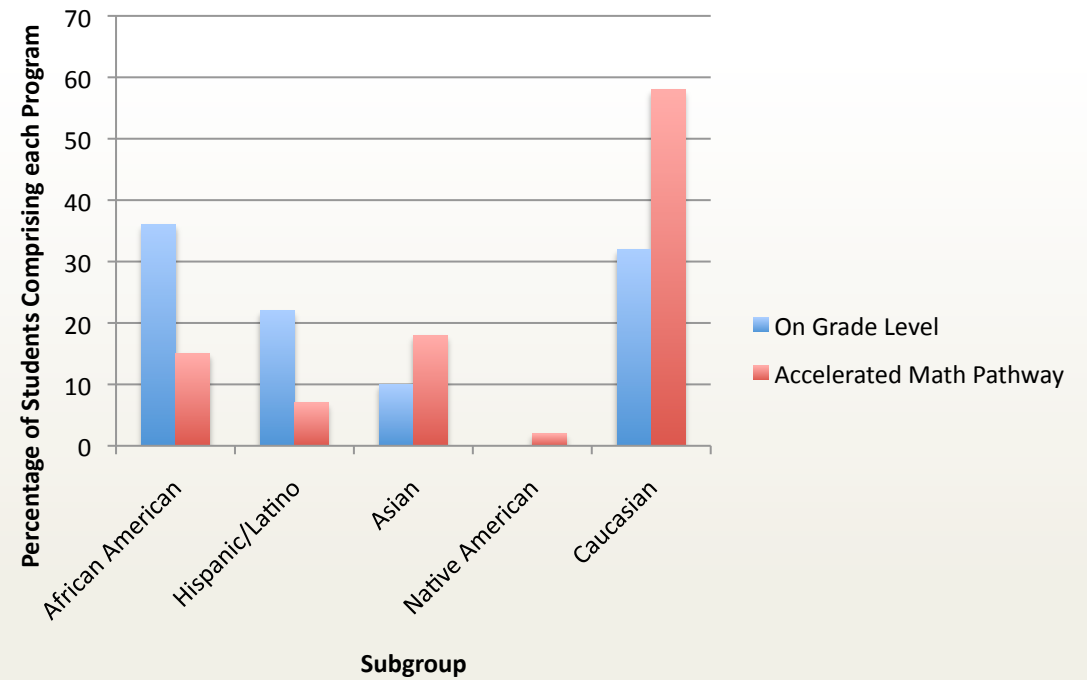
- Eligibility
- Scheduling/Class Size
- Math in Focus Roll Out
- Diversity
- Fluidity
- Timing/Pacing
- After School Support

DEMOGRAPHICS

Grade 8 District Demographic Data



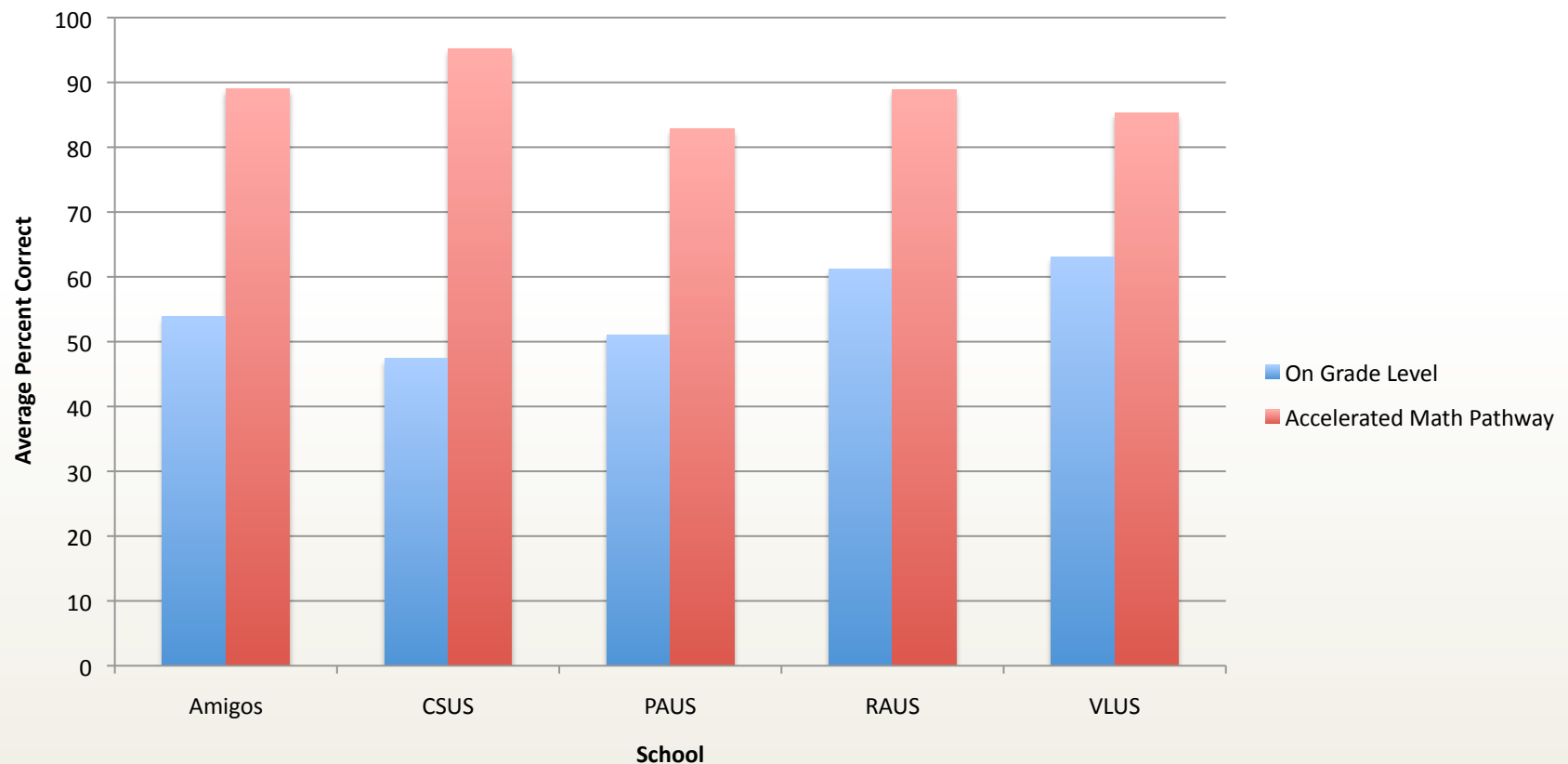
Grade 7 District Demographic Data



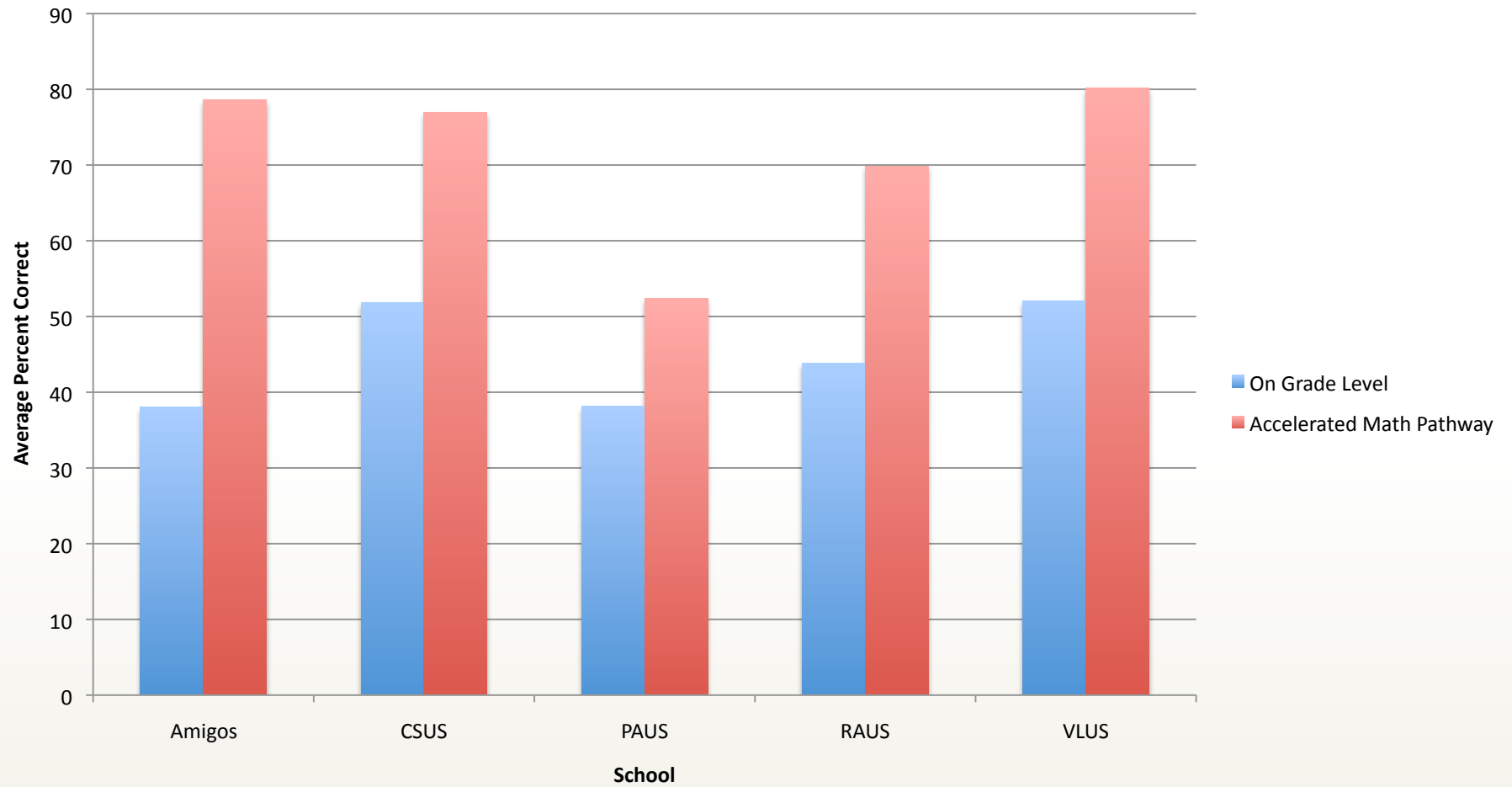
DISTRICT ASSESSMENT DATA ANALYSIS

AMP VS. ON GRADE LEVEL

Grade 7 Comparison of Percent Correct



Grade 8 Comparison of Percent Correct



RECOMMENDATIONS

- Grow the AMP at 7th grade
- Task Force
- Summer Programs:
 - AMP Support program
 - “Bridge” Program
- Modification to entrance criteria:
 - district assessments
 - teacher recommendation (normed)
 - MCAS score (actual score)
 - Iowa Algebra Aptitude Test Score

Skill/Topic	3	2	1
Problem Solving, Critical Thinking, and Logical Reasoning	<u>Reading and Understanding</u> Consistently <ul style="list-style-type: none"> Is able to explain the context of a word problem and can rephrase the question in their own words. Is able to connect the word problem to a concept. 	<u>Reading and Understanding</u> Sometimes <ul style="list-style-type: none"> Is able to explain the context of a word problem and can rephrase the question in their own words. Is able to connect the word problem to a concept. 	<u>Reading and Understanding</u> Seldom <ul style="list-style-type: none"> Is able to explain the context of a word problem and can rephrase the question in their own words. Is able to connect the word problem to a concept.
	<u>Attacking the Problem</u> Consistently <ul style="list-style-type: none"> Chooses an appropriate operation or method to solve. Exhibits flexibility when choosing strategies. Monitors progress and productively changes methods when necessary Estimates before solving. Keeps track of process on paper in an organized and logical manner with clear solution. 	<u>Attacking the Problem</u> Sometimes <ul style="list-style-type: none"> Chooses an appropriate operation or method to solve. Exhibits flexibility when choosing strategies. Monitors progress and productively changes methods when necessary Estimates before solving. Keeps track of process on paper in an organized and logical manner with clear solution. 	<u>Attacking the Problem</u> Seldom <ul style="list-style-type: none"> Chooses an appropriate operation or method to solve. Exhibits flexibility when choosing strategies. Monitors progress and productively changes methods when necessary Estimates before solving. Keeps track of process on paper in an organized and logical manner with clear solution.
	<u>Assessing Answer</u> Consistently <ul style="list-style-type: none"> Finds a correct solution. Checks answer for reasonableness, and notices identifies and corrects mistakes. 	<u>Assessing Answer</u> Sometimes <ul style="list-style-type: none"> Finds a correct solution. Checks answer for reasonableness, and notices identifies and corrects mistakes. 	<u>Assessing Answer</u> Seldom <ul style="list-style-type: none"> Finds a correct solution. Checks answer for reasonableness, and notices identifies and corrects mistakes.

- Re-evaluation:
 - No later than end of first quarter
 - Use new common assessments in conjunction with teacher recommendation
 - Movement up with support plan
 - Movement down after ample support

SUMMER PROGRAMS

Supporting Learners

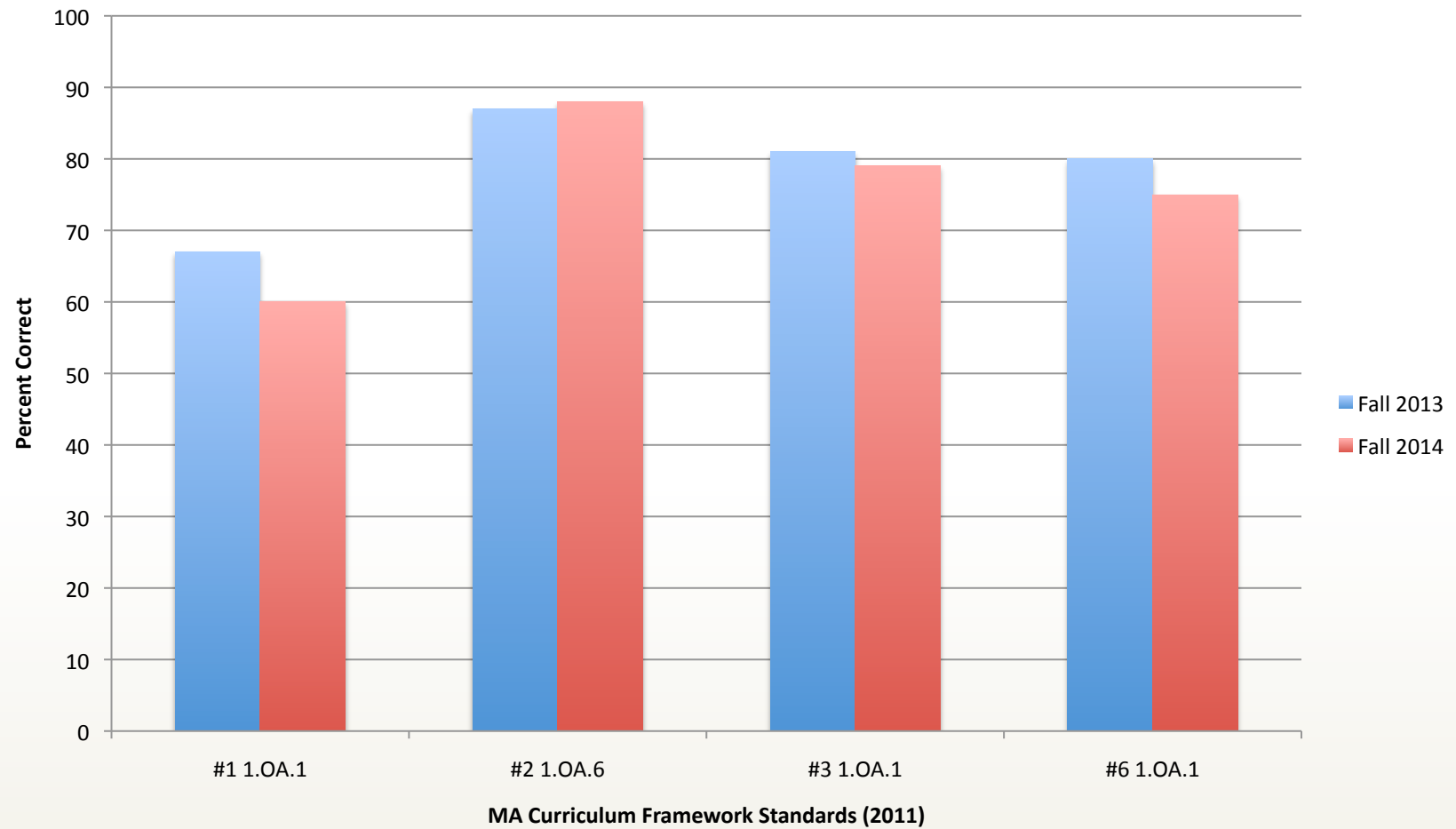
SUMMER PROGRAM

	Grade 7 on-grade level	Grade 7 Accelerated Math Pathway	Grade 8 on-grade level	Grade 8 Accelerated Math Pathway
Amigos	0	0	0	2
Cambridge St Upper School	1	0	0	2
Putnam Ave Upper School	0	0	0	1
Rindge Ave Upper School	0	1	1	1
Vassal Lane Upper School	3	2	2*	0

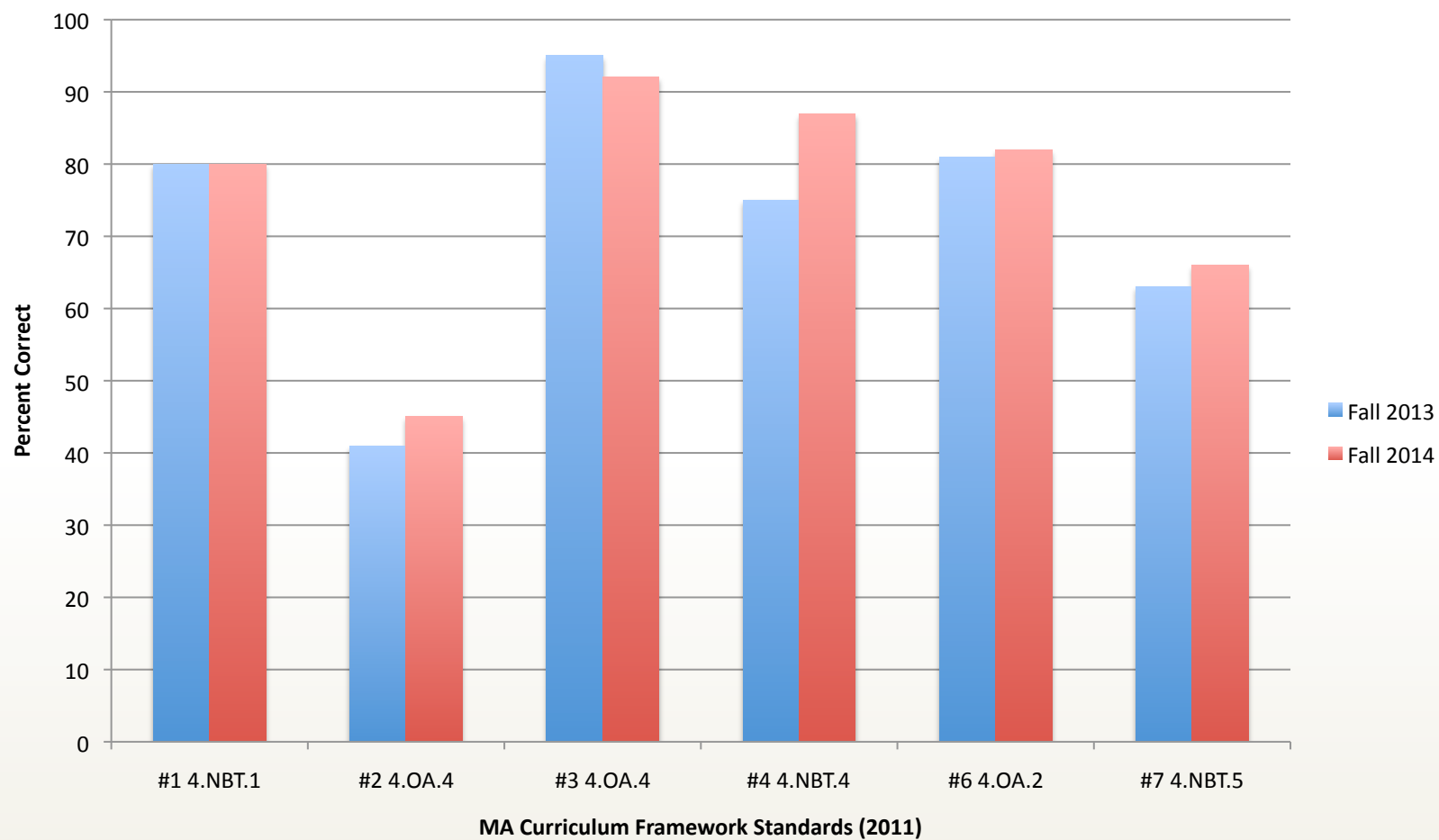
RECOMMENDATIONS

- Clear focus
- Expansion of programs
- Earlier advertisement and communication with families
- Transportation for students
- Continued coordination with East End House and Breakthrough

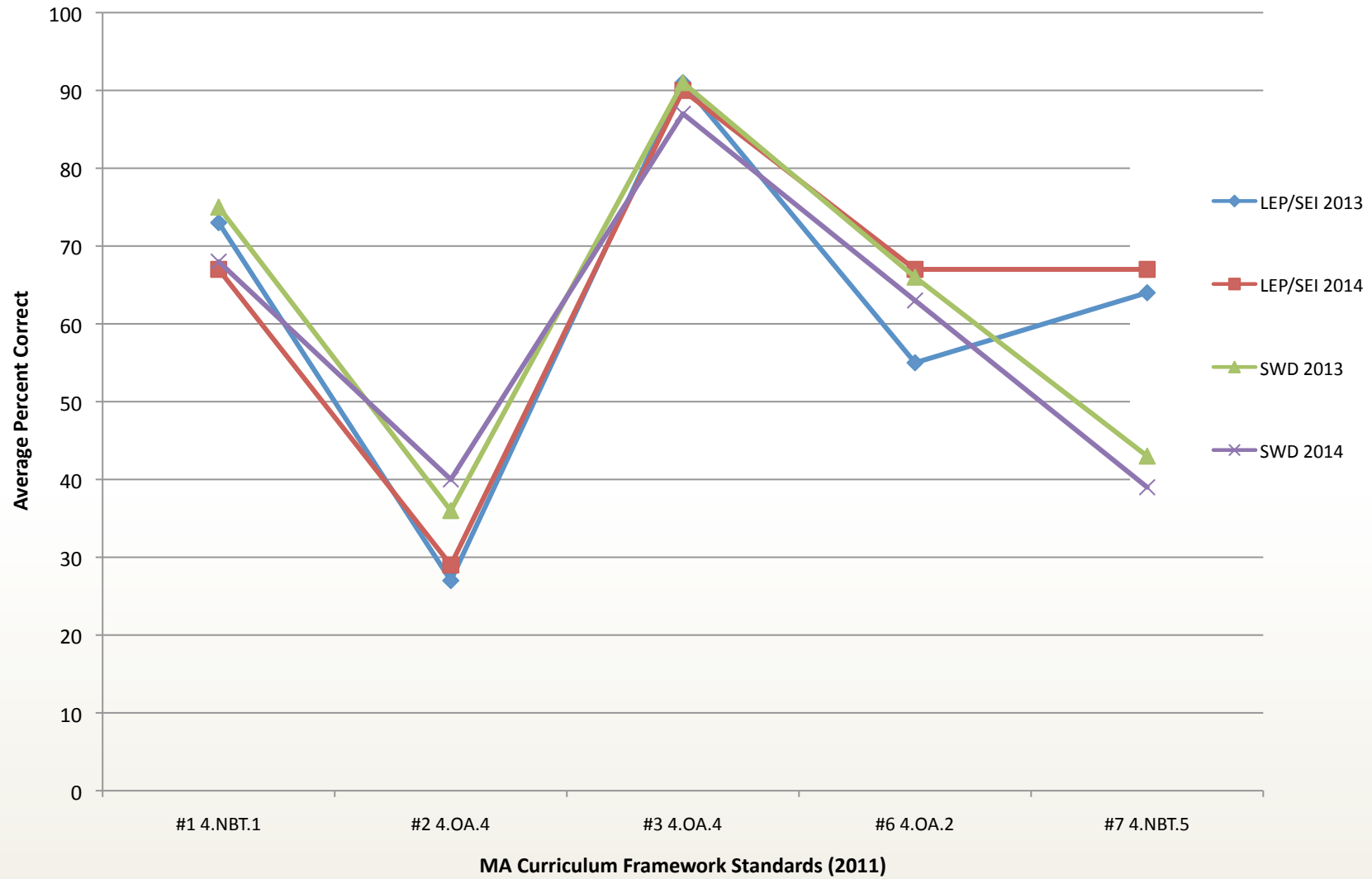
Grade 1 District Assessment Data



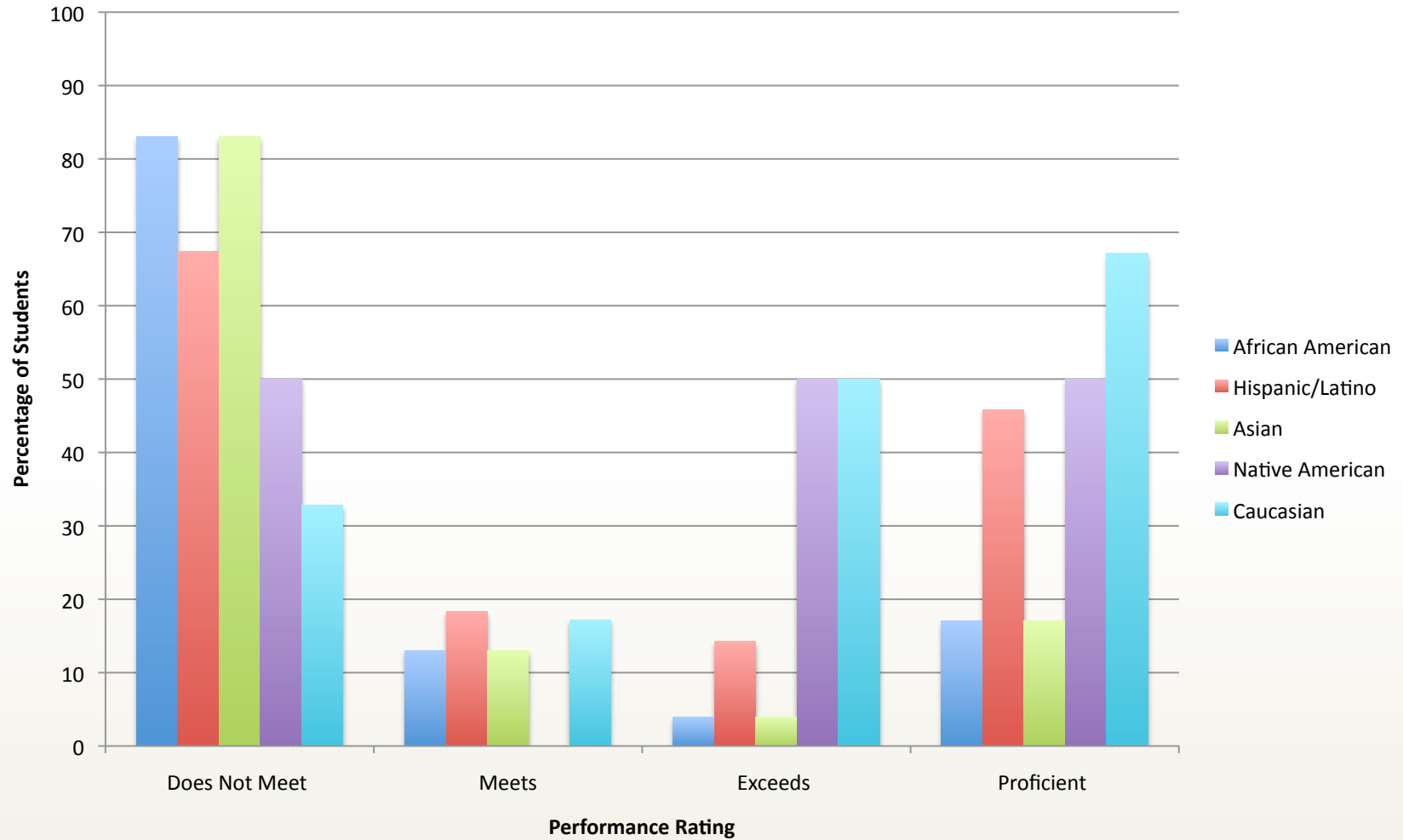
Grade 4 District Assessment Data



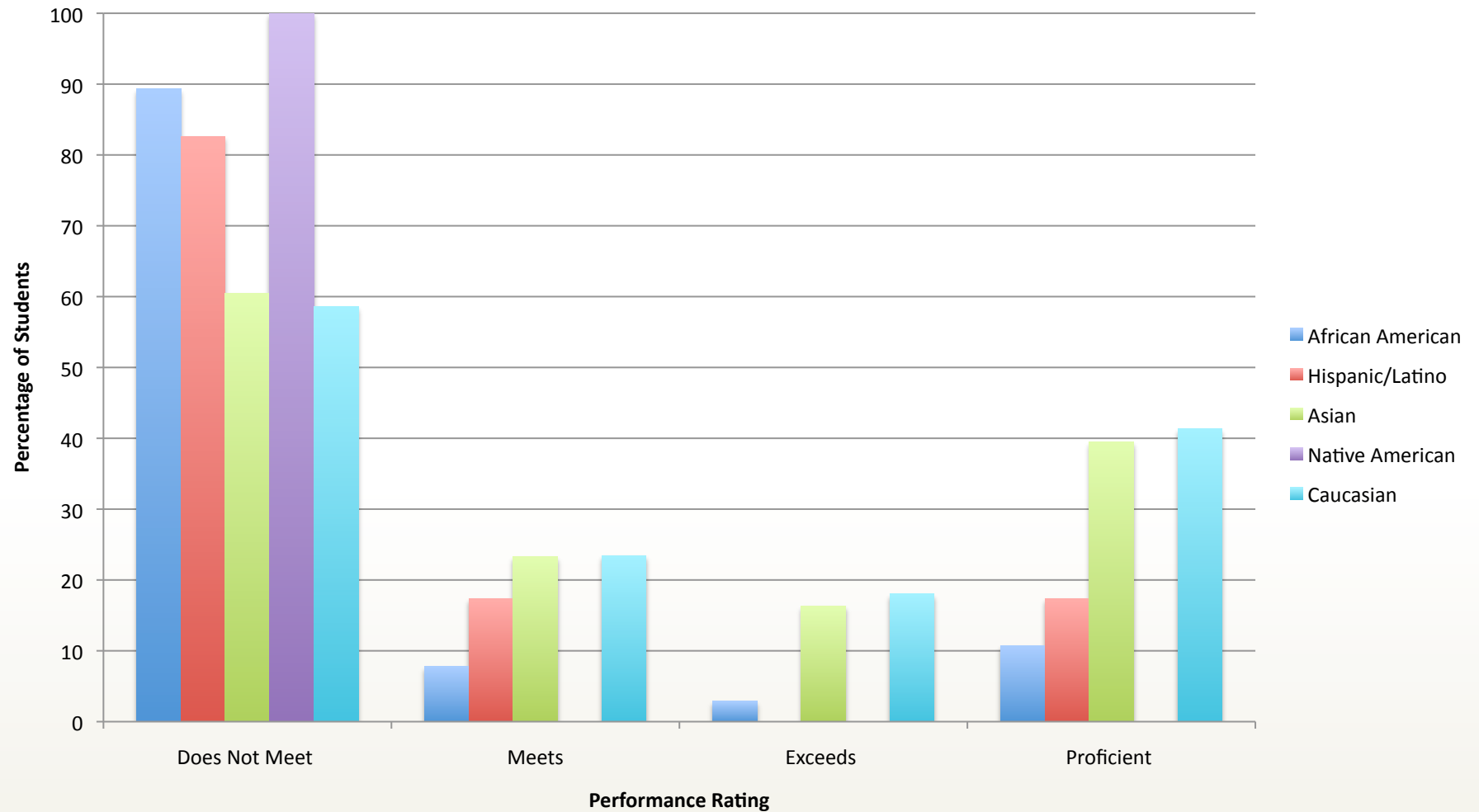
District Assessment Data - 4th Grade



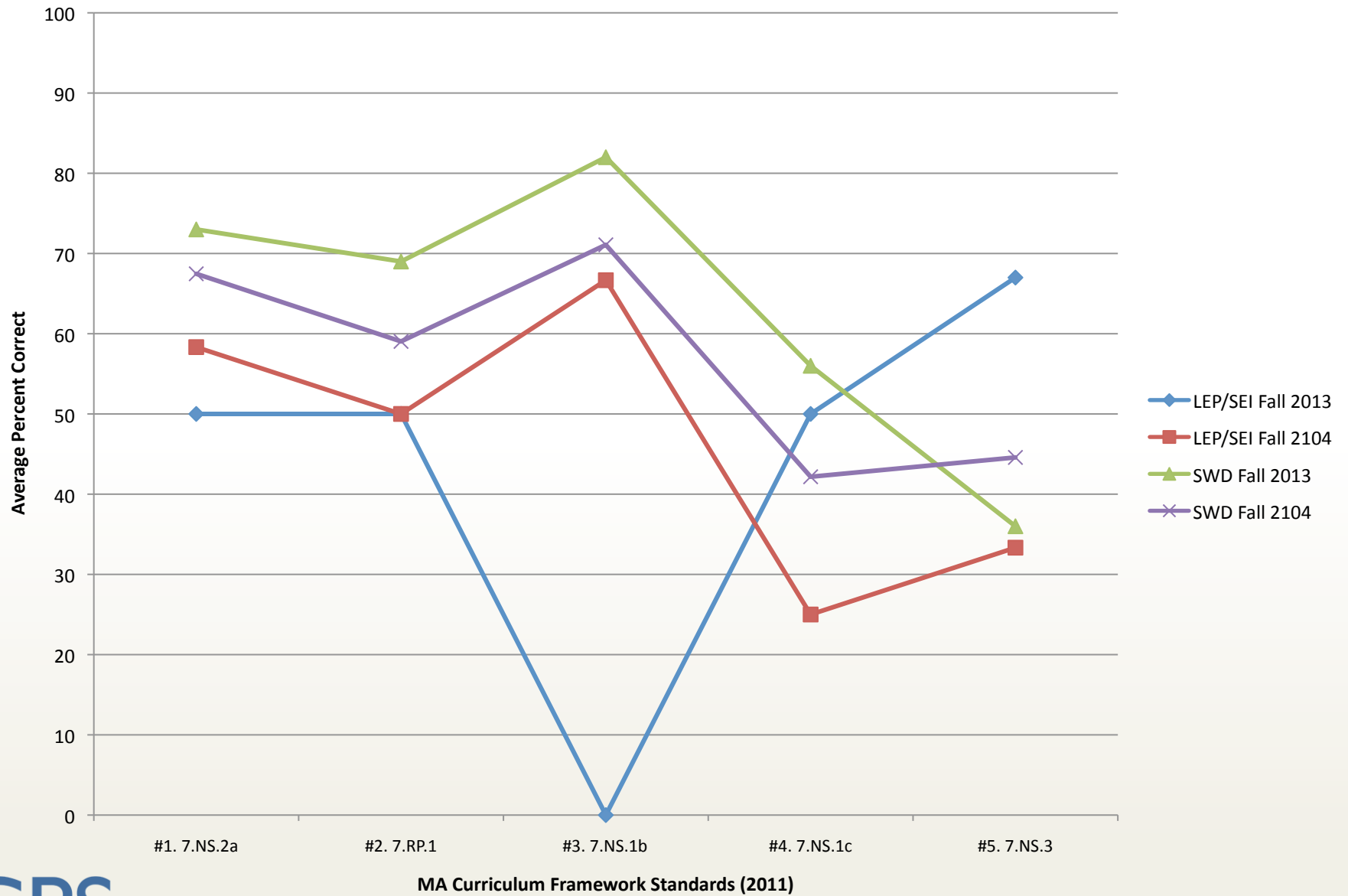
Grade 6 Performance and Demographic Data



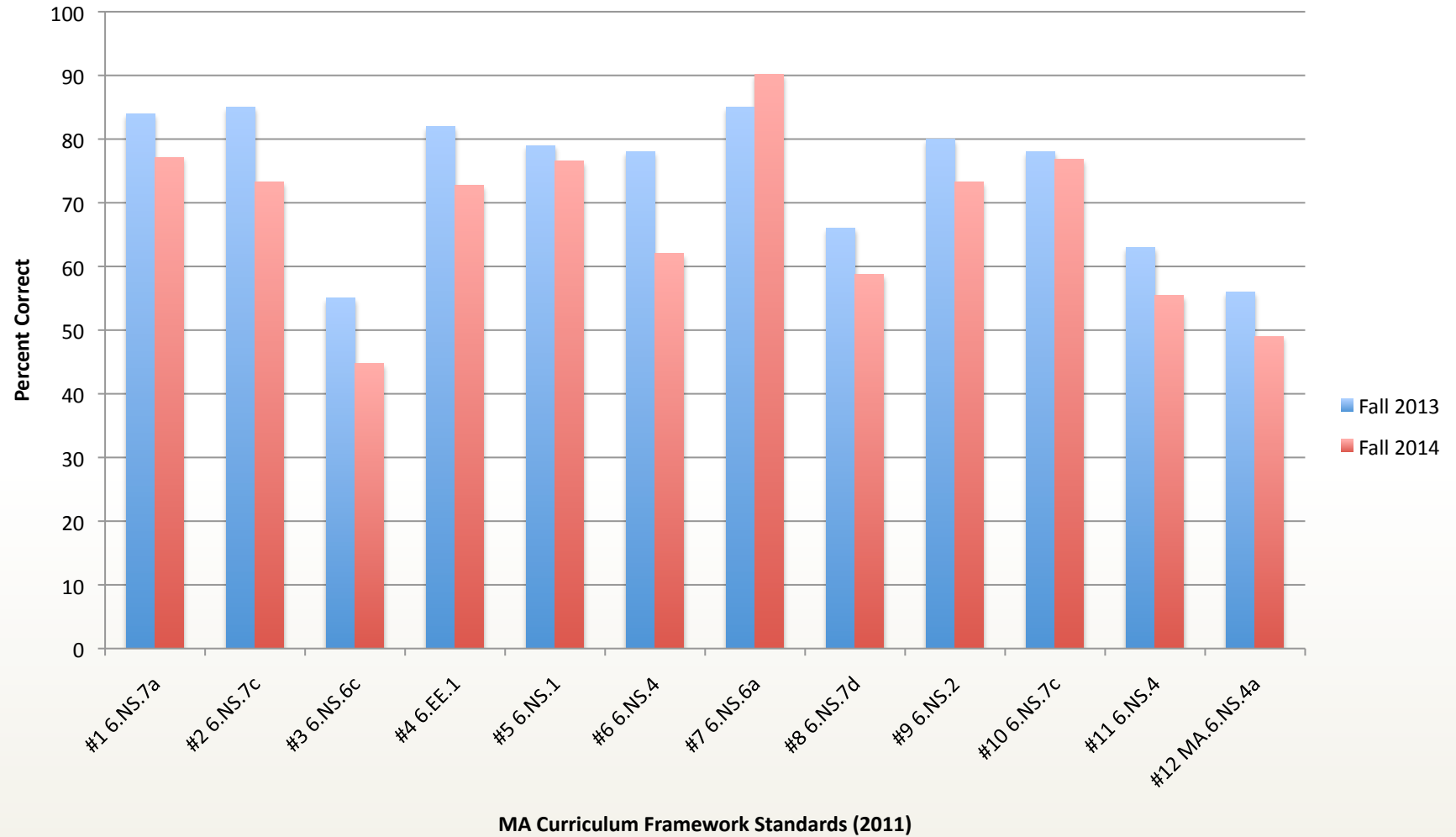
Grade 8 Performance and Demographic Data



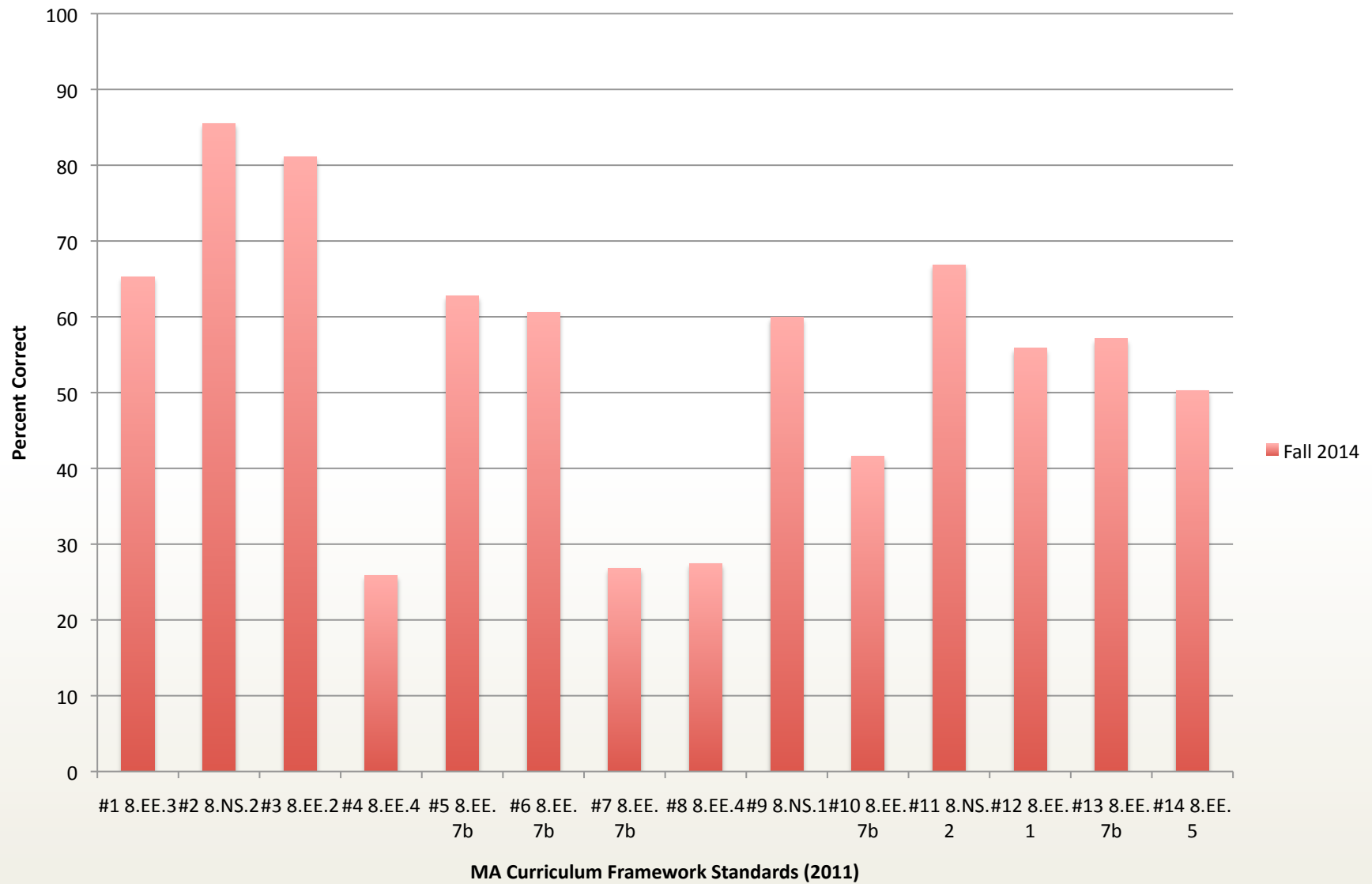
District Assessment Data - Grade 7



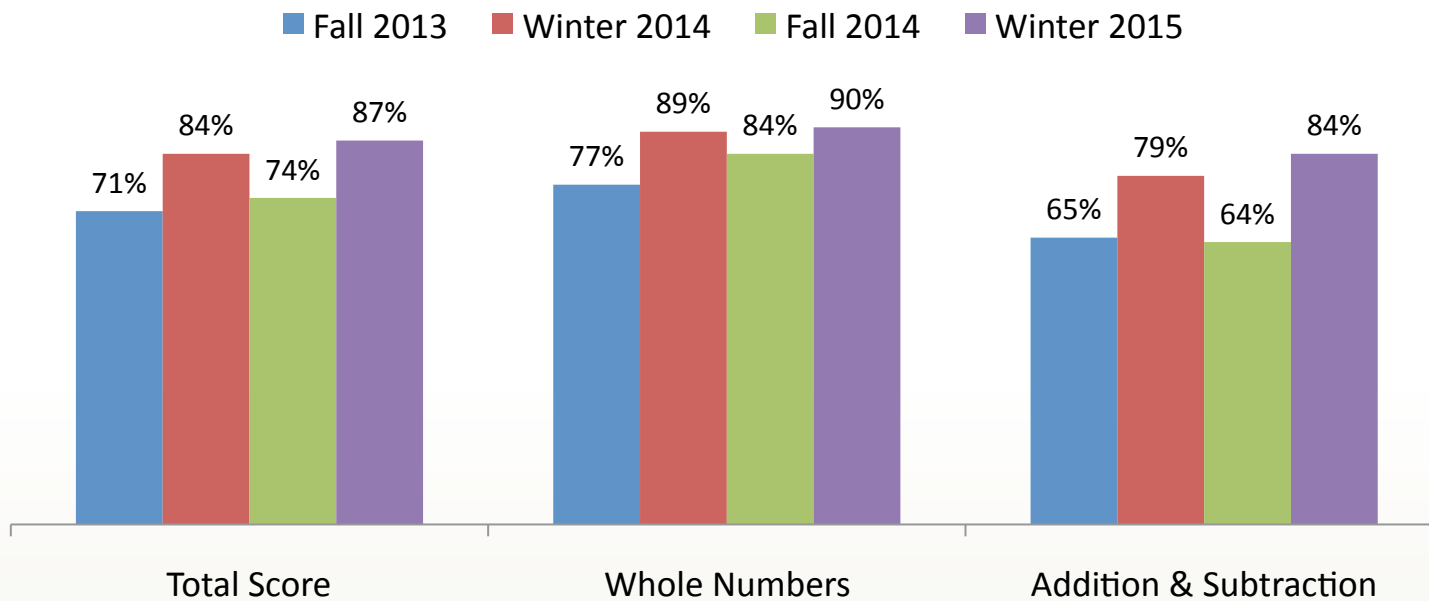
Grade 6 District Assessment Data



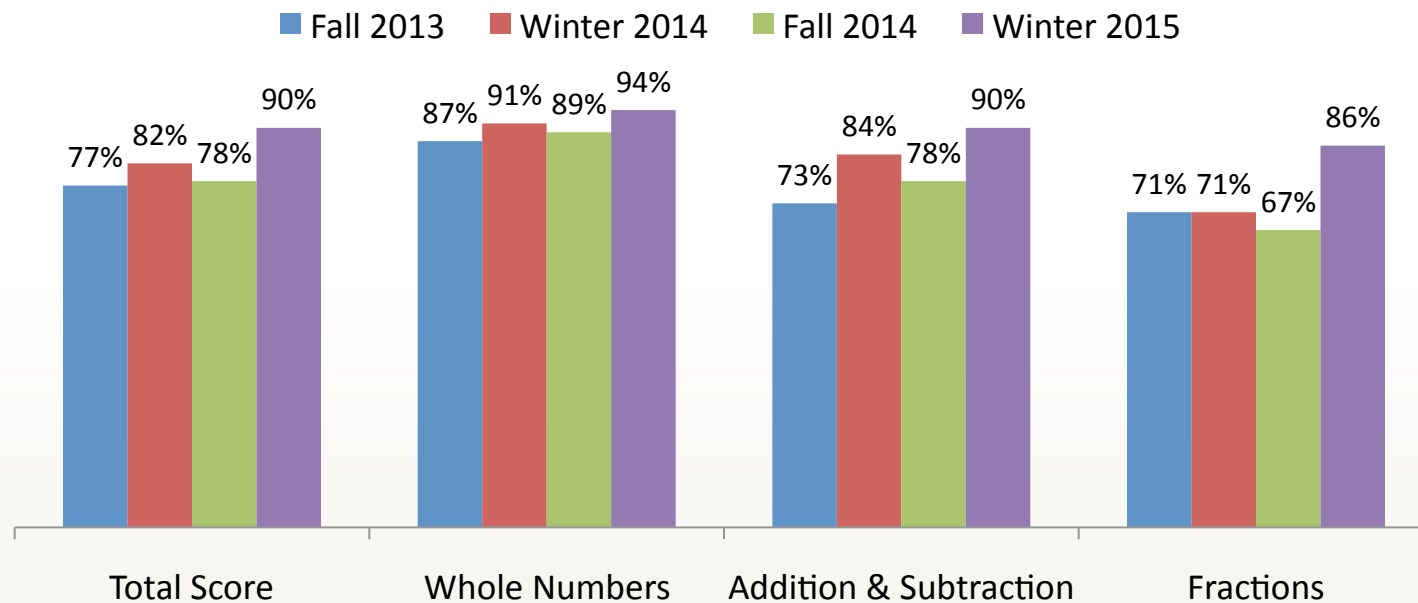
Grade 8 District Assessment Data



Grade 3 Fall Computational Fluency - % Correct



Grade 4 Fall Computational Fluency - % Correct



Grade 5 Fall Computational Fluency - % Correct

Fall 2013 Winter 2014 Fall 2014 Winter 2015

