

ALGEBRA SUCCESS

November 17, 2011

Sade Bonilla, Strategic Data Fellow

Joint Middle-High School Meeting



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Research, Deployment & Accountability

*“We envision that every child has
Algebra I success at 9th Grade”*

- APS Academic Plan



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Overview

- I. SY 2010-2011 Baseline Data
- II. Longitudinal study of Algebra I students
- III. Fall 2011 Data
 - I. 6-Week Algebra I Course Performance
 - II. Placement Pathways
- IV. Implications for practice



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2010-11 BASELINE DATA

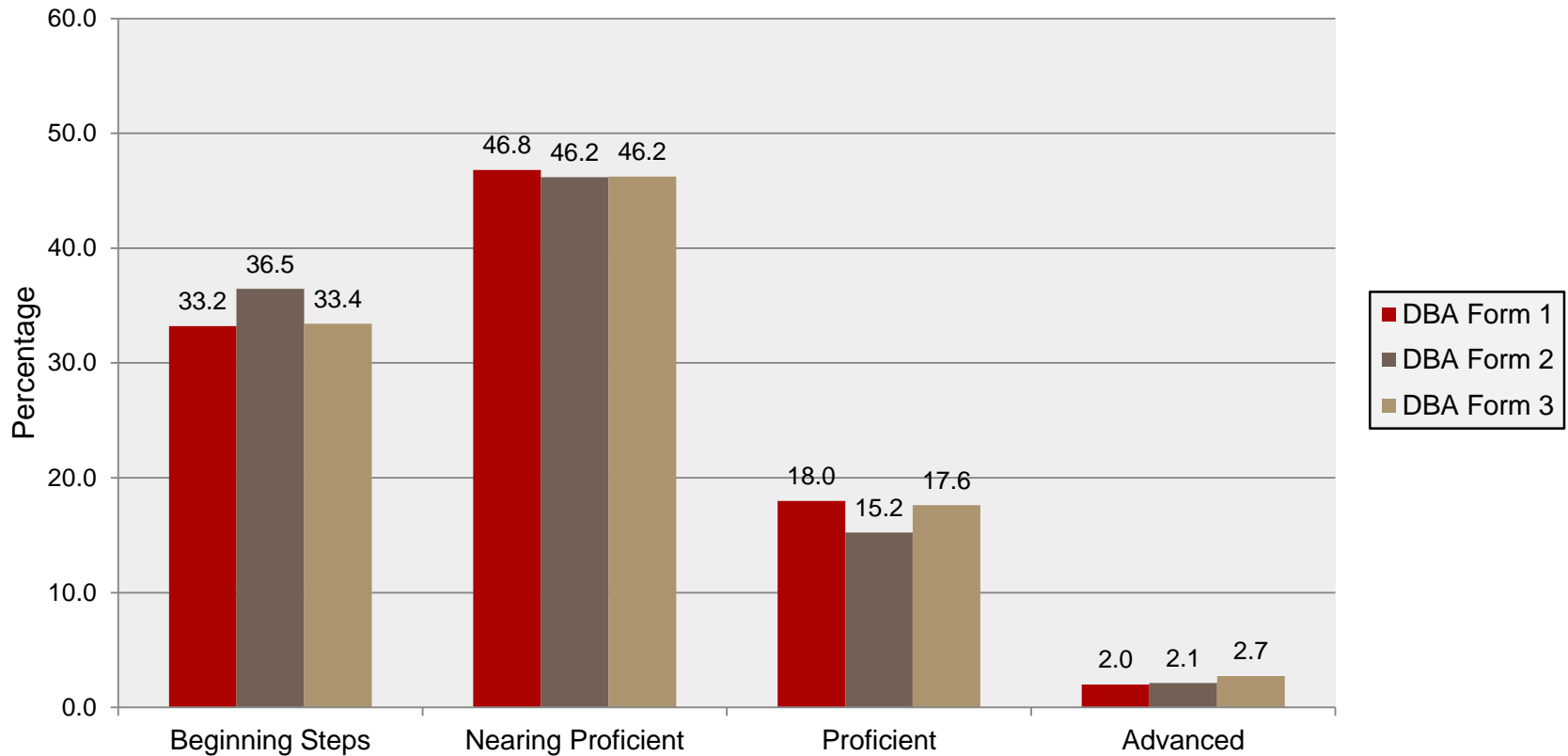
Where did we stand at the end of last year?



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Algebra I District Benchmark Assessment Results Proficiency Levels 2011



Note: Data retrieved June 15, 2011 N=6,794 for Form 1; N=6,436 for Form 2; N=6,515 for Form 3

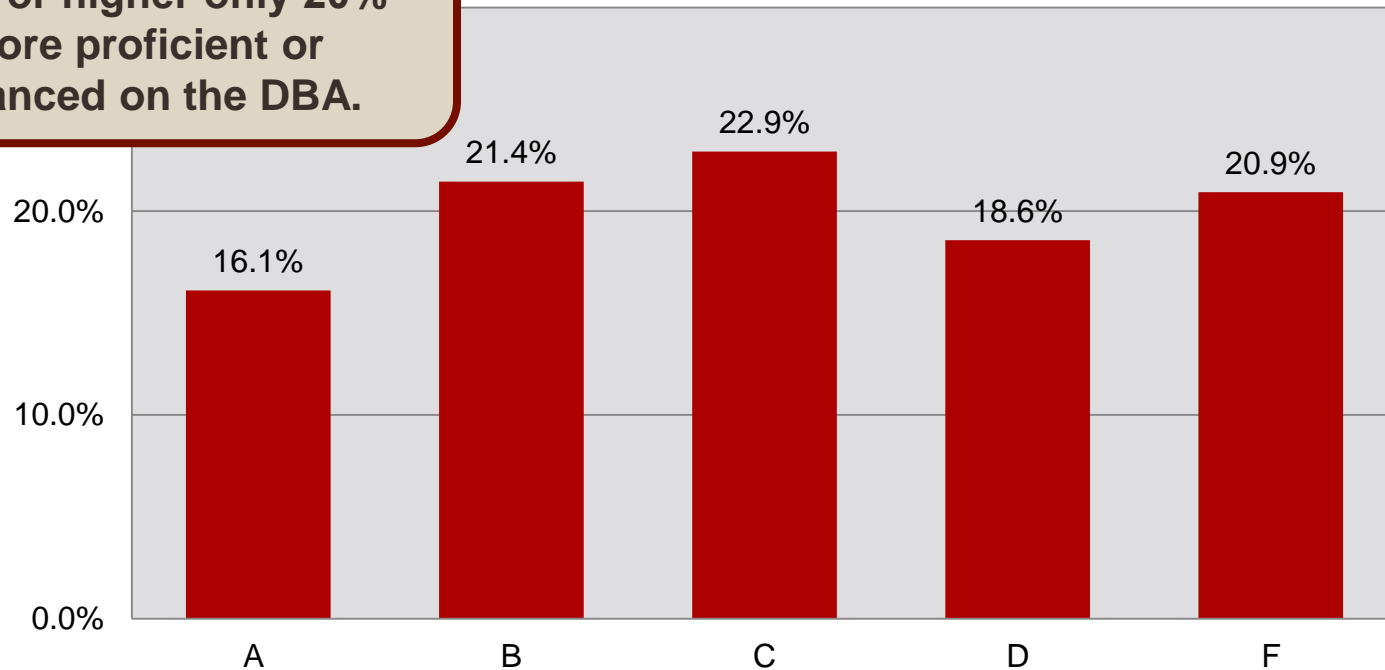


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Grades Earned in Algebra I: Spring 2011

While 60% students receive a "C" or higher only 20% score proficient or advanced on the DBA.



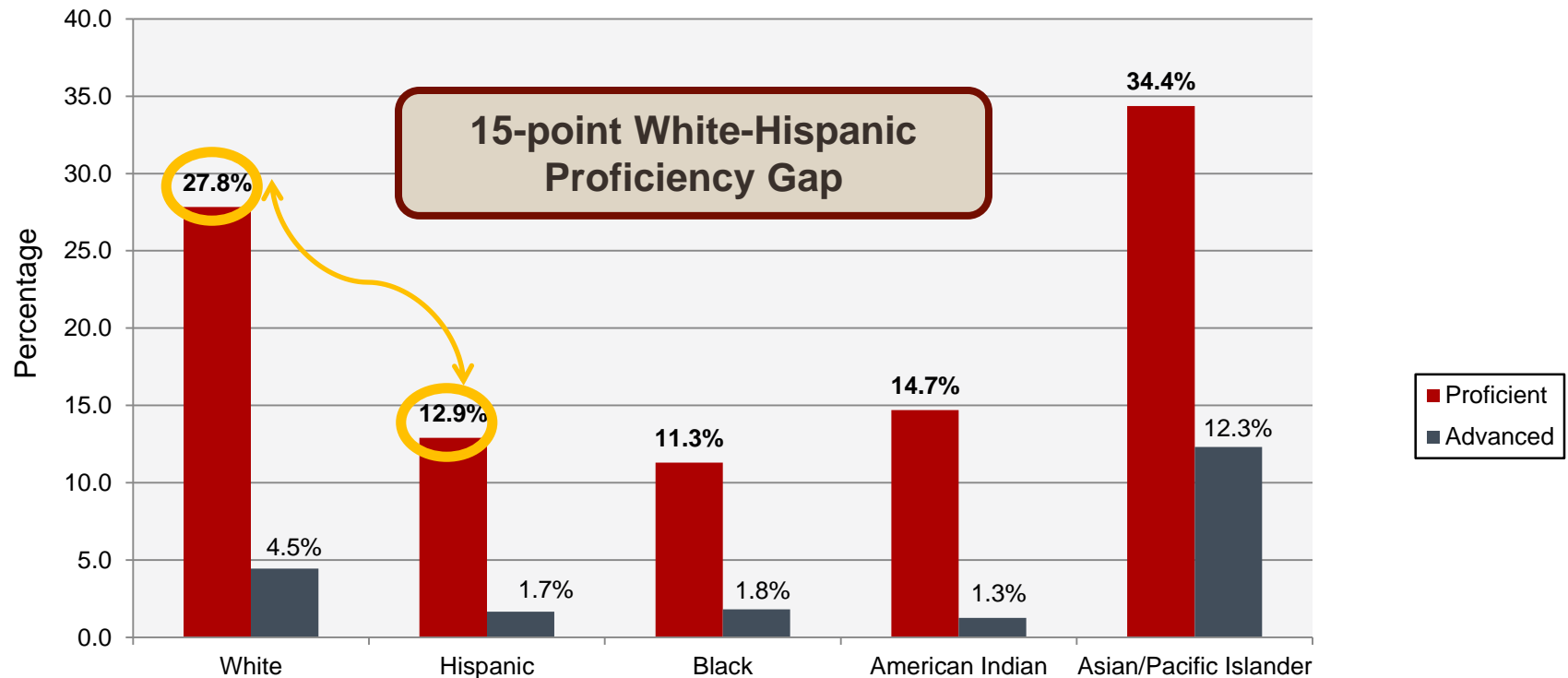
Note: Data retrieved July 7, 2011. N=7,209; Middle and High School students with grades in "Algebra 1 " included.



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DBA Form 3 Algebra I Results Proficiency Levels by Ethnicity 2011



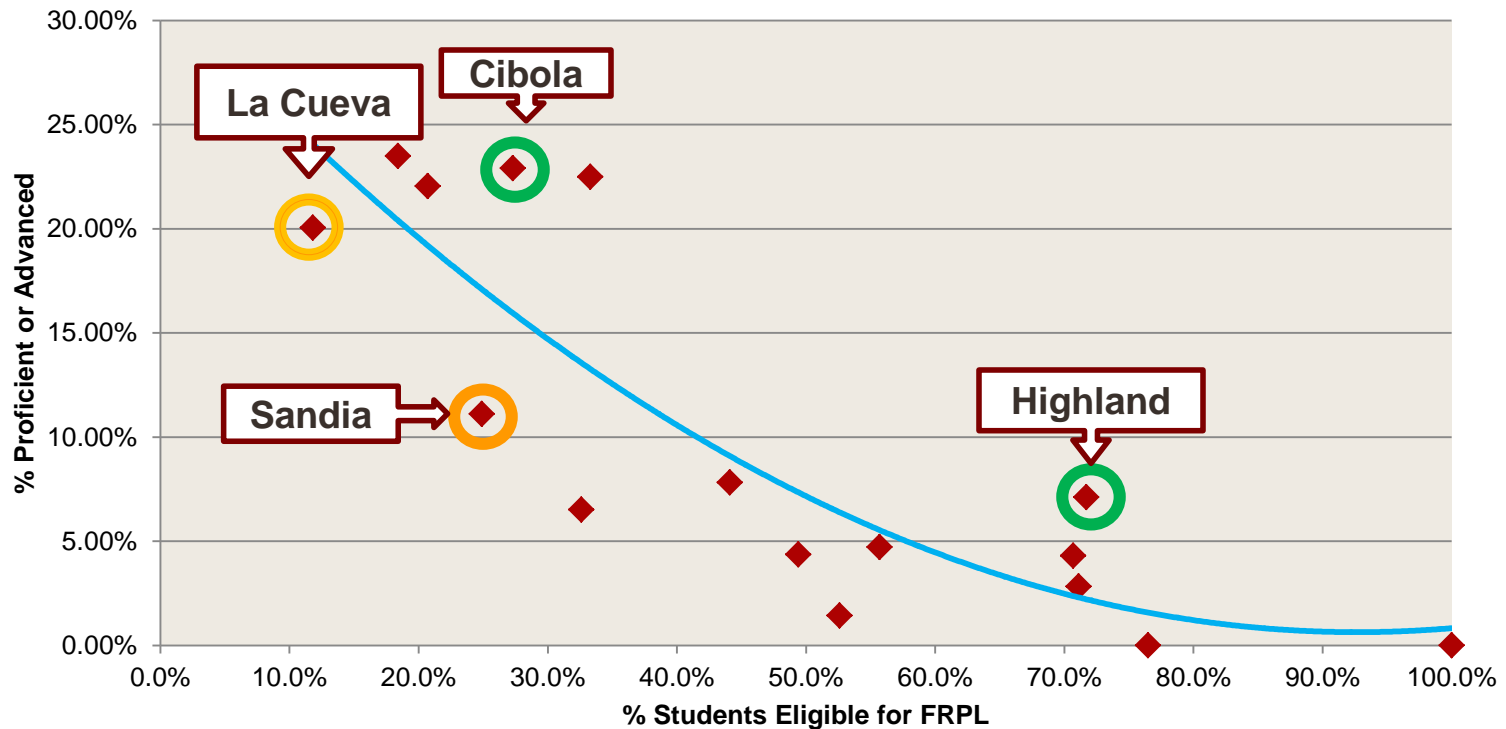
Note: Data retrieved June 15, 2011 N=6,499



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Algebra I Spring DBA Results: Proficient or Advanced by FRPL



Note: Data retrieved June 15, 2011. Only high schools are included. N= 5,893

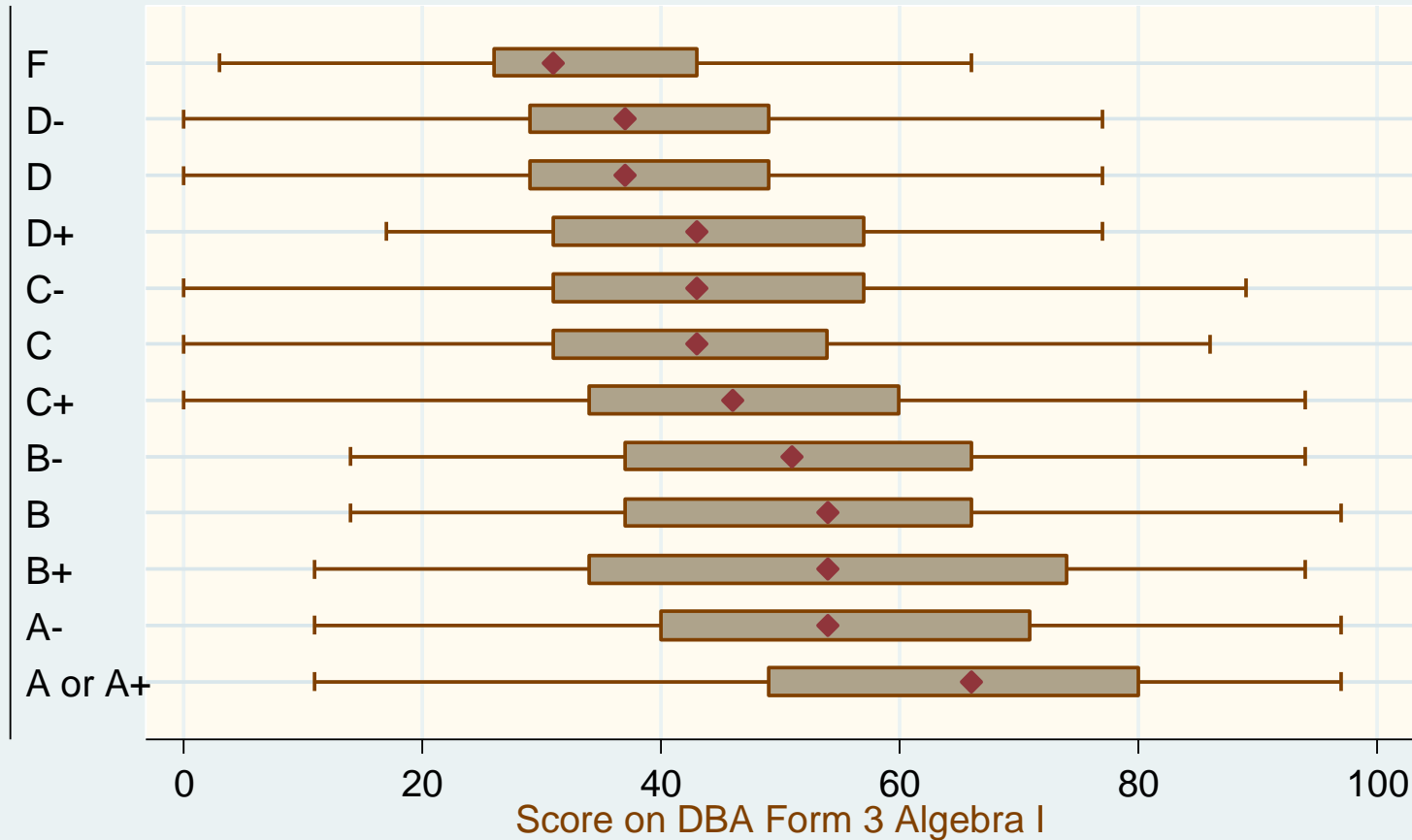


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How does Class Performance Compare to DBA Performance?

Grade Earned in Algebra and Score on Form 3 DBA



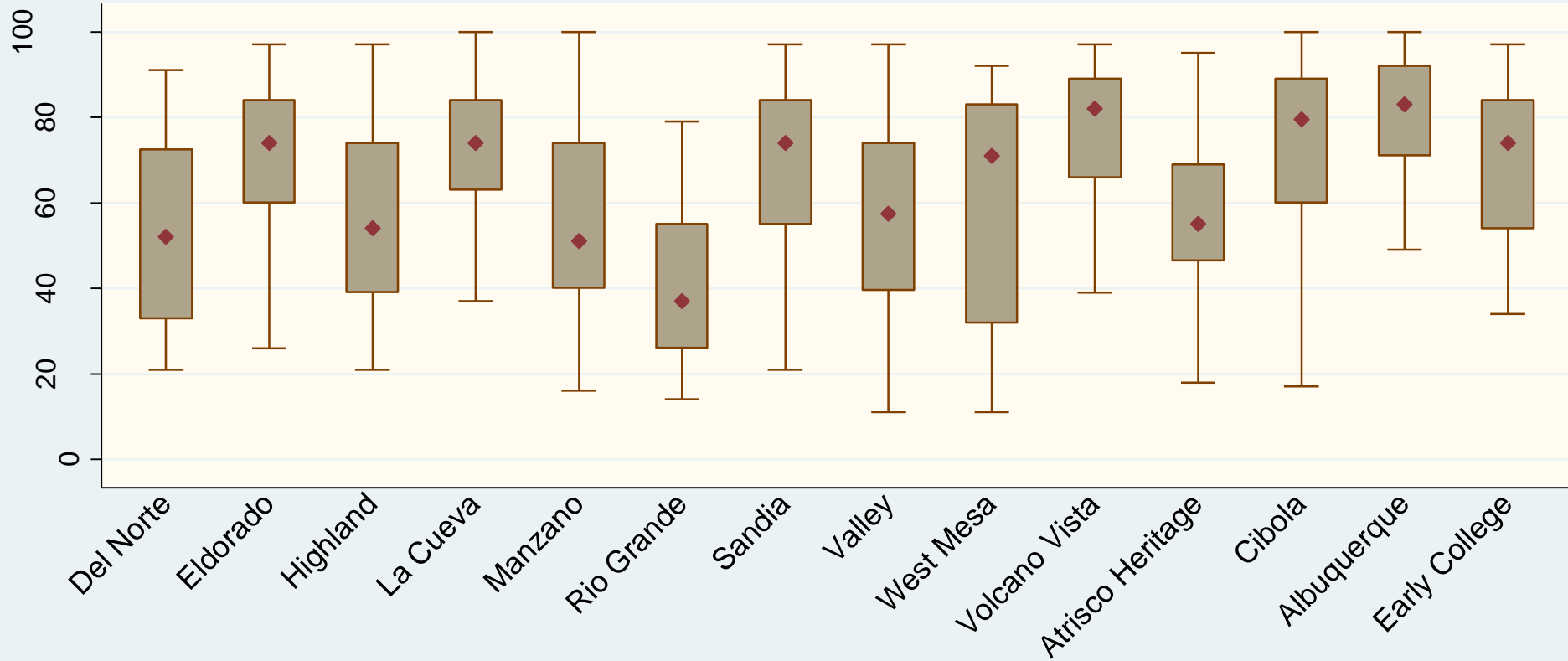
Note that only high schools are included



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How does Class Performance Compare to DBA Performance? Grade of A or A+ and Form 3 DBA Performance



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UNDERSTANDING SUCCESS

What predicts success in Algebra I?



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What Does “Success” Look Like?

Criteria For Classification

1. Minimum score of 70 on Form 3 DBA
2. Spring grade of C- or higher

Grade of C-
or Higher in
Algebra I



Proficient or
Advanced
on Algebra I
DBA Form 3

“Algebra I
Success”

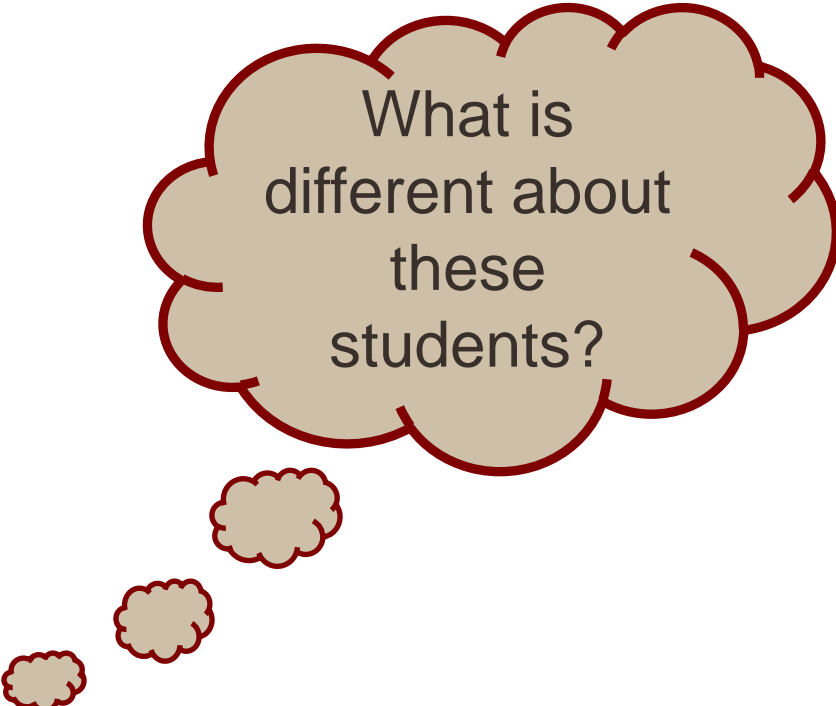


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Analyzing Successful Algebra I Students

- 1,241 of 7,244 students (17.1%) achieved “Algebra I Success”



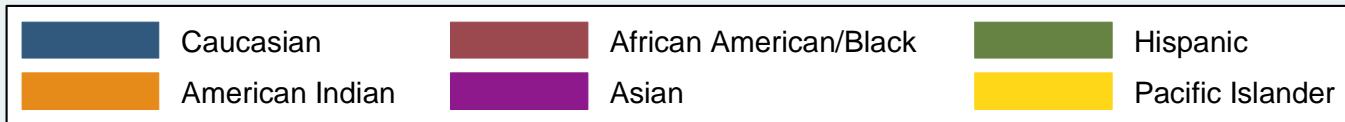
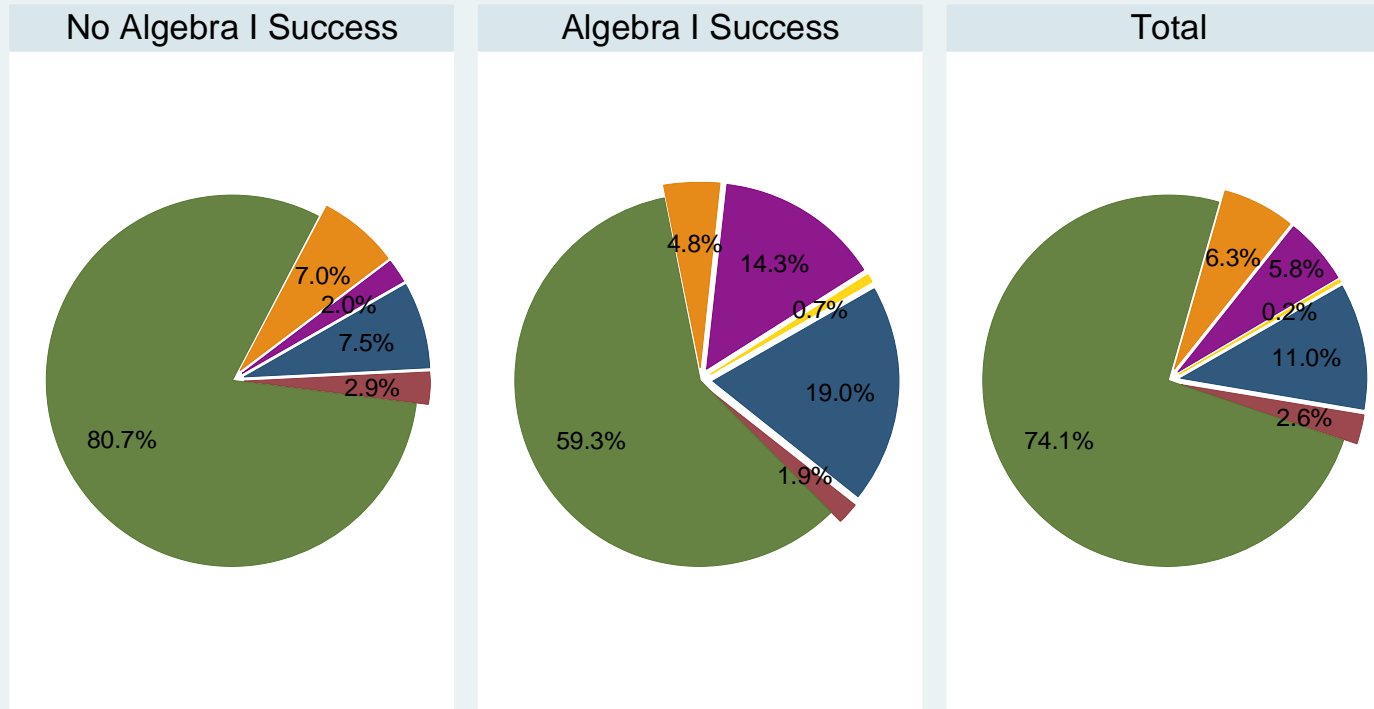
What is
different about
these
students?



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Ethnicity by "Algebra I Success" Classification



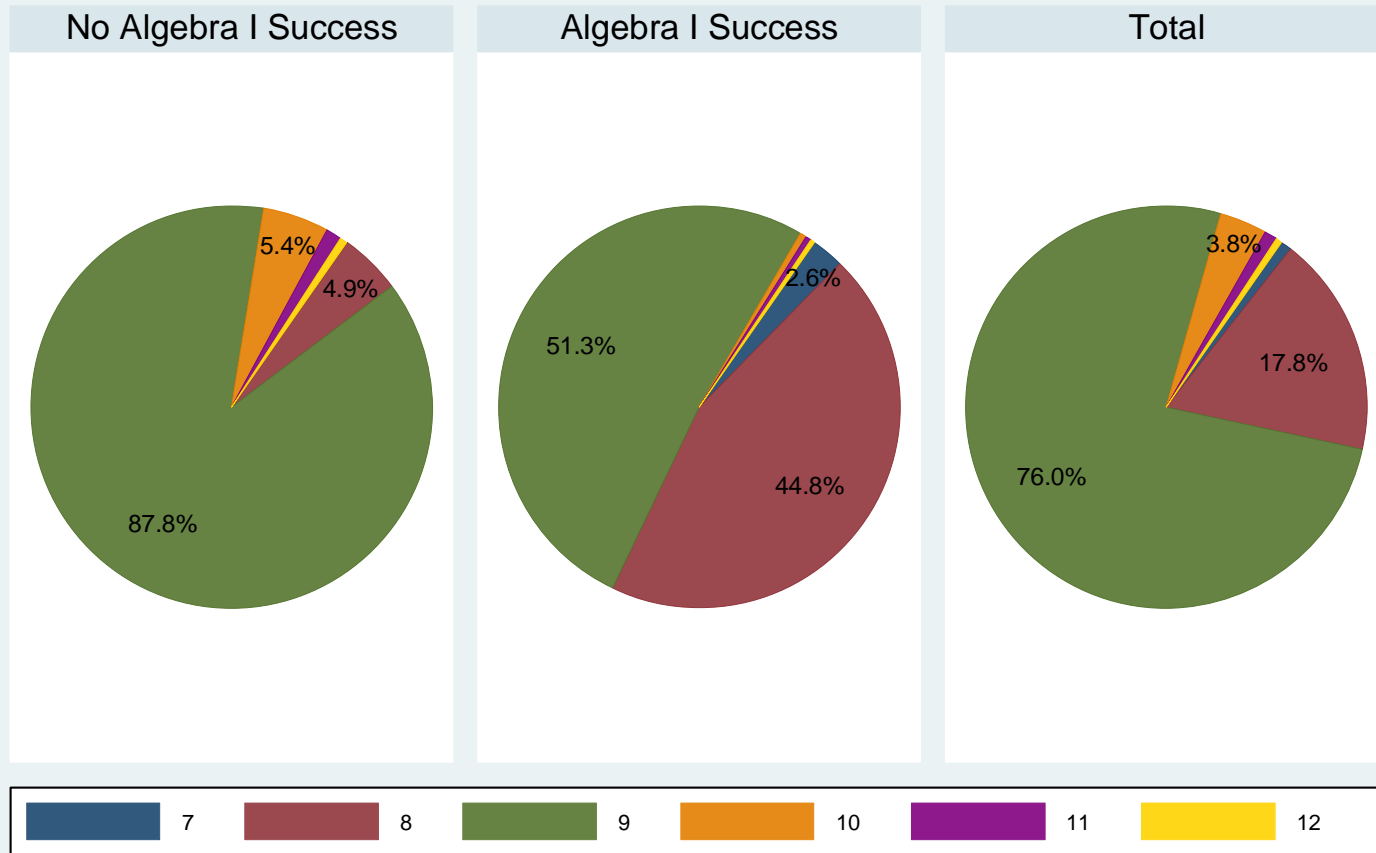
Graphs by "Algebra Success"



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Grade Level by "Algebra I Success" Classification



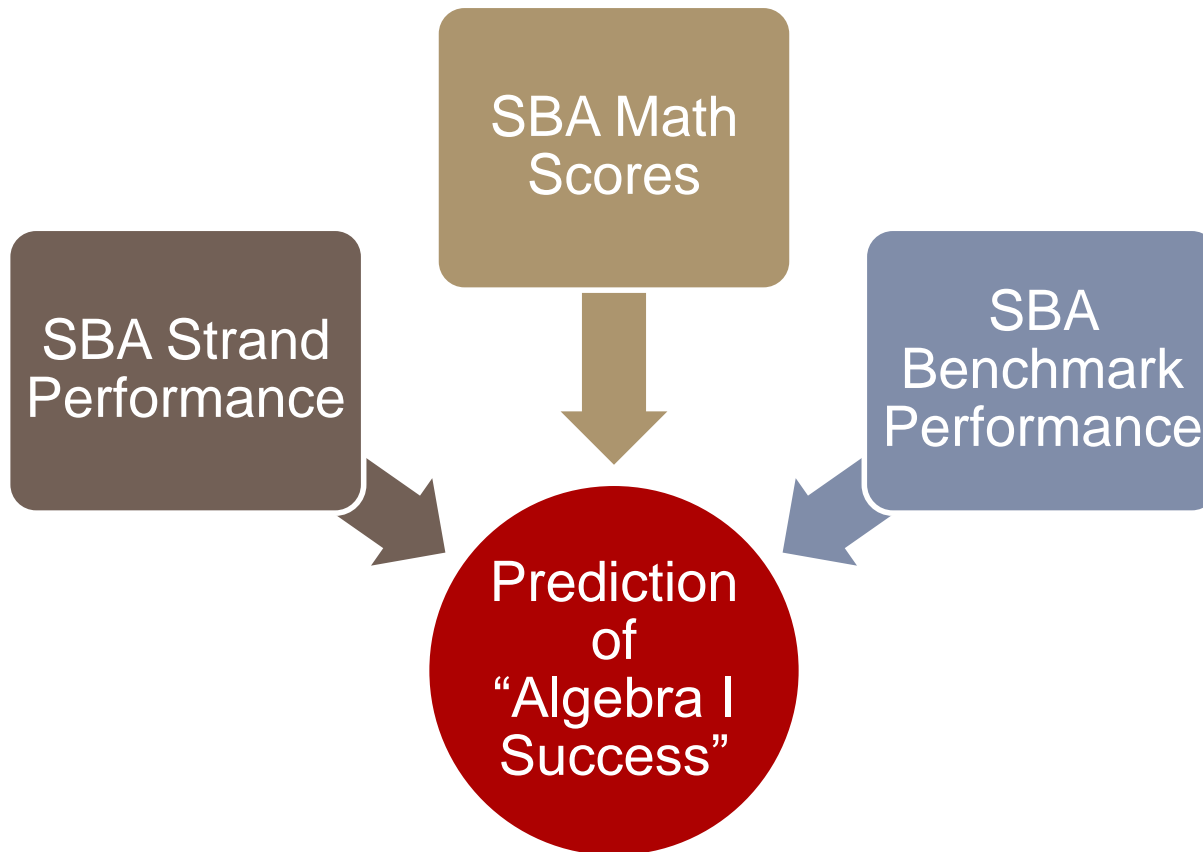
Graphs by "Algebra Success"



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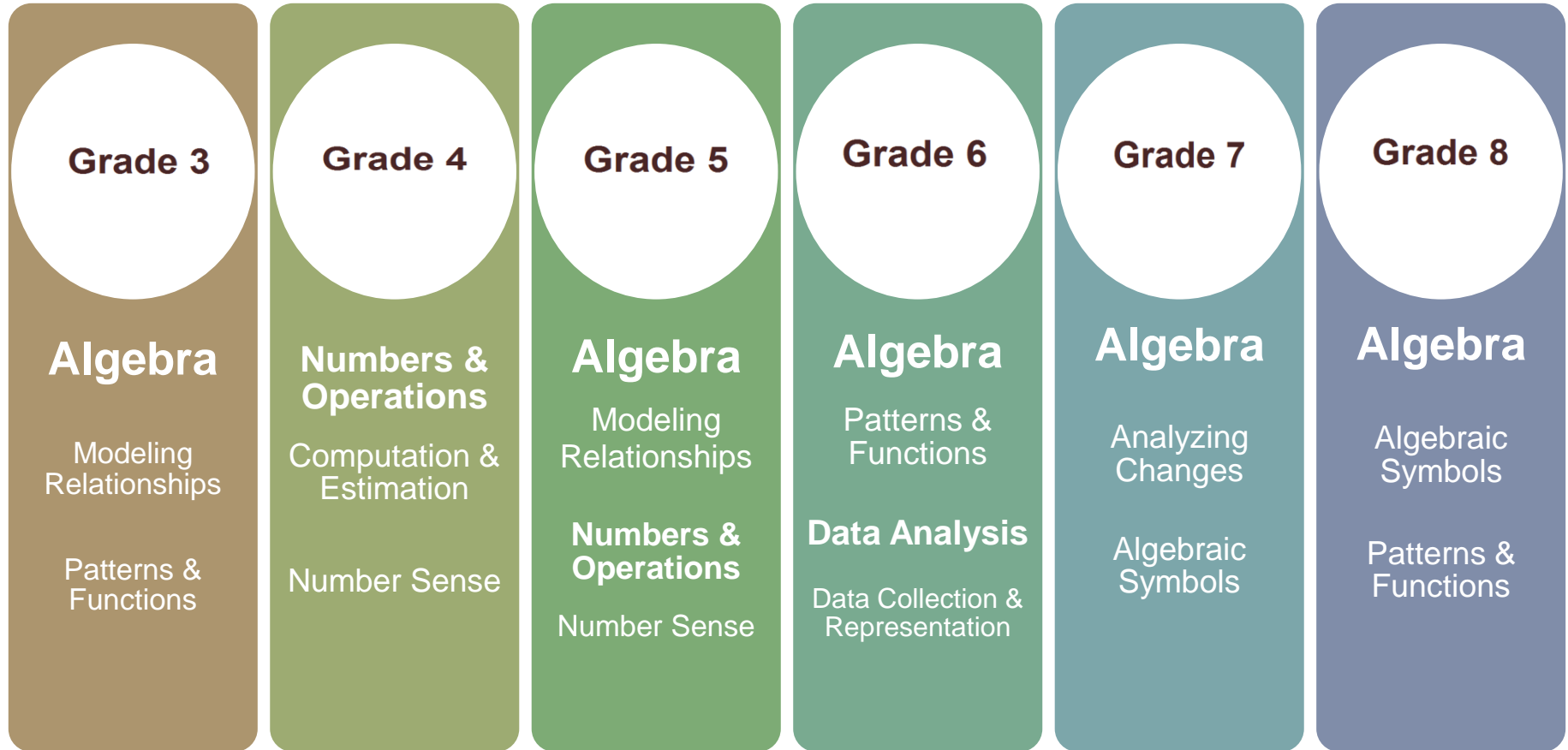
Analyzing Successful Algebra I Students



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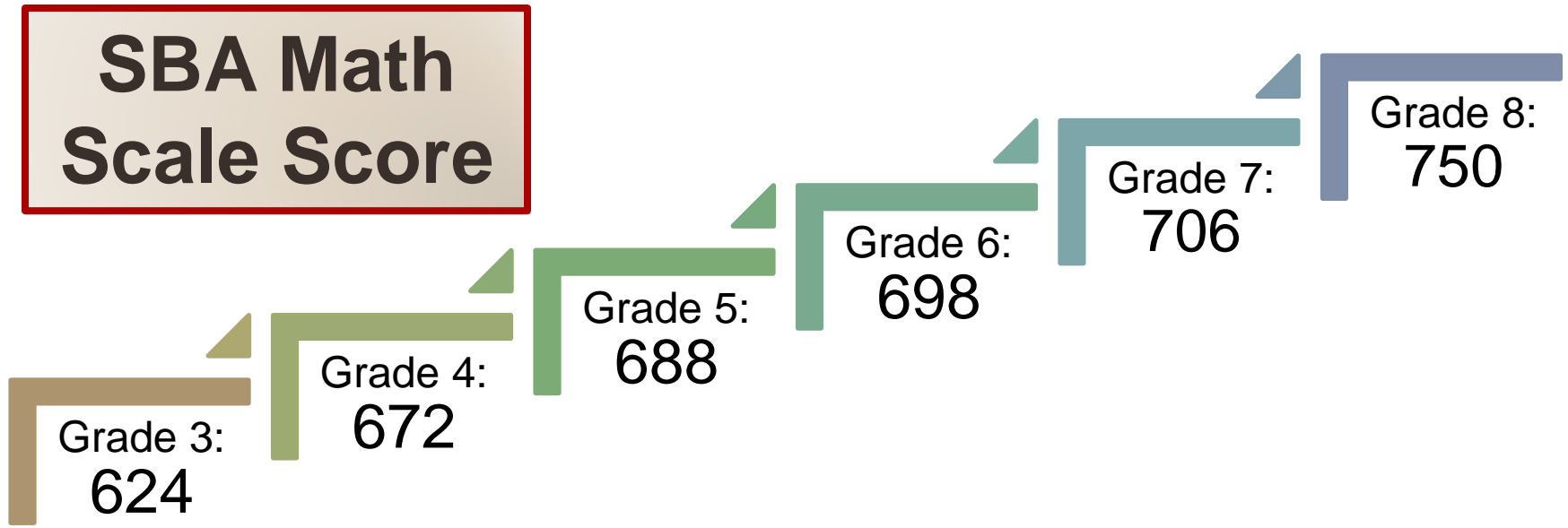
Which Standards are most Predictive of Success?



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What does it take to be an “Algebra I Success?”



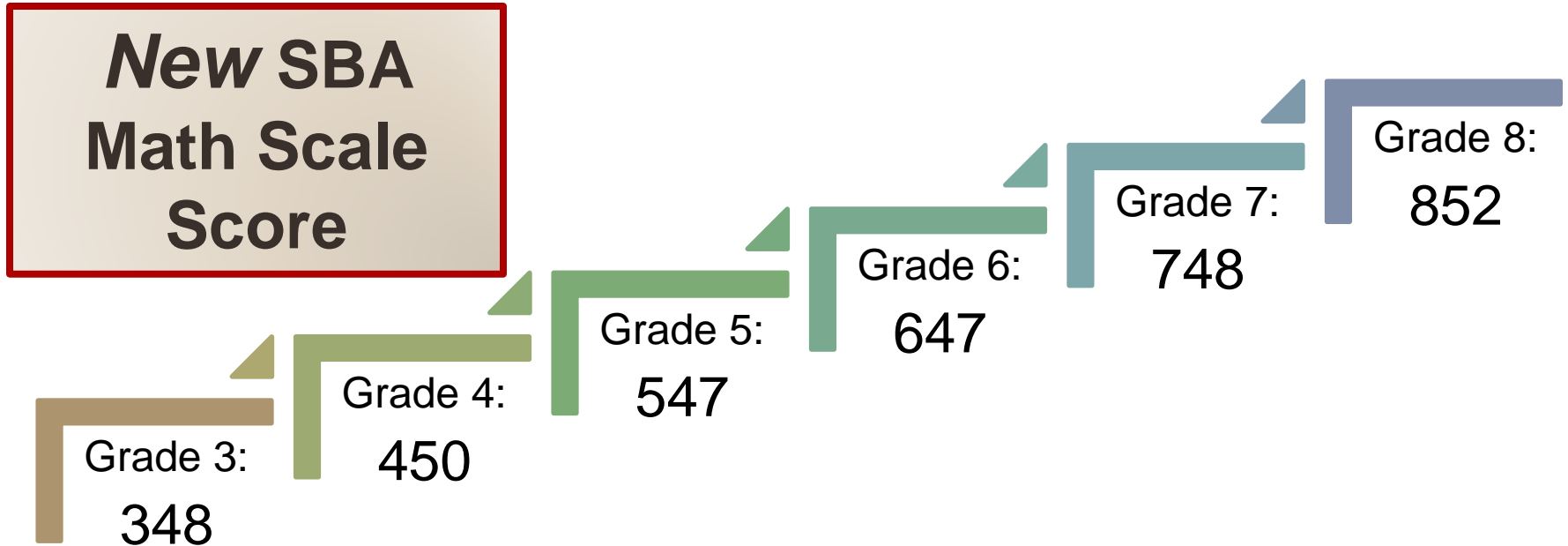
	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Proficient	611	636	658	677	693	706
Advanced	660	678	696	714	732	751



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What does it take to be an “Algebra I Success?”



	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Proficient	340	440	540	640	740	840
Advanced	357	452	551	653	753	855



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ALGEBRA I PLACEMENT

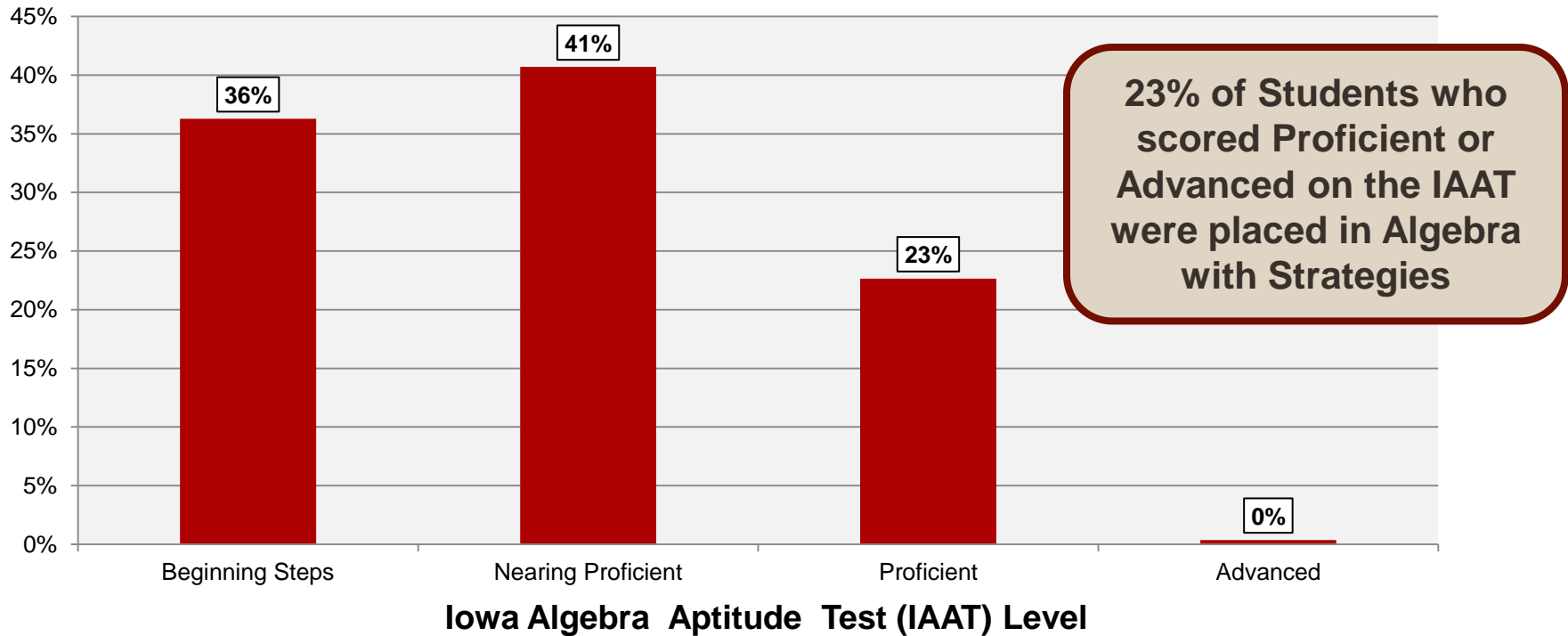
How are we placing students?



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IAAT Level of Students in Algebra with Strategies



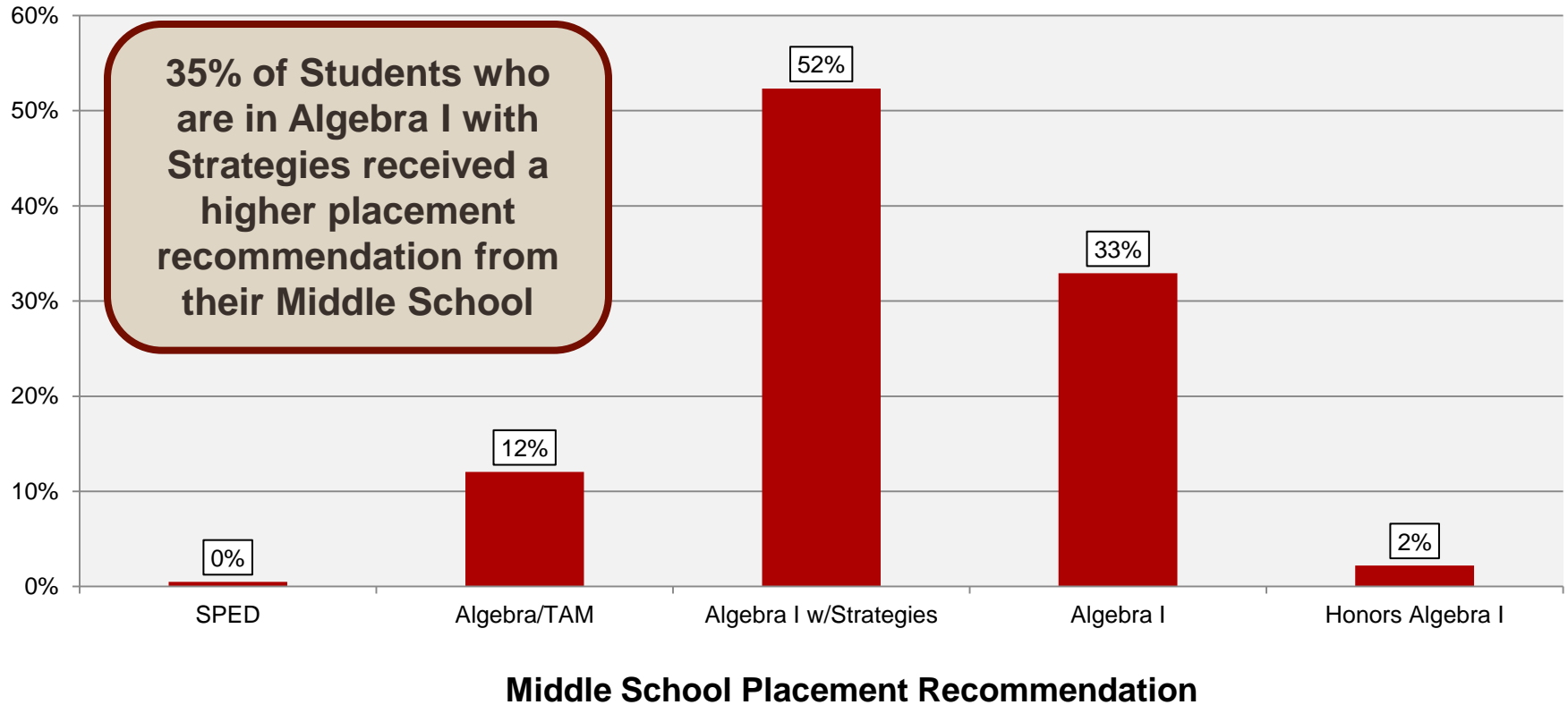
Note: N=543 Fall 2011 Algebra I with Strategies students districtwide who took the IAAT Spring of 2011.



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Students Enrolled in Algebra I with Strategies



Note: N=407 students with Middle School placement recommendations who are enrolled in Algebra I and Strategies.



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Placement of Ninth Graders

Enrolled Course	IAAT Performance Level				Total
	Below Basic	Basic	Acceptable	Advanced	
Algebra I SPED	41	25	8	0	74
Algebra I w/Strategies	174	203	114	2	493
Algebra I	396	681	1210	82	2369
Honors Algebra I	14	46	286	131	477
Geometry	6	4	36	33	79
Honors Geometry	0	1	23	62	86
Total	631	960	1677	310	3578

Note: For 3,580 first time ninth graders with Spring 2011 scores and a high school math course.



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FALL 2011 DATA

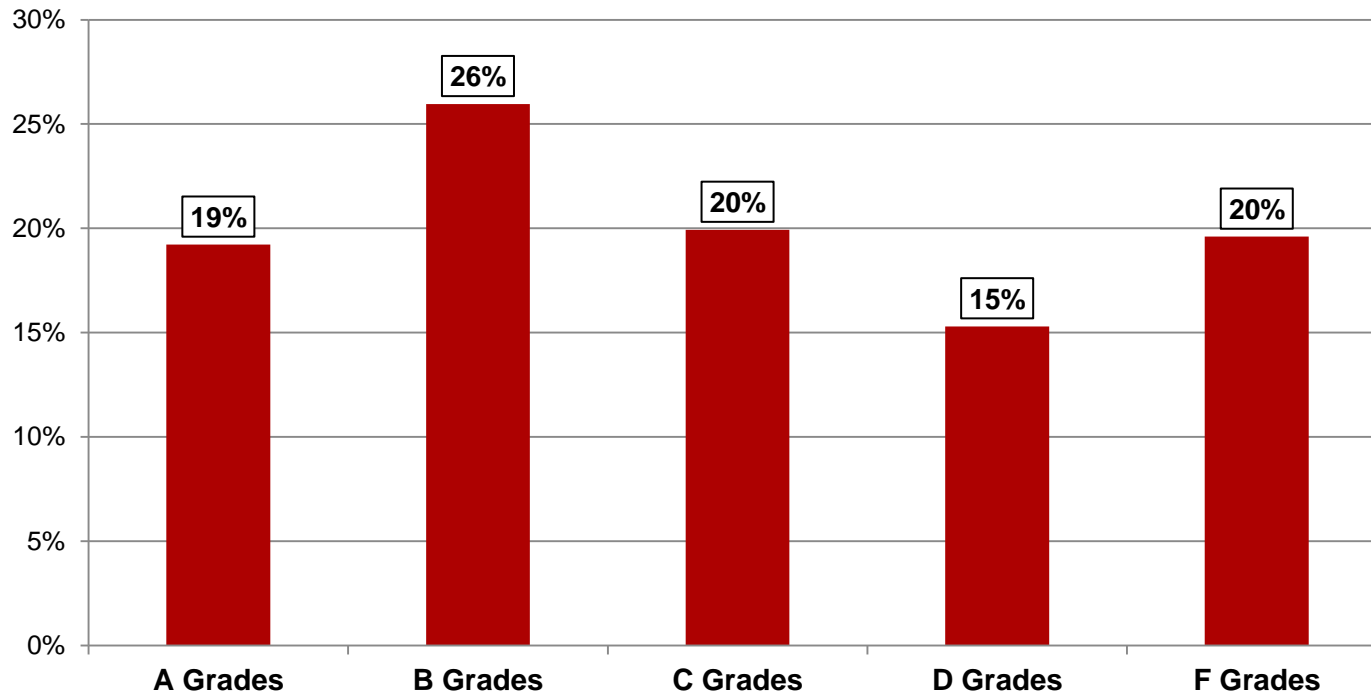
How are our students doing?



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First Time Ninth Graders Six Week Algebra I Grades



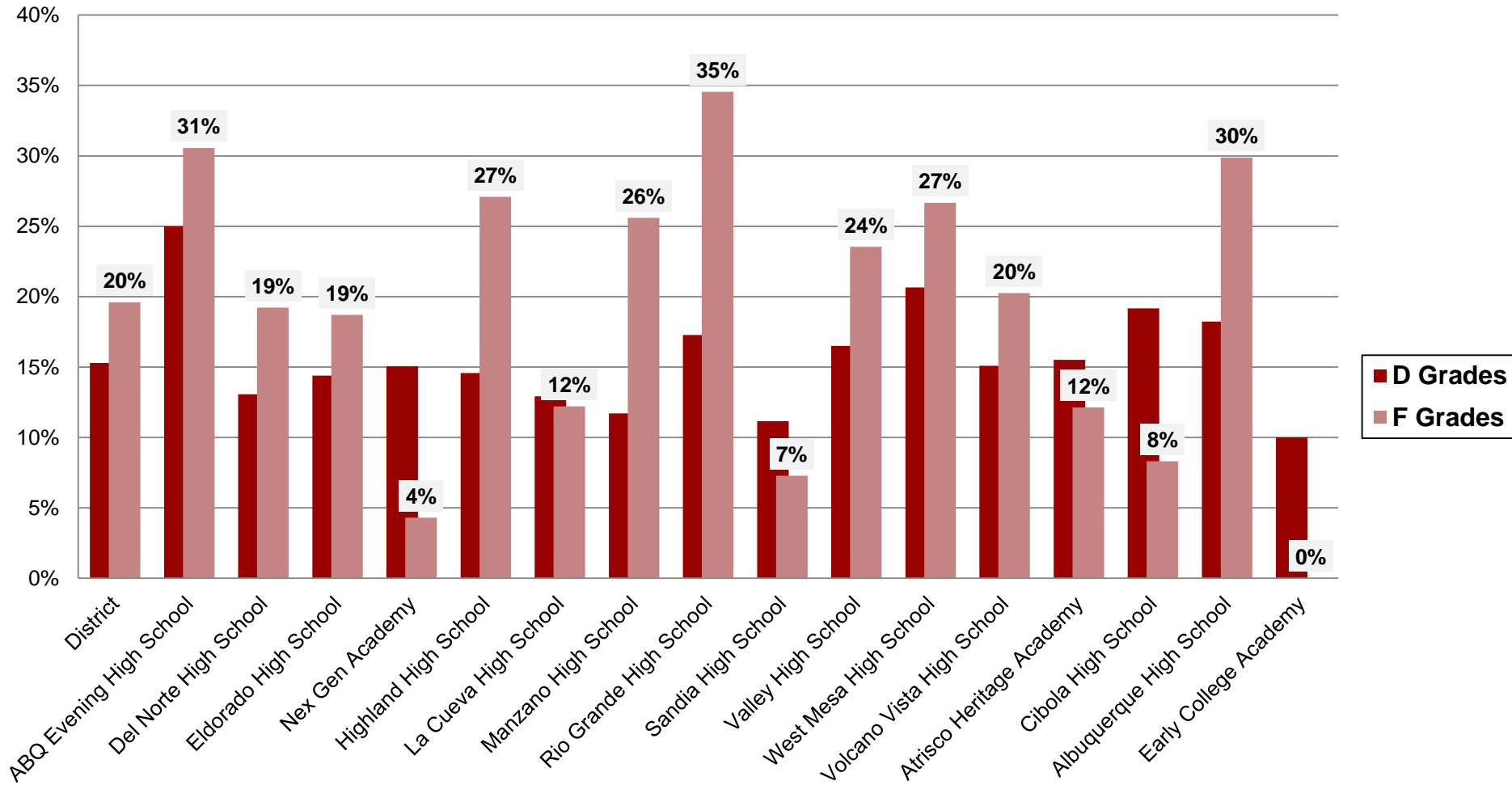
Note: N= 5,491 students with Fall 2011 six week course grades.



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Fall 2011 Ninth Grade Algebra I Six Week Course Grades



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Fall 2011 Ninth Grade Algebra I Six Week Course Grades

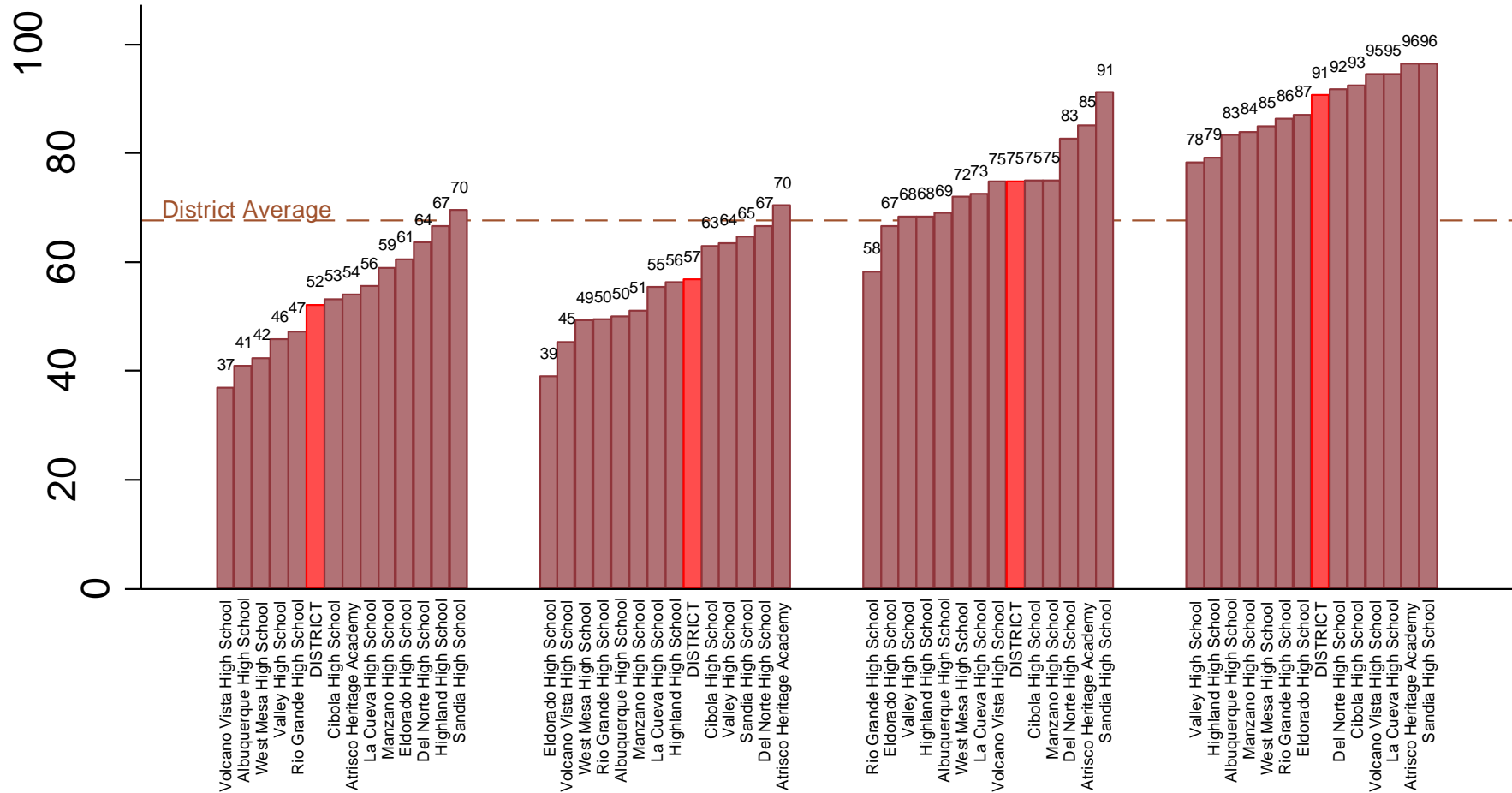
School	A	B	C	D Grades	F Grades	Total
District	19%	26%	20%	15%	20%	N=5,491
ABQ Evening High School	6%	17%	22%	25%	31%	n=36
Del Norte High School	25%	24%	18%	13%	19%	n=260
Eldorado High School	19%	29%	19%	14%	19%	n=417
Nex Gen Academy	22%	38%	22%	15%	4%	n=93
Highland High School	17%	22%	20%	15%	27%	n=384
La Cueva High School	21%	30%	24%	13%	12%	n=418
Manzano High School	18%	30%	15%	12%	26%	n=461
Rio Grande High School	11%	19%	18%	17%	35%	n=411
Sandia High School	31%	34%	16%	11%	7%	n=439
Valley High School	12%	24%	24%	17%	24%	n=327
West Mesa High School	9%	23%	21%	21%	27%	n=300
Volcano Vista High School	17%	27%	20%	15%	20%	n=563
Atrisco Heritage Academy	25%	23%	25%	16%	12%	n=503
Cibola High School	25%	30%	17%	19%	8%	n=433
Albuquerque High School	12%	18%	22%	18%	30%	n=395
Early College Academy	44%	30%	16%	10%	0%	n=50



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Distribution of 6-Week Algebra I Success By Prior Student Achievement



Bottom Quartile

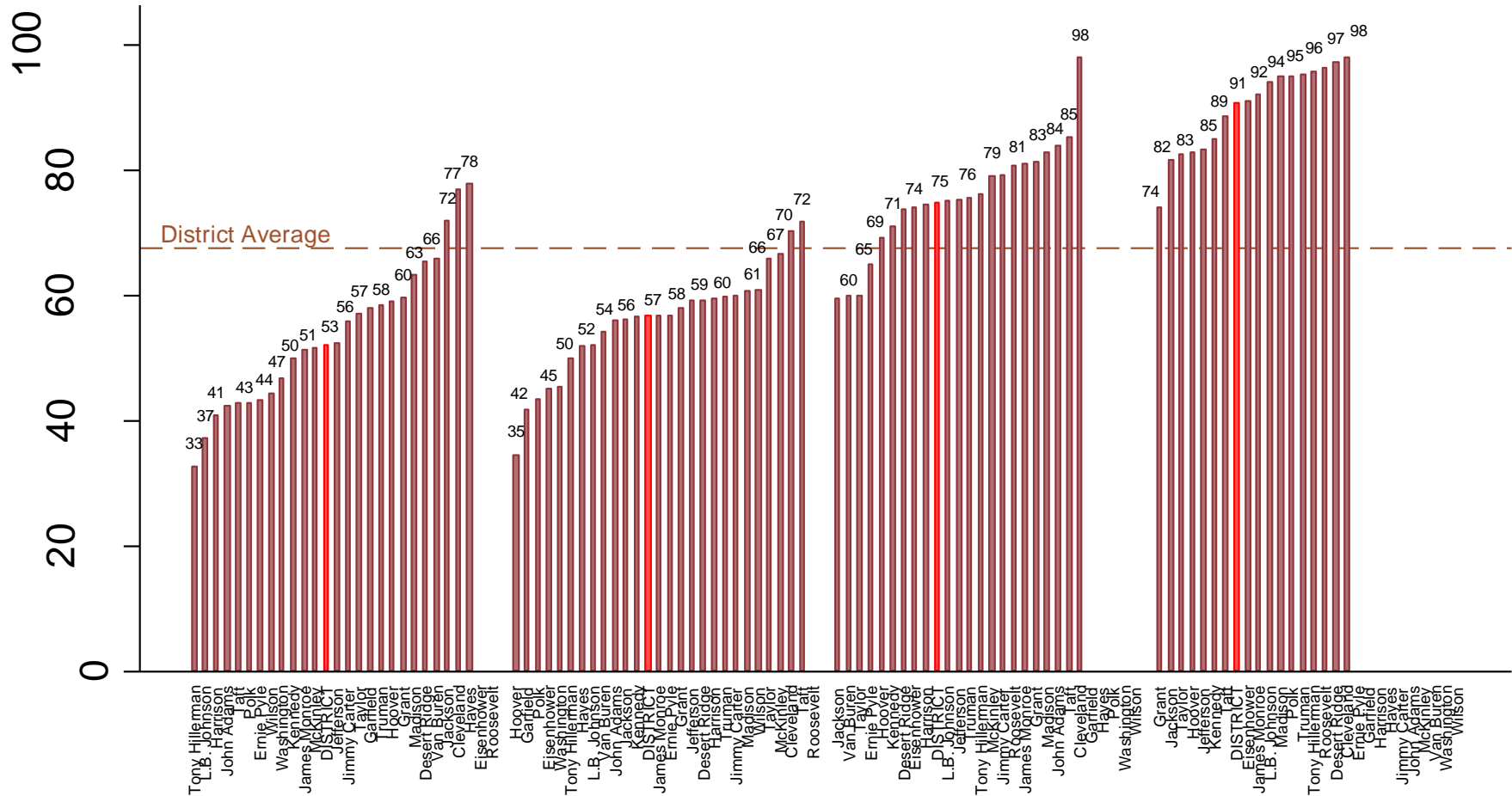
2nd Quartile

3rd Quartile

Top Quartile

Sample: 2011 APS first-time ninth graders with 8th grade math test scores.
N=4,446 Students with 6-week Algebra I Grades and 8th Grade SBA Scores.

Distribution of 6-Week Algebra I Success By Prior Student Achievement and Middle School



Bottom Quartile

2nd Quartile

3rd Quartile

Top Quartile

Sample: 2011 APS first-time ninth graders with 8th grade math test scores.
N=4,465 Students with 6-week Algebra I Grades and 8th Grade SBA Scores.

Making Sense of the Data

1. What information was surprising?
2. What implications does this data have for your work?
 - Teachers
 - Individual Schools
 - Feeders Patterns



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USING THE IOWA ALGEBRA APTITUDE TEST (IAAT) AND THE PLACEMENT TOOL

Michael Loughrey
Assessment Manager



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Performance Bands

Performance Levels	Form A Percent	Form B Percent	Forms A & B Scale Scores	Percentile Ranges
Below Basic	0 - 35.99%	0 - 32.99%	100-139	1-24
Basic	36 - 50.99%	33 - 44.99%	140-149	25-49
Acceptable	51 - 81.99%	45 - 70.99%	150-169	50-90
Advanced	82 - 100%	71 - 100%	170-200	91-99



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Time Frame for IAAT Testing

Who:	7th Graders for consideration in 8th Algebra I placement	8th Graders for 9th grade registration	9th Graders for current year placement
What:	FORM A	FORM B	FORM A or B
Call Testing by: (848-8751)	February 15	January 9	August 1
Pick up test by:	End of February	Middle of January	Middle of August
Administer Tests by:	Beginning of March	Beginning of February	First week of classes
Scan Tests by:	Middle of March	Middle of February	Second week of classes
Return Tests by:	End of March	End of February	End of August

Three important points to remember

1. Test booklets get picked up and returned to the Testing warehouse.
2. This test is normed and therefore it is timed. (*10 minutes for each of the four 15-question sections.*)
3. There is 40 minutes of testing time and 15 minutes for directions and four sample problems.

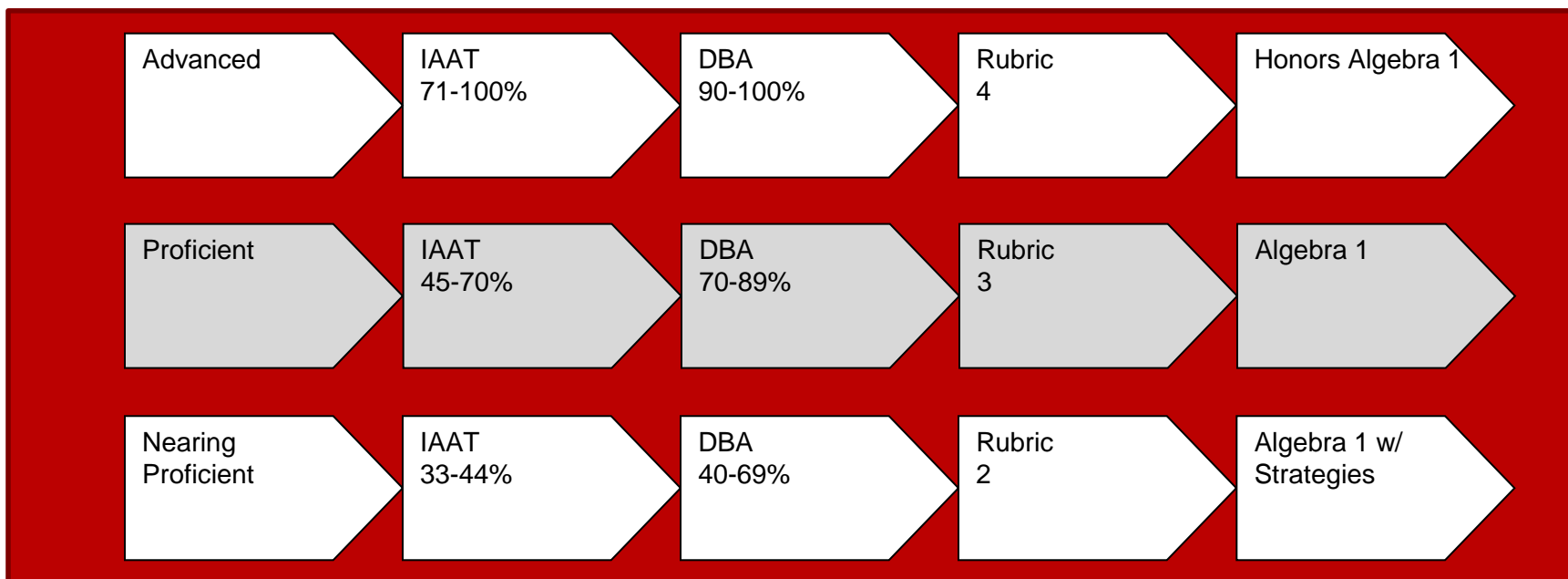


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Placement Pathways

“Strand”	IAAT Percent Score	DBA Percent Score	Rubric Score	Class Placement
Advanced	71-100%	90-100%	4	Honors Algebra I
Proficient	45-70%	70-89%	3	Algebra I
Nearing Proficient	33-44%	40-69%	2	Algebra I w/ Strategies
Beginning Steps	0-32%	0-39%	1 or 0	Algebra I w/ TAM format



Important Marking Instructions

- * Use a No. 2 pencil only.
- * Mark dark, heavy marks that fill ovals completely.
- * Erase unwanted marks cleanly.
- * Make no stray marks on this answer sheet.

CORRECT: ●

INCORRECT: ◐ ◑ ◒ ◓ ◔ ◕ ◖ ◗ ◘ ◙

Form

A	B	C	D	E	F	G	H	J	K
---	---	---	---	---	---	---	---	---	---

Period

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Teacher ID Number										Student ID Number									
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

ID fields are pre-filled.

PART 1 (Time: 10 minutes)

1	A B C D	4	J K L M	7	A B C D	10	J K L M	13	A B C D
2	J K L M	5	A B C D	8	J K L M	11	A B C D	14	J K L M
3	A B C D	6	J K L M	9	A B C D	12	J K L M	15	A B C D

PART 2 (Time: 10 minutes)

1	A B C D	4	J K L M	7	A B C D	10	J K L M	13	A B C D
2	J K L M	5	A B C D	8	J K L M	11	A B C D	14	J K L M
3	A B C D	6	J K L M	9	A B C D	12	J K L M	15	A B C D

PART 3 (Time: 10 minutes)

1	A B C D	4	J K L M	7	A B C D	10	J K L M	13	A B C D
2	J K L M	5	A B C D	8	J K L M	11	A B C D	14	J K L M
3	A B C D	6	J K L M	9	A B C D	12	J K L M	15	A B C D

PART 4 (Time: 10 minutes)

Algebra Placement Tool

Enter data for 2010-2011 IAAT Data

When you jump to another page, any changes you have made will be saved automatically.

Field values greater than the field's max value will be replaced with the max value. To see the max value hover over the field name.

If you are entering a lot of data, make sure to click "Save" periodically. We recommend saving your work every 15 minutes to prevent DataDirector's security system from thinking your session is finished and logging you out.

Displaying 1 - 30 of 607 students

	Locked	Classwork	Returns Homework	Attitude/Independence	Attendance	Use operations (+, -, x, /, including fractions, decimals, and percents) to solve real world problems.	Use graphs, tables, and algebraic representations to solve problems.	Current class grade/score	Placement Recommendations	Comments



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Questions about the Placement Tool for Small Group Discussions.

- Has it been useful to high schools for placing students?
- Are there any of the indicators that are not useful?
- Has it been easy for 8th grade teachers to fill out?
- Are there any indicators that you feel are less useful?



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IAAT SCORES AND SIX WEEK GRADES

By the different Algebra courses



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IAAT Performance Level by 6-Week Grade for Algebra Courses

District				6 Wk Grade		Total
				No success (D, F)	Success (A, B, C)	
Algebra I	Iowa Score Band	Below Basic 100 -39	Count	212	136	348
			%	60.9%	39.1%	100.0%
		Basic 140 -149	Count	320	343	663
			%	48.3%	51.7%	100.0%
		Acceptable 150 -169	Count	325	869	1194
			%	27.2%	72.8%	100.0%
		Advanced 170 - 200	Count	15	68	83
			%	18.1%	81.9%	100.0%
	Total	Count	872	1416	2288	
		%	38.1%	61.9%	100.0%	



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Iowa Score Band	Below Basic 100 -139	Count	360	268	628
		%	57.3%	42.7%	100.0%
	Basic 140 -149	Count	435	535	970
		%	44.8%	55.2%	100.0%
	Acceptable 150 -169	Count	419	1203	1622
		%	25.8%	74.2%	100.0%
	Advanced 170 - 200	Count	26	193	219
		%	11.9%	88.1%	100.0%
	Total	Count	1240	2199	3439
		%	36.1%	63.9%	100.0%



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Algebra I	Iowa Score Band	Below Basic 100 -139	Count	212	136	348	
			%	60.9%	39.1%	100.0%	
		Basic 140 -149	Count	320	343	663	
			%	48.3%	51.7%	100.0%	
		Acceptable 150 -169	Count	325	869	1194	
			%	27.2%	72.8%	100.0%	
		Advanced 170 - 200	Count	15	68	83	
			%	18.1%	81.9%	100.0%	
	Total			Count	872	1416	2288
				%	38.1%	61.9%	100.0%
Algebra I with Strategies	Iowa Score Band	Below Basic 100 -139	Count	100	75	175	
			%	57.1%	42.9%	100.0%	
		Basic 140 -149	Count	89	114	203	
			%	43.8%	56.2%	100.0%	
		Acceptable 150 -169	Count	29	83	112	
			%	25.9%	74.1%	100.0%	
		Advanced 170 - 200	Count	0	2	2	
			%	.0%	100.0%	100.0%	
	Total			Count	218	274	492
				%	44.3%	55.7%	100.0%

Algebra I SpEd	Iowa Score Band	Below Basic 100 -139	Count	11	30	41	
			%	26.8%	73.2%	100.0%	
		Basic 140 -149	Count	3	23	26	
			%	11.5%	88.5%	100.0%	
		Acceptable 150 - 169	Count	3	6	9	
			%	33.3%	66.7%	100.0%	
	Total			Count	17	59	76
				%	22.4%	77.6%	100.0%
Algebra I Bil	Iowa Score Band	Below Basic 100 -139	Count	32	18	50	
			%	64.0%	36.0%	100.0%	
		Basic 140 -149	Count	10	22	32	
			%	31.3%	68.8%	100.0%	
		Acceptable 150 - 169	Count	5	21	26	
			%	19.2%	80.8%	100.0%	
	Total			Count	47	61	108
				%	43.5%	56.5%	100.0%

Algebra I Honors

Iowa Score Band	Below Basic 100 -139	Count	5	9	14
		%	35.7%	64.3%	100.0%
	Basic 140 -149	Count	13	33	46
		%	28.3%	71.7%	100.0%
	Acceptable 150 -169	Count	57	224	281
		%	20.3%	79.7%	100.0%
	Advanced 170 - 200	Count	11	123	134
		%	8.2%	91.8%	100.0%
	Total	Count	86	389	475
		%	18.1%	81.9%	100.0%



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Remember, the IAAT is an aptitude test, not an achievement test.

The four areas tested are:

1. Computational skills
2. Interpreting graphs and mathematical information
3. Representing numerical relationships
4. Understanding some algebraic symbols



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