MATH TASK FORCE

CLEARING THE PATHWAYS TO SUCCESS

Jennifer Bloch
Director of Math

May 2016

MATH TASK FORCE

CLEARING THE PATHWAYS TO SUCCESS

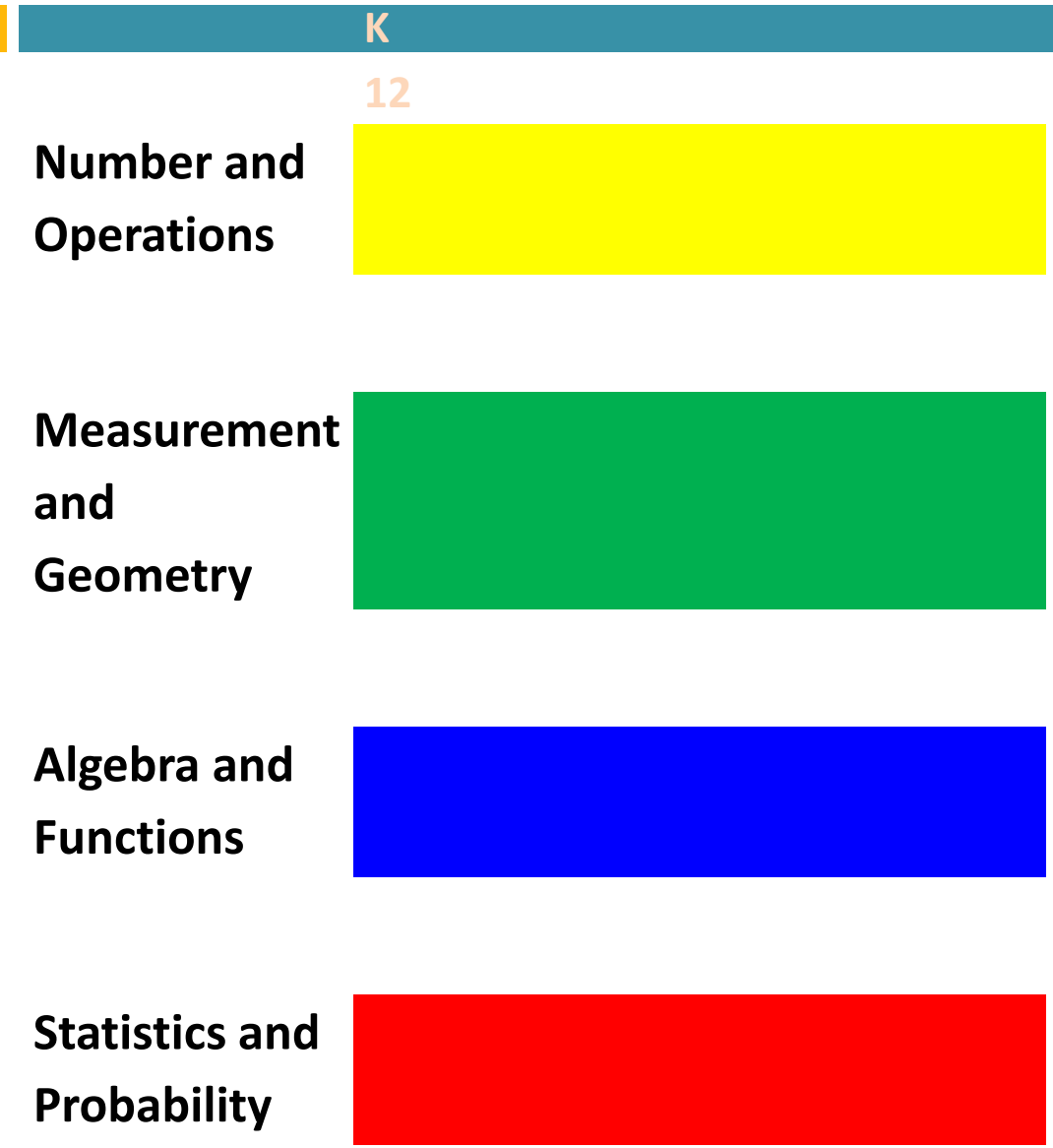
Jennifer Bloch
Director of Math

May 2016

Agenda

- Background
- Research
- Recommendations
- Proposal
- Next Steps

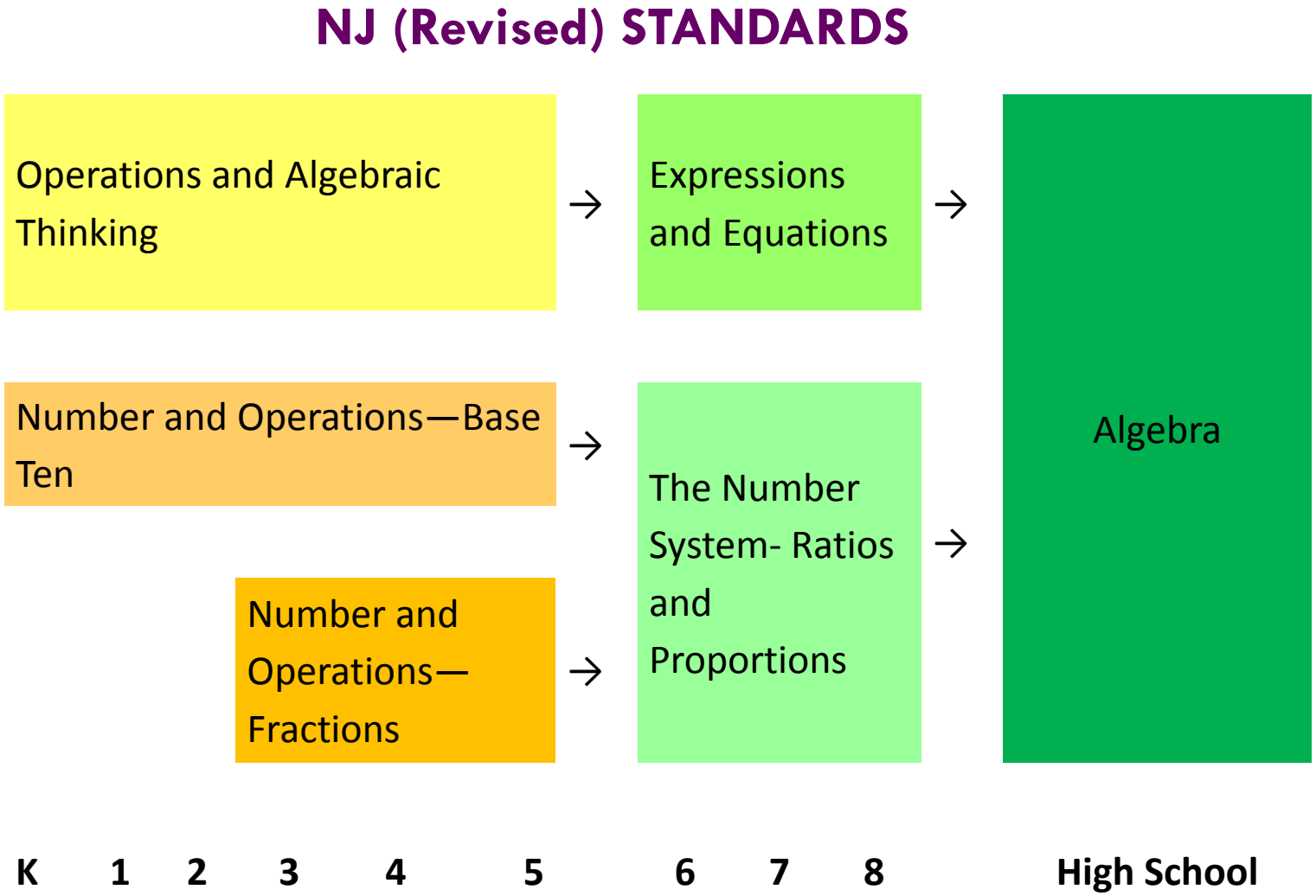
SHIFT IN STANDARDS: Old



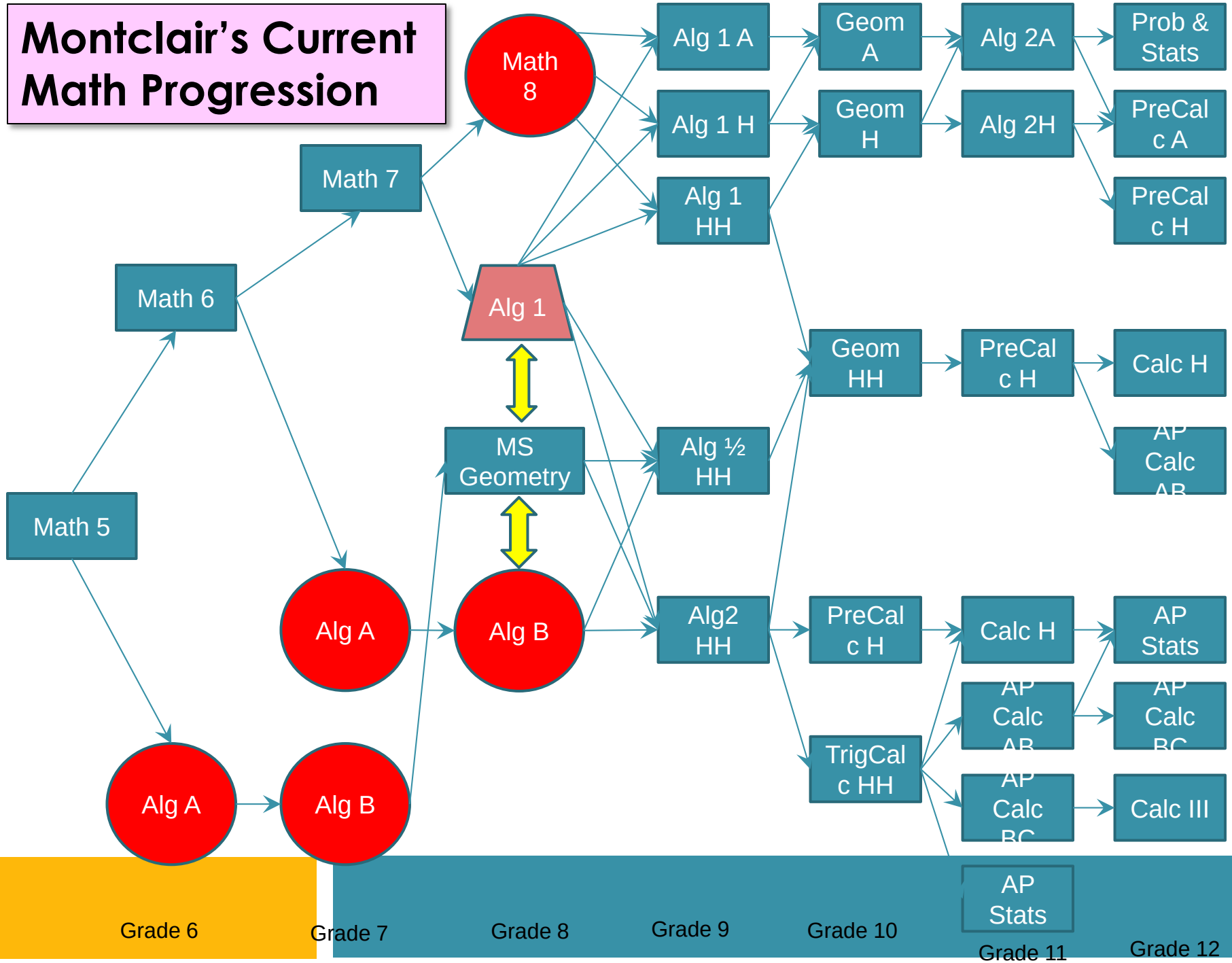
NJ CORE CURRICULUM CONTENT STANDARDS:

Spiral approach of covering all 4 topics in math for K-12

SHIFT IN STANDARDS: New



Montclair's Current Math Progression



Areas of Concern

Students who do not take middle school Algebra cannot get into Calculus or higher by 12th grade.

Students who take Algebra I/II must take Geometry in year 2 of the course, even if taken in MS.

Little difference between academic and honor levels in MHS.

2009-2014 ASK MATH Proficient - District

(note: by # of valid scores)

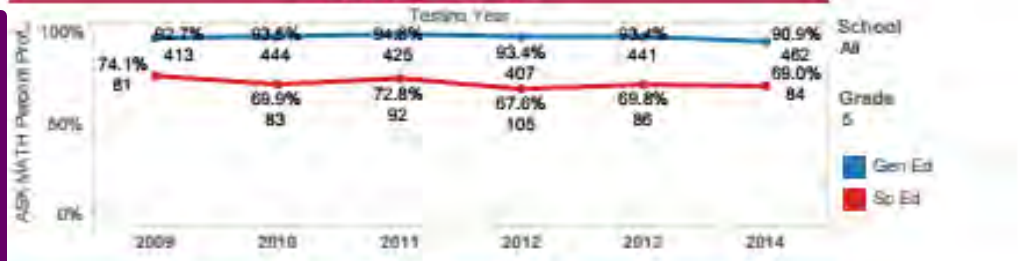
Year after year, on average 90% of 5th graders are performing at proficient levels.

Yet, an achievement gap exists:

25% of Black & Hispanic
3% of White and Asian
Enter 6th grade partially proficient in math

MATH by GROUPS:

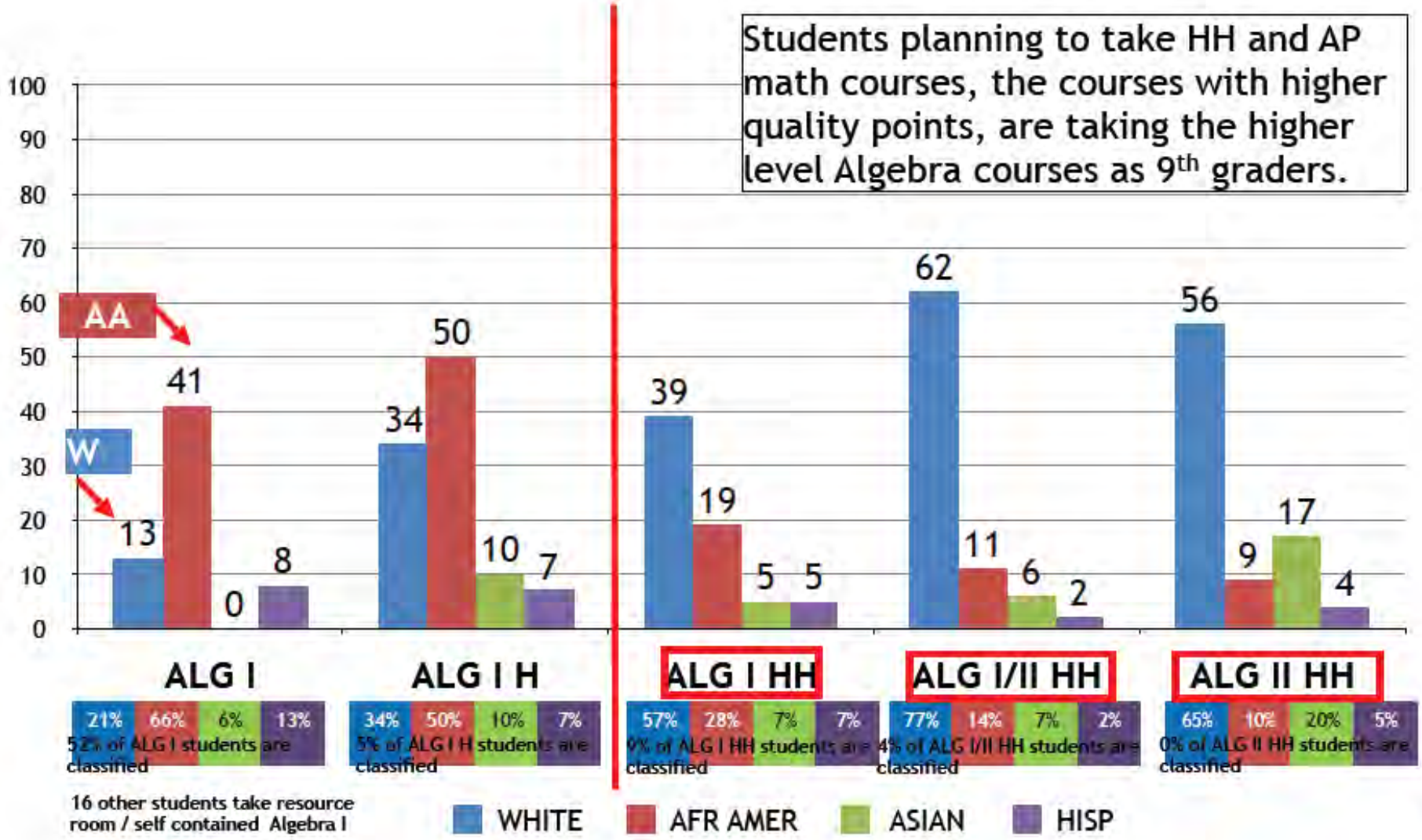
GEN ED v SP ED



NON EC DIS v EC DIS

RACE / ETHNICITY

Class Distribution for 2014-2015: 9th Grade Math Courses



Why create the taskforce?

- Recent changes in state standards in math
- Areas of concern with current pathways and placement process for students
- Lack of progress in closing the achievement gap in math

Goals of the Taskforce

Goal 1: Course Programming

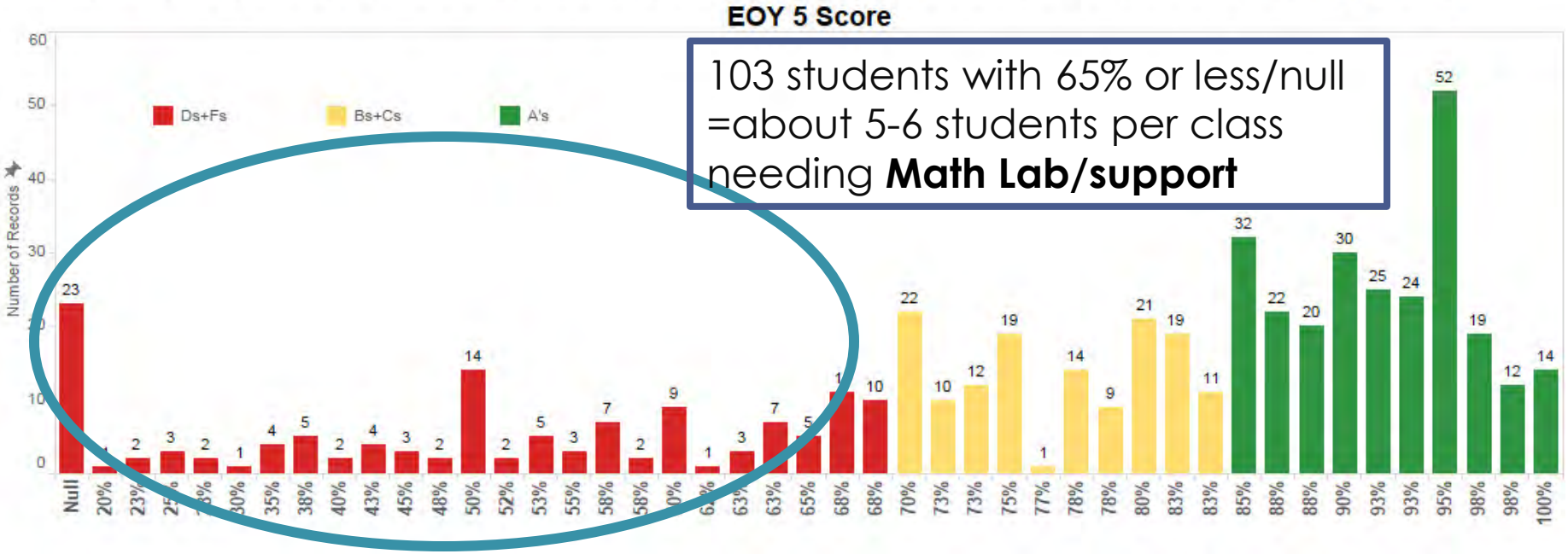
- Research and make recommendations for course offerings and sequencing for grades 6th through 12th while promoting achievement for all

Goal 2: Placement Process

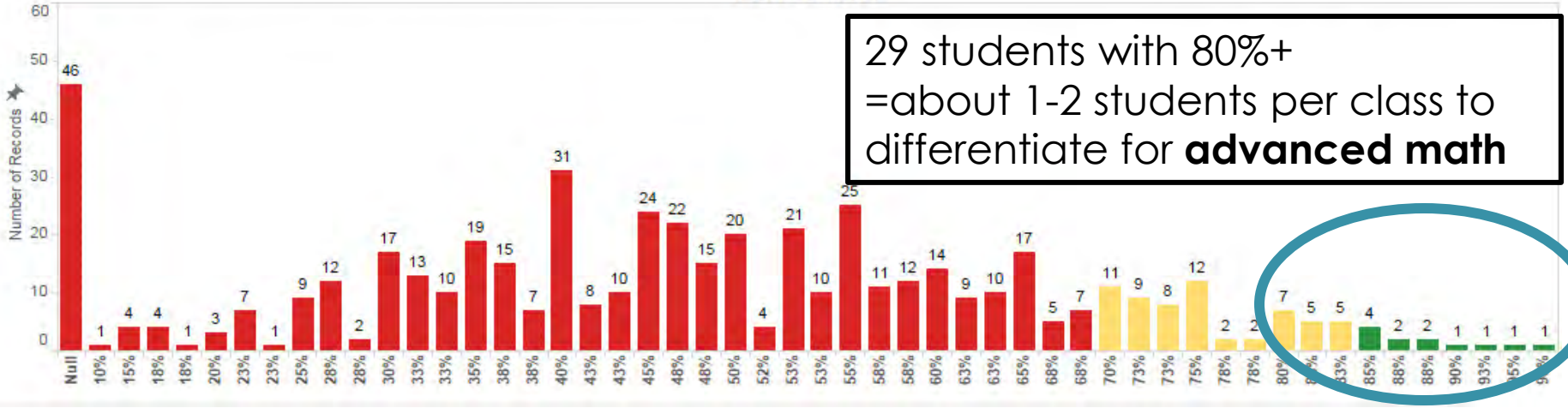
- Research and create a better placement process for Algebra that is more efficient and effective than our current placement process

2014-2015 Gr5 Students' Gr5EOY / Gr6EOY Test Results

Number of 2014-2015 5th Grade Students scoring at each relative Grading Level



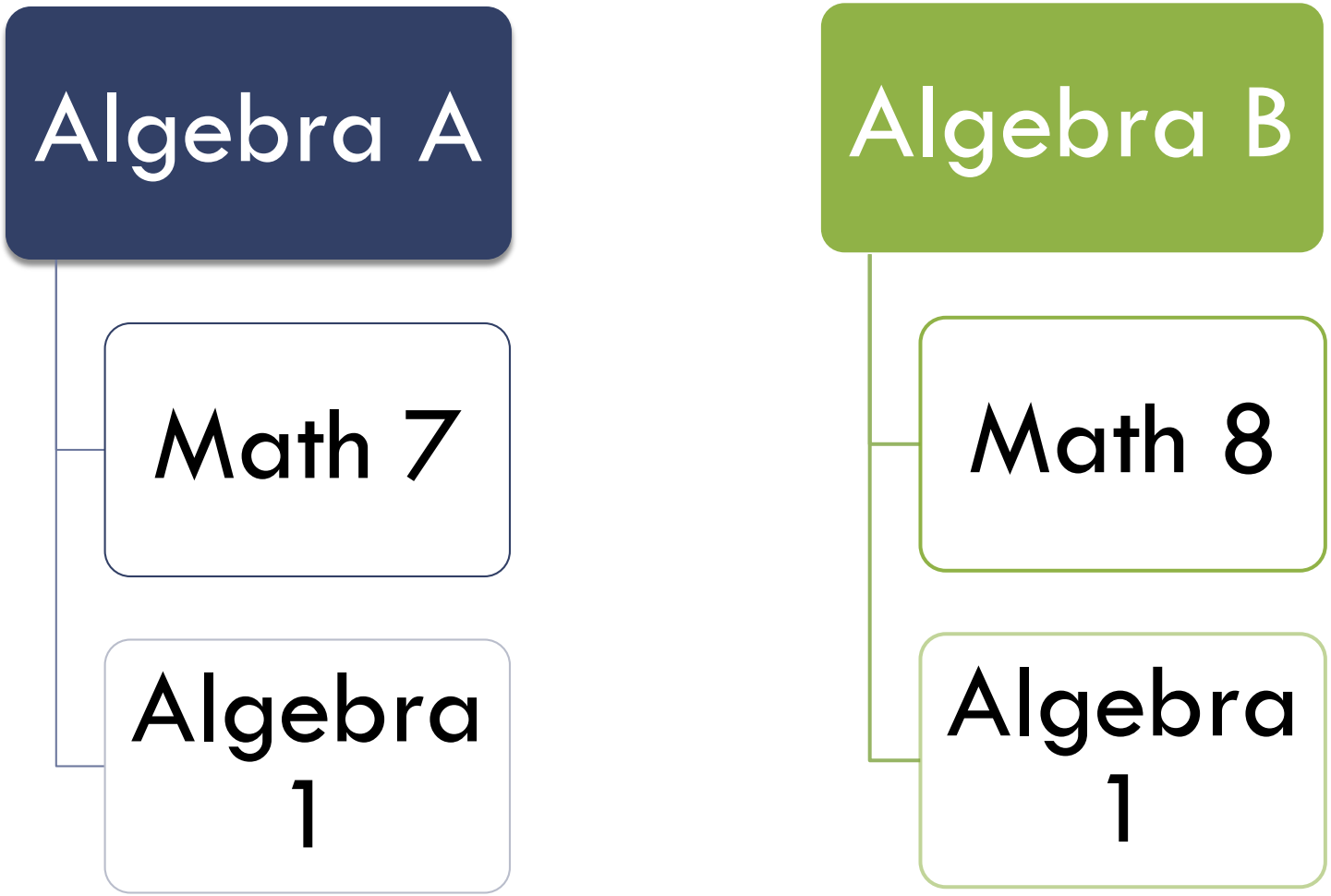
Number of 2014-2015 5th Grade Students scoring at each relative Grading Level



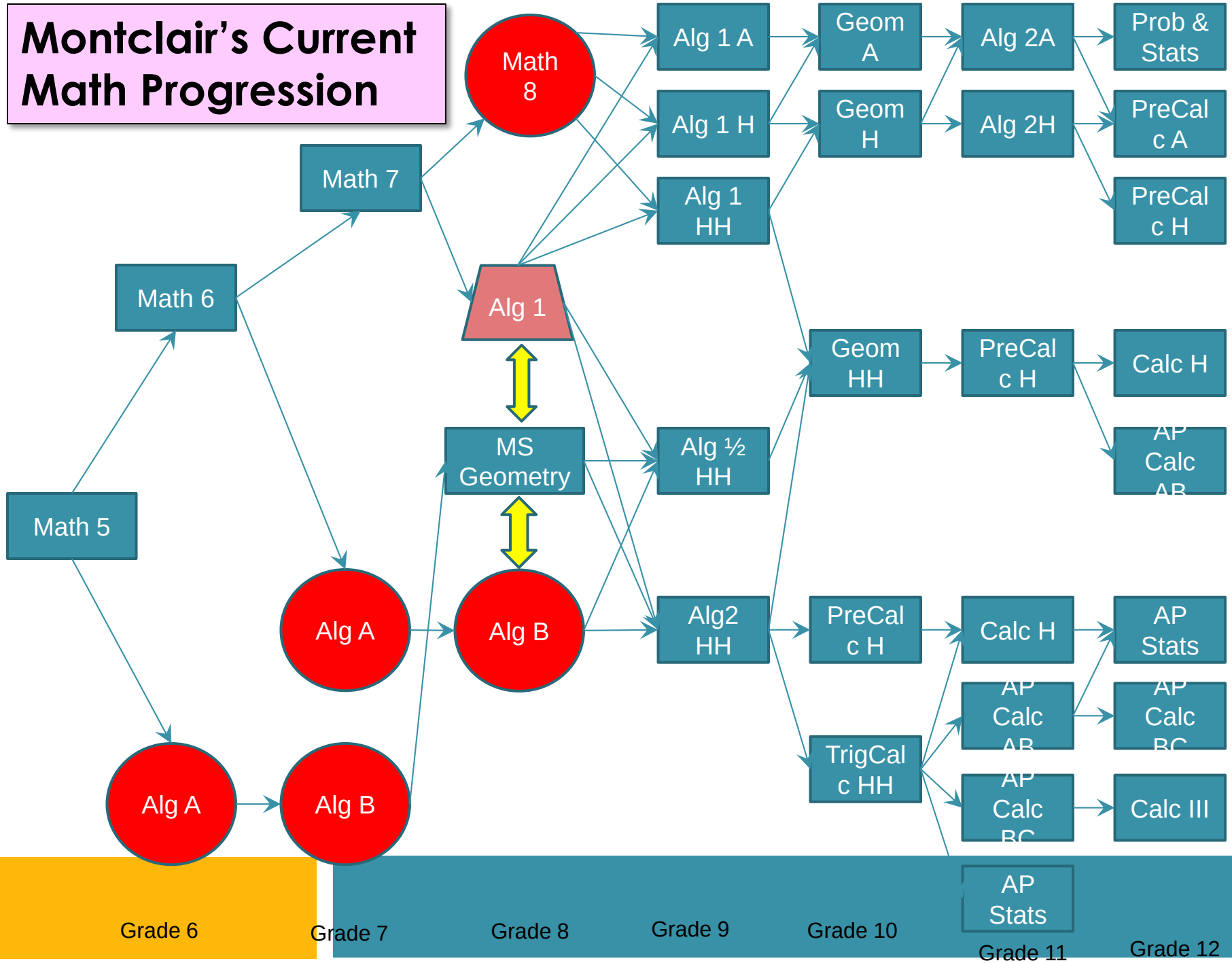
MS-HS Recommendations

Problem	Recommendation
Math Labs are currently offered in Grades 6-8 for students who need additional support without clear curricula and resources	Curricula and resources developed for Math Labs Develop Math Lab or support class for Grade 9 students

What is Algebra A/B?



Montclair's Current Math Progression



Designing High School Mathematics Courses

NJ revised Standards Mathematics Appendix A:

MODEL COURSE PATHWAY #3

A "compacted" version of the Traditional pathway where no content is omitted, in which students would complete:

- *The content of 7th grade, 8th grade, and the High School Algebra I course in grades 7 and 8, which will enable them to reach Calculus or other college level courses by their senior year.*

8th Grade Algebra Data 2015

Two Year Algebra I (A/B)

- 13% (17/130)of students that took Algebra B in 8th grade repeated Algebra 1 one-year course in 9th grade

One Year Algebra

- 57% (47/83) of 8th graders that took Algebra 8 repeated Algebra 1 one-year course in 9th grade

MS to HS Recommendations

Problem

- Algebra I:
  - Advance students: 2 years
  - All others: 1 year
- Majority of students who took a 1 year course in MS repeated it in HS.

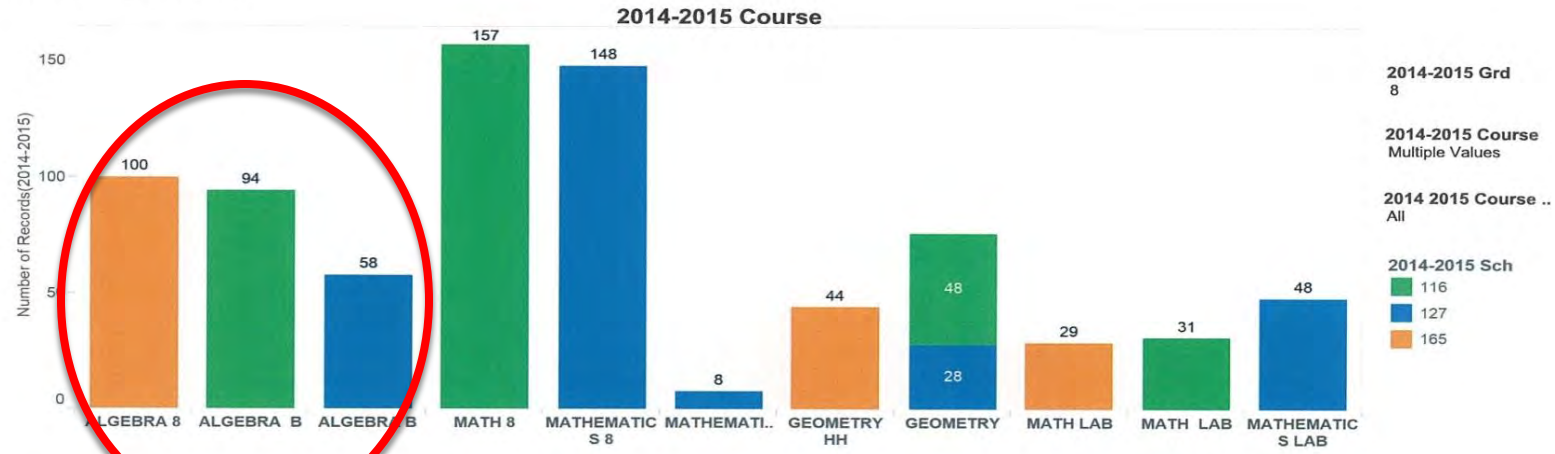
Recommendation

- Algebra A/B for ALL 7th and 8th graders
  - Accelerated Algebra A/B offered

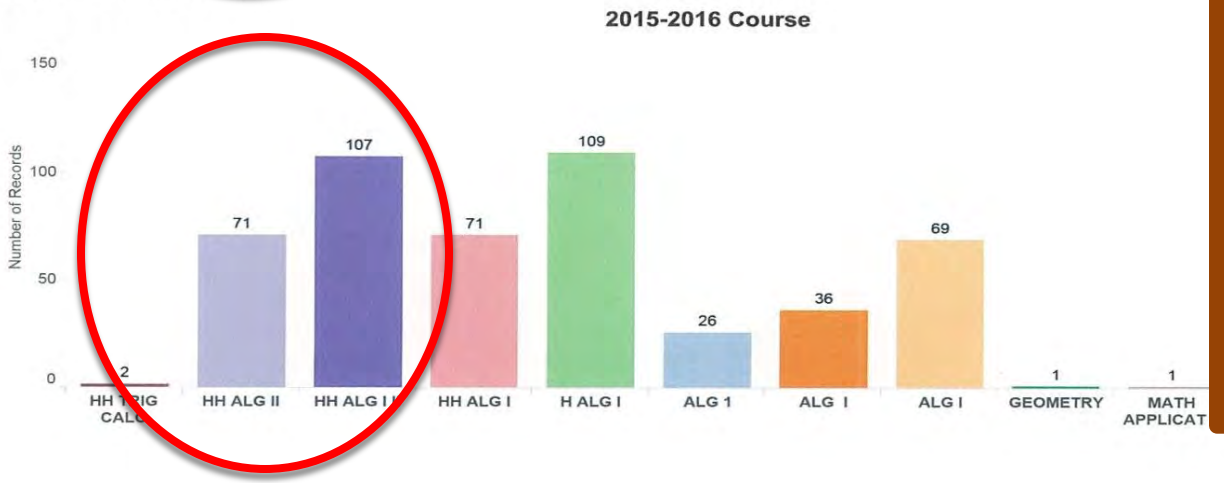
High School Placement Data

From Gr8 Math to Gr9 Math

MS COURSES



MHS COURSES



252 8th graders took algebra in 2014-15

28% took Alg2 HH in 9th grade (2015-16)

42% took Alg I/II

What is Algebra I/II ?

- 3 semester Algebra 2 course offered in 9th grade -10th grade
- In year 2, students are required to take Geometry simultaneously (for the first semester)
- Algebra I/II is the only option below Algebra 2 High Honors

High School Placement Data

Geometry in MHS

- 496 Total students were enrolled this year
- 65 dropped (13% of the total enrollment)
- 46% who took MS Geo in 8th grade repeated in 10th grade this year compared to 33% 3 years ago

High School Placement Data

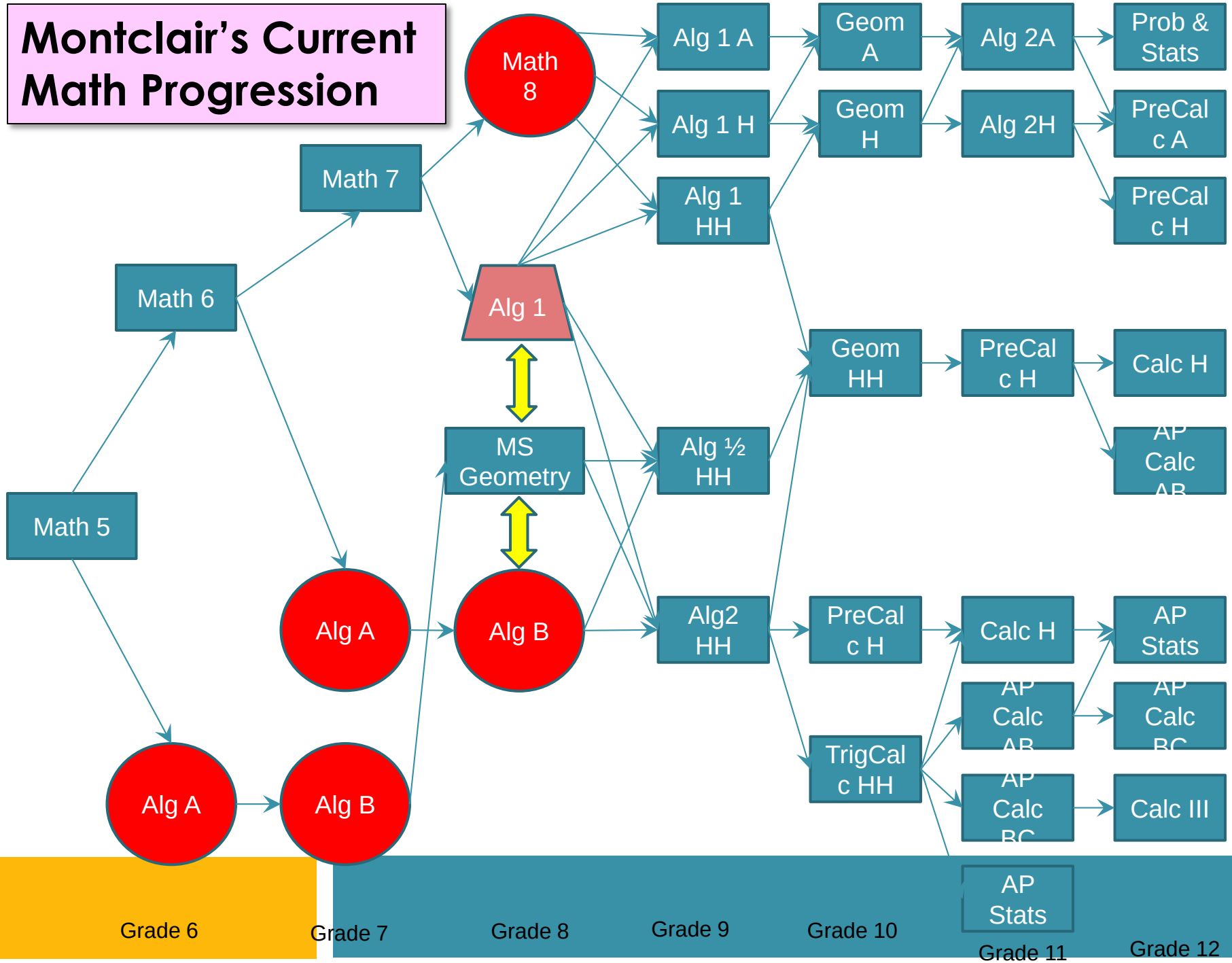
ALG I/II HH

- 137 Total students were enrolled this year
- 39 dropped to Algebra 1(28% of the total enrollment)

ALG II HH

- 116 Total students were enrolled this year
- 28 dropped to Algebra I/II (24% of the total enrollment)
- 2 dropped to Algebra 1 HH

Montclair's Current Math Progression



HS Recommendations

Problem

- HS Math Courses:
  - Too many levels
  - Little variation between levels
  - Lacking clear recommendation criteria

Recommendation

- Create fewer levels
- Modify recommendation system
- Revise curriculum to reflect course level changes

HS Recommendations

Problem

- Algebra I/II students who need to drop down are forced to repeat Algebra 1
- Algebra I/II students are required to double with Geometry in 10th grade

Recommendation

- Replace Algebra I/II course with one-year
  - Algebra II
  - Algebra II Honors
- No requirement to double with Geometry

MS-HS Recommendations

Problem

- Low minority representation in AP math courses
- 25% of class of 2015 took Calculus or higher

Recommendation

- Provide multiple entry points for high level math courses
- Offer the opportunity for students to double up in math courses to advance either in MS or HS

MS-HS Recommendations

Problem

- Placement process needs refining so there are fewer add/drops and repeating of courses

Recommendation

- Revised placement criteria for all levels:
  - District Placement Exam
  - Building Final Exam Scores
  - Math GPA
  - Teacher Recommendation Rubric

Recommended Progression

Middle School Math Course Sequence

Grade 6	Grade 7	Grade 8
Algebra A Accelerated	Algebra B Accelerated	Geometry
*Math 6	Algebra A Accelerated	Algebra B Accelerated Option w/ Geo)
	*Algebra A	*Algebra B

*With Math Lab as needed

High School Math Course Sequence

Grade 9	Grade 10	Grade 11	Grade 12
Algebra 2 H (*opt Geo H) or Algebra 2	Trig/Calculus H or Pre-Calculus H	AP Calculus BC AP Calculus AB Calculus H	Calculus III HH AP Calculus BC AP Statistics
Geometry H or Geometry	Algebra 2 H or Algebra 2	Trig/Calculus H or Pre-Calculus H	AP Calculus AB Calculus H AP Statistics
Algebra 1	Geometry	Algebra 2	Pre-Calculus or Probability & Statistics

)ption to double in geometry in 8th or 9th grade to advance.

2016-2017 Course Selection

Current Grade	Current Course	2016-2017 Course options
5	Math 5	Math 6 or Accel. Algebra A
6	Math 6	Algebra A or Accel. Algebra A
	Algebra A	*Algebra B
7	Math 7	*Algebra 1
	Algebra A	Algebra B
	Algebra B	Geometry
8	Math 8	Algebra 1 or Algebra 1 Honors
	Geometry or Geo with Alg	Algebra 2 or Algebra 2 Honors
	Algebra B or 1	Geometry or Geometry Honors
9	Algebra I/II part 1	*Algebra I/II part 2 with Geometry HH

*Course is only offered for that cohort in 2016-2017

Transition Plan

Next Steps

- Revise/create curricula to reflect new programming
- Develop implementation plan to support new plan
- Create district-made Algebra placement test
- Create building-based final exams
- Design teacher PD plan
- Revise Program Handbook/Placement Guide

Thank you Math Task Force Members!

- Consuelo Ortiz
- Dairon Montesino
- Dana Rubin
- Emmett Murphy
- George Glass
- Jennifer D'Agostino
- Mark Stulbaum
- Nisha Gandhi
- Richard Gazzillo
- Riddy Khan
- Sarah Kornblum
- Scott Feinstein
- Sharon Hurwich
- Jennifer Bloch