

Math Night!



"I suppose I could try, but I don't think I can make them any rounder."

Mark Bedrosian: Principal

Julia Fiedler-Ross: Dean of Academics-CSF Apprentice Principal

Vito Salm: Middle School Math Teacher

Agenda

1. Math Overview
2. Student Performance Data
3. Numeracy Course
4. High School Math
5. Math: 2018-2019 School Year



Math Overview

St. Raphael Math Overview

- Summer 2015
 - What we encountered when we arrived
 - Successes we brought to St. Raphael school
- 2015-2017 Work: new curriculum and Standards Report
- 2017-2018 School Year
 - Elementary School: goal area focused instruction
 - Middle School: high school ready, college pathway
 - Math Intervention

Student Performance Data

Students that Showed Statistically Significant Growth in 7th and 8th Grade

- **7th Grade Fall 2016 to Spring 2017:** 74% exhibited statistically significant growth
 - *Spring Area of Strength: Operations and Algebraic Thinking*
- **7th Grade Fall 2017 to Spring 2018:** 72% exhibited statistically significant growth
 - *Spring Area of Strength: The Real and Complex Number Systems*
- **8th Grade Fall 2016 to Spring 2017:** 67% exhibited statistically significant growth
 - *Spring Area of Strength: Operations and Algebraic Thinking*
- **8th Grade Fall 2017 to Spring 2018:** 80% exhibited statistically significant growth
 - *Spring Area of Strength: Operations and Algebraic Thinking*

Numeracy

Numeracy: A School-day course

- For students who need more support; replaces after school intervention
- Currently Math Intervention takes place once a week after school for grades 2-8th
 - Work on foundational skills linked to goal areas
- 2018-2019 Numeracy will take place once a week during the school day
 - For students who score 30th percentile on MAP Growth Math
 - 6th, 7th, and 8th graders will meet during HR
 - Meet by grade level, not combined
 - Grade based on participation and work completion, no HW
 - Winter Math MAP
 - Pass out of Numeracy with a score above the 30th percentile
 - Retake, or enrolled in, Numeracy if score is below the 30th percentile

High School Math

All at St. Raphael are enrolled in high school ready, college pathway math

All 8th Grade Students complete the First Half of Algebra 1, which is one of the improvements we have implemented

This results in three high school ready outcomes for our students

- The majority succeed, enroll in high school math, on a college ready pathway
- Some will require Numeracy, and will still enroll in a college ready math course in their freshman year of high school
- Some require accelerated math, including the 2nd Half of Algebra 1, and will most likely enroll in accelerated courses in high school

Pathways

Figure 1: On grade level pathway College readiness

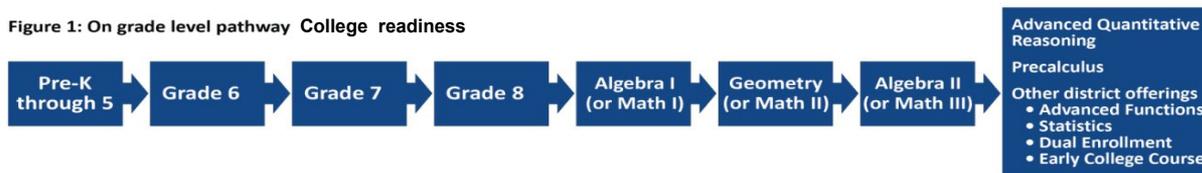


Figure 2–4: Three accelerated pathways leading to Calculus

Figure 2:

Compacting in Middle School

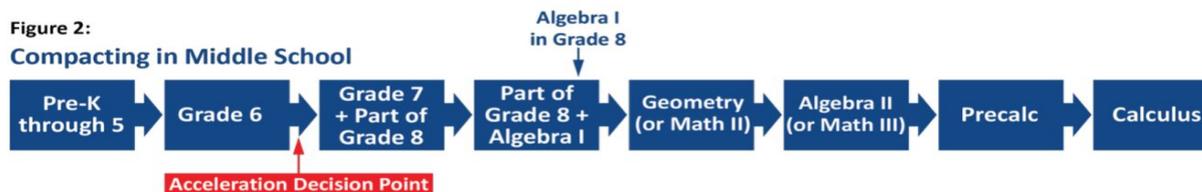


Figure 3:

Doubling Up in High School

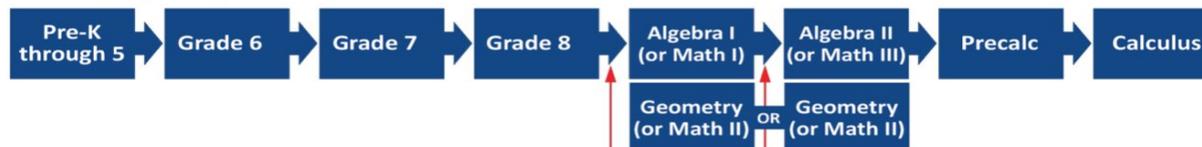


Figure 4:

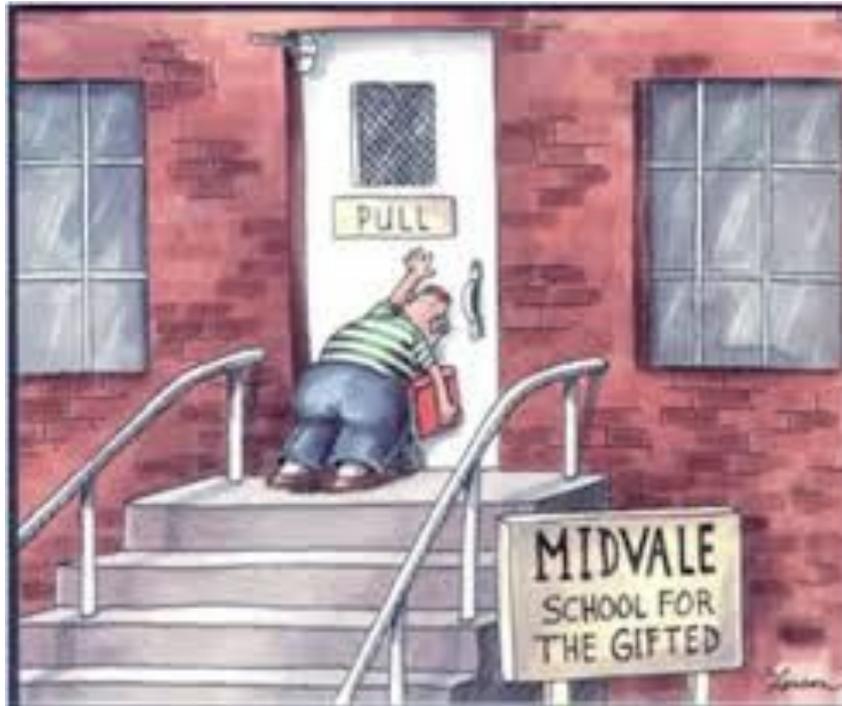
Enhanced Pathway in High School



2017-2018 Freshman Math Survey

- 100% of respondents are ahead of, or on, the college readiness pathway as freshmen
- 60% of respondents placed in accelerated Geometry or Honors level Algebra/Integrated classes
- 80% of respondents report grades of A or B, with 75% of those being A's
- 100% of respondents report Sophomore placement on pace with college readiness pathway
- 60% of respondents enrolled as Sophomores in Honors Geometry, or accelerated classes Honors Geometry/Alg II Integrated, Algebra II, Honors Algebra II, Honors Alg II/Trigonometry

St. Raphael's Math Program is a high school ready, college pathway program!



Research:

National Council of Teachers of Mathematics

- In order for students to be successful in algebra they need the maturity to: understand abstract math concepts, work with models and representations, and make connections among math structures
- When students take an algebra class the priorities should be: student qualification to ensure success, teaching for reasoning, and a strive for rich and meaningful experiences
- Mimicking teacher steps in math does not ensure deep understanding needed in an algebra course
- More harm is done than good placing a student in an algebra course when they are not ready

<https://www.nctm.org/News-and-Calendar/Messages-from-the-President/Archive/Linda-M-Gojak/Algebra-Not-If-but-When/>

Research:

Association for Supervision and Curriculum Development

- 8th Graders **ready** for full Algebra should be encouraged to take it
 - Need to have an interest
- More important for students to reach 8th grade being able to read proficiently and do basic arithmetic: add, subtract, multiply, divide

<http://www.ascd.org/publications/books/111015/chapters/Make-Them-Take-Algebra.aspx>

Math 2018-2019

School Year

Philosophy of Acceleration

- Exceeding standards is a key predictor of a need for acceleration
- Students in need of acceleration always exhibit performance that exceeds/meets all standards, at all times, on all assessments
- Students in need of acceleration are *the* underserved group within our school

2nd Half of Algebra 1: Pilot Year

- For students whose consistent, accelerated performance exhibits their **capability for doing more**
- Current 7th Grade cohort has exhibited less able achievement, with similar growth compared to the previous 8th Grade cohort
- The 2nd Half of Algebra class occurs when other students are scheduled for other classes, 4 days a week, with Mr. Salm
- August: 1 week, required summer course
- Exit strategy - If students need to drop the course, it will not appear on their high school application transcript or final transcript.

Qualification for 2nd Half of Algebra 1

Students who are always exceeding/meeting content standards and achieving A's on tests

Students who score in the top $\frac{1}{3}$ of their grade level cohort, in the following 7th Grade areas:

- Math test grade average
- Term 1, 2, and 3 Math Standards Report
- End-of-year benchmark assessment - informs Fall 8th Grade
- Spring 2018 MAP report standing
- Trimester 1, 2, and 3 Conduct and Effort Grades in Math

Myths vs. A Real Narrative

Myth #1 If my child is not in 2nd Half of Algebra 1, the school is holding my child back.

Real Narrative: 100% of students at St. Raphael are already on a high school ready, college pathway, and/or potentially advanced, math pathway. We have already elevated everyone.

Real Narrative: All children who require an opportunity for numeracy, college readiness math, or accelerated 2nd Half of Algebra 1, will be given that opportunity.

Myth #2 If my child tried harder, they would be in the 2nd Half of Algebra 1.

Real Narrative: Don't blame them! Students whose proficiencies/tendencies predispose that they exceed or meet standards, and exhibit the effort requiring an advanced opportunity, will receive it. If not, they will still be in a high school ready, college pathway math class. Be proud of them and your school!

Myths vs. The Real Narrative

Myth #3: You are tracking/limiting my child.

Real Narrative: All St. Raphael students are already tracked: on a high school ready, college pathway. Research shows that accelerating students prior to readiness results in a negative math perspective, not exceeding/meeting standards. Exceeding/meeting standards is the goal. We will offer any child, whose ongoing and current performance requires an accelerated learning opportunity, that opportunity.

Myth #4: St. Raphael's math program is not high school ready.

Real Narrative: All students are on a high school readiness, college pathway at this time. They all complete the First Half of Algebra 1. We are sending an increasing number of graduates to accelerated high school classes.

Myth vs. Real Narrative

Math #5: Accelerated placement leads to high school AP classes = College/University credit in that specific class.

Real Narrative:



Myth #6: My child's value as a person, and my value in the school community, is contingent on my child's 8th Grade Math Placement in an accelerated class.

Real Narrative: Your child's dignity and value is never compromised by the level of achievement they exhibit. Their achievement/performance informs the school what they need during 8th Grade.

Conclusion

- We have elevated our math program for all.
- 100% of our students are high school ready, and on a college pathway
- We plan to meet the needs of all learners, including those who have exhibited readiness for accelerated 2nd Half of Algebra.

Questions



“I spoke to my old math teacher today.
He says don’t give up hope, someday
algebra WILL be useful to me.”

Khan Academy

- Required: 1 hour a week during the summer
- Use Spring 2018 Math MAP RIT scores
 - Mr. Salm will walk students through this
 - Ms. Fiedler-Ross will send out an email about summer academic support