New Math Course Recommendation

Recommended New Course in Mathematics: Algebra and Geometry Honors

The Why…

D86 has approx.100 freshman students who scored very well on their Grade 8 MAP tests (>80% nationally) and who performed well in 8 grade CC math. But because they are “late bloomers” in math, did not start to accelerate in math classes during MS.

Question: How do we meet the changing needs of a freshman in algebra who is ready for and wants to accelerate into a higher level math course in HS?

- D86 does not currently offer an Honors Algebra Course
- Over the past 6 years, approximately 355 students in the district have taken advantage of our course advancement opportunities and “self accelerated”
  - Blocked class participation (2 periods of math in their schedule)
  - Summer Course participation (Geometry and Pre-Calculus)

Algebra and Geometry Honors

Proposed Course Description:
This course is designed for students who have a mastery level of solving linear equations and linear functions. It is a fast-paced course that will allow students to complete Algebra 1 and Geometry in one year. A major emphasis will be placed on the integration of algebra and geometry skills and concepts. *A graphing calculator is a required supply for this course.*

Must complete the entire year to fulfill the ISBE Algebra I and Geometry graduation requirement.
Prerequisite: Teacher Recommendation and Department Chair Approval
Open to grade 9

Benefits & Challenges

- Advanced freshman who would normally only go to Algebra 1 can currently only accelerate via:
  - taking Geometry Accelerated in D86 over the summer
  - block their math classes sophomore year
- This course removes barriers and provides better access to students
  - Saves families $600 (cost of the summer class)
  - Sophomores wouldn't need to block their schedule and can an additional elective course since they do not need two periods of math
- The Algebra 1 and Geometry content will be woven together throughout the course to meet all essential standards and select enrichment standards for both subjects.

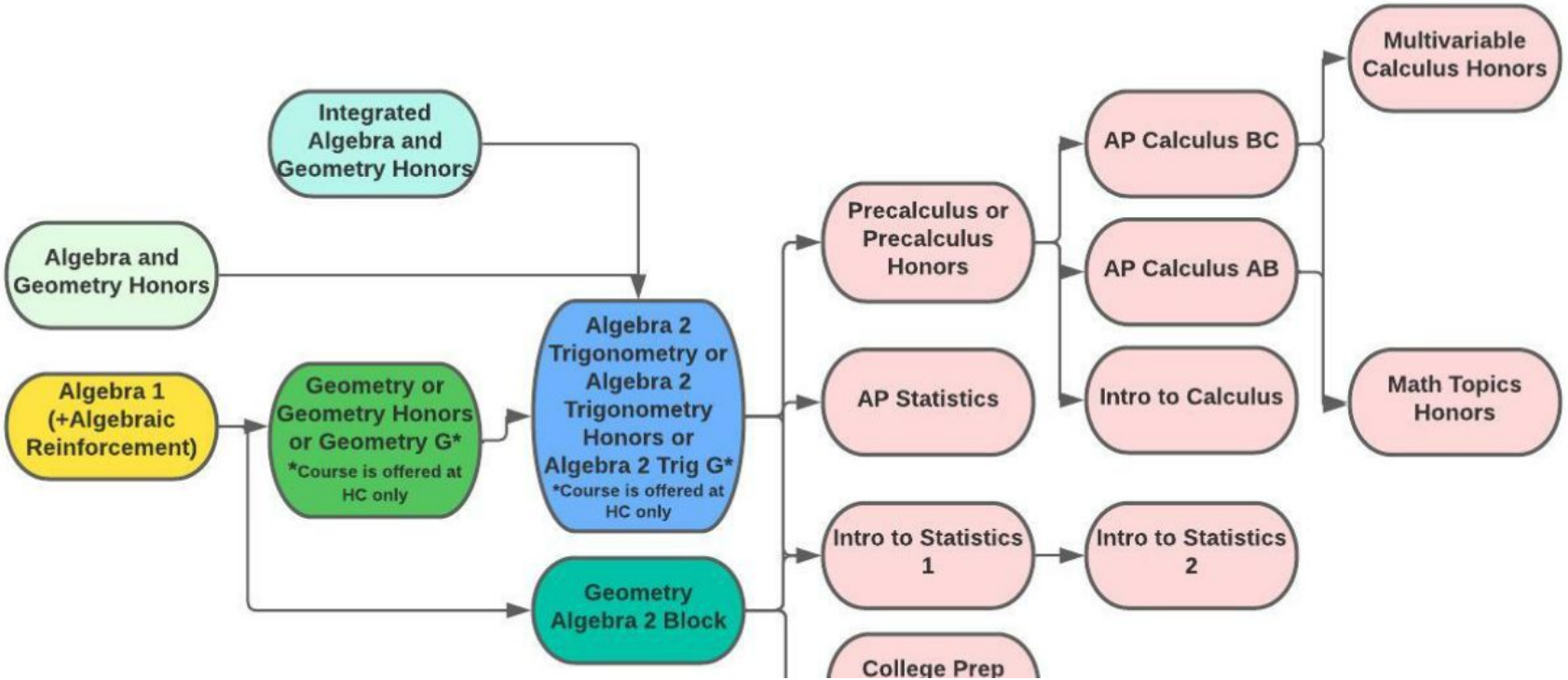
Linkage between 8th grade CC & Algebra 1

8th grade CC	Algebra 1
Solve linear equations in one variable CCSS.MATH.CONTENT.8.EE.C.7.A CCSS.MATH.CONTENT.8.EE.C.7.B	Solve equations and inequalities in one variable CCSS.MATH.CONTENT.HSA.REI.B.3
Define, evaluate and compare functions CCSS.MATH.CONTENT.8.F.A.1 CCSS.MATH.CONTENT.8.F.A.2 CCSS.MATH.CONTENT.8.F.A.3	Understand the concept of a function and use function notation CCSS.MATH.CONTENT.HSF.IF.A.1 Analyze functions using different representations CCSS.MATH.CONTENT.HSF.IF.C.7
Use functions to model relationships between quantities CCSS.MATH.CONTENT.8.F.B.4 CCSS.MATH.CONTENT.8.F.B.5	Build a function that models a relationship between two quantities CCSS.MATH.CONTENT.HSF.BF.A.1
Analyze and solve pairs of simultaneous linear equations CCSS.MATH.CONTENT.8.EE.C.8.A CCSS.MATH.CONTENT.8.EE.C.8.B CCSS.MATH.CONTENT.8.EE.C.8.C	Solve systems of equations CCSS.MATH.CONTENT.HSA.REI.C.6
Investigate patterns of association in bivariate data CCSS.MATH.CONTENT.8.SP.A.2 CCSS.MATH.CONTENT.8.SP.A.3	Interpret linear models CCSS.MATH.CONTENT.HSS.ID.C.7 CCSS.MATH.CONTENT.HSS.ID.B.6

Linkage between 8th grade CC & Geometry

8th grade CC	Geometry
Understand congruence and similarity using physical models, transparencies, or geometry software. CCSS.MATH.CONTENT.8.G.A.3 CCSS.MATH.CONTENT.8.G.A.4 CCSS.MATH.CONTENT.8.G.A.5	Experiment with translations in the plane CCSS.MATH.CONTENT.HSG.CO.A.2 CCSS.MATH.CONTENT.HSG.CO.A.5 Understand similarity in terms of similarity transformations CCSS.MATH.CONTENT.HSG.SRT.A.1
Understand and apply the Pythagorean Theorem CCSS.MATH.CONTENT.8.G.B.7 CCSS.MATH.CONTENT.8.G.B.8	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems CCSS.MATH.CONTENT.HSG.SRT.C.8
Solve real world and mathematical problems involving volume of cylinders, cones and spheres CCSS.MATH.CONTENT.8.G.C.9	Explain volume formulas and use them to solve problems CCSS.MATH.CONTENT.HSG.GMD.A.1 Visualize the relationships between two-dimensional and three-dimensional objects CCSS.MATH.CONTENT.HSG.GMD.B.4

D86 Math Pathway for Algebra and Geometry Honors



Summary

Overall, the Algebra and Geometry Honors course increases student access to AP courses for high achieving freshmen students who have not yet been accelerated in their math coursework.

- ★ Cost neutral- FTE that would have gone towards teaching this population of students Algebra 1 will be reallocated to the FTE for Algebra & Geometry Honors.
- ★ Ideally, Geo/A2T Block will not have the numbers to run in the future
- ★ We know there is a population that wants to and is ready to accelerate with their math studies and Algebra and Geometry Honors allows us to challenge this learner and allow them to meet their post-secondary goals.