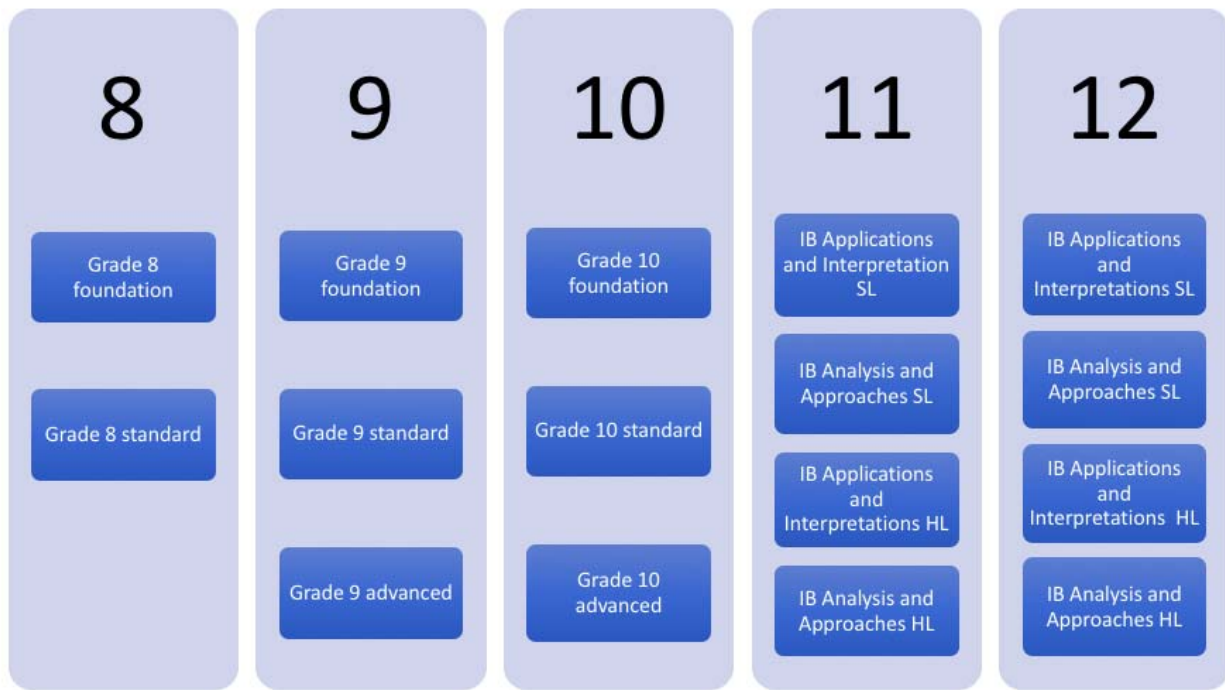




Revised Math Program



FAQ for parents

What is an integrated math curriculum?

An integrated curriculum removes math learning from discreet topics and teaches students how to make connections between branches. An integrated program is a sequence of three courses, which each include functions, algebra, geometry, and statistics standards.

ISB math courses will remain aligned to the same Common Core State Standards and assessed using standards-based grading. The new courses will have the same high degree of rigor. More detail on the exact changes is explained below.

How are the traditional and integrated models different?

The difference between the traditional and integrated pathways is how the standards are organized into courses. For example, in the traditional pathway, geometry is its own course. In the integrated pathway, geometry standards are included in all three courses. The same mathematical concepts will be taught, just organized in a new way. The integrated pathway is intended to promote understanding of the connections across all conceptual categories, as standards from all conceptual categories are included in each of the three courses.

Why revise our math curriculum?

- ISB has a commitment to providing students the highest quality mathematics program. Studies from the National Council for Teachers of Mathematics and others have shown that the integrated mathematics pathway **improves student achievement** and helps students develop a deeper understanding of mathematical concepts and their relevance to the real world.¹
- Math at ISB is taught through an integrated model K – 8 and in IBDP Math. An integrated math curriculum **improves the learning progression** to ensure that all students have exposure to important topics such as geometry. ²
- This integrated approach better prepares students for incoming **changes to IBDP**.
- An integrated math pathway allows for **greater flexibility** in student math pathways. Students who develop their math reasoning skills at different times have the chance to move into a higher course.
- Countries that consistently perform well on the Program for International Student Assessment (PISA) have long embraced integrated mathematics. ³

How has ISB been preparing for this Integrated curriculum?

This integrated curriculum represents a realignment of the standards rather than a completely different curriculum. ISB teachers have been exploring these changes and revising our curriculum as Middle School and High School departments and with IBDP consultant Jennifer Wathall since fall 2018. We are continuing to partner with this expert as we redesign our curriculum to support our students' math learning.

Rollout Timeline:

2019-2020:

- Revised IB courses start in 11th grade
- Revised Courses start in 8th and 10th grade

2020-2021

- Revised IB courses continue into 12th grade
- Revised Courses start in 9th grade

¹ Grouws, D. et al. "Curriculum and Implementation Effects on High School Students' Mathematics Learning from Curricula Representing Subject-Specific and Integrated Content Organizations." *National Council of Teachers of Mathematics*, 2013.

https://www.researchgate.net/publication/258201166_Curriculum_and_Implementation_Effects_on_High-School_Students_Mathematics_Learning_from_Curricula_Representing_Subject-Specific_and_Integrated_Content_Organizations

² Tarr, J., D. Grouws, et al. "The Effects of Content Organization and Curriculum Implementation on Students' Mathematics Learning in Second-Year High School Courses." *Journal for Research in Mathematics Education*, July 2013. <http://www.blueribbon.ws/InformationFiles/jrme2013-07-683%20integrated.pdf>

³ "PISA Results in Focus." Organization for Economic Cooperation and Development, 2012. <https://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf>

Summary of Changes to our 8th Grade Mathematics Program:

Our new Grade 8 Standard course is identical and equivalent to our current 8 Math course. The changes to our current Algebra 1 course are minor and only involve moving the study of *Quadratic Functions & Modeling* moved into our 9th grade course. Whilst the study of *Connecting Algebra & Geometry through Coordinates* and *Congruence, Proof & Constructions* are moved into our 8th grade course.

Areas of study:

Algebra 1

- Relationships Between Quantities and Reasoning with Equations
- Linear and Exponential Relationships
- Descriptive Statistics
- Expressions and Equations
- Quadratic Functions and Modeling

Grade 8 Standard

- Relationships Between Quantities and Reasoning with Equations
- Linear and Exponential Relationships
- Descriptive Statistics
- Expressions and Equations
- Connecting Algebra and Geometry through Coordinates
- Congruence, Proof, and Constructions