

Gr. 6, 7, 8 Advanced Math

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Objectives:

The IB Advanced Math course encourages and enables students to:

- Enjoy math, develop curiosity and begin to appreciate its elegance and power
- Develop an understanding of the principles and nature of math
- Communicate clearly and confidently in a variety of contexts
- Develop logical, critical, and creative thinking
- Develop confidence, perseverance, and independence in problem solving
- Apply and transfer skills to a wide range of real-life situations, other areas of knowledge, and future developments
- Discover patterns and make generalizations
- Appreciate how developments in technology and mathematics have influenced each other
- Appreciate the moral, social, and ethical implications arising from the work of mathematicians and the applications of mathematics
- Appreciate the international dimension of math through an awareness of its universality and multicultural and historical perspectives
- Develop the knowledge, skills, and attitudes necessary to pursue further studies in math
- Develop the ability to reflect critically on their own work and the work of others

Curriculum

6th Grade: 7th Grade Math

In sixth grade, the instructional time emphasizes five areas of emphasis, with one being fluency in performing operations with integers, positive fractions, and positive decimals. The scope and sequence for sixth grade was purposefully written to spiral content so that students can build both number sense and confidence.

Math Nation 7th Grade

(ISBN: 978-1-952882-32-6)

7th Grade: PreAlgebra

This course prepares students for Algebra I in 8th grade. Our focus will be on integers, rational and real numbers in order to set the stage for equations, inequalities and functions. Students will represent numbers in scientific notation, generate equivalent numerical and algebraic expressions using the laws of exponents, create and reason about linear relationships, develop an understanding of the concept of a function, and analyze two dimensional figures, particularly triangles, and apply the Pythagorean Theorem. Students will encounter real-world applications to the more abstract algebraic concepts.

Math Nation 8th Gr: Pre-Algebra

(ISBN: 978-1-952882-50-0)

8th Grade: Introduction to Algebra (There will be no high school credit offered for this course.)

In this course, students will be given the opportunity to delve deep into the first semester of Algebra 1. This course lays the foundation for students to be successful in Algebra 1 in high school. Students will learn an introduction to functions, extend laws of exponents to include rational exponents, perform operations with polynomials and radicals, and work with linear functions. Students should be procedurally fluent with operations with rational numbers and laws of exponents including integer exponents by the time they enter this course. This course is listed as PreAlgebra-8 in PowerSchool.

Sadlier Algebra 1

(ISBN: 978-0-821508209-1)

8th Grade: Honors Algebra 1

In this course, students will participate in a rigorous study of Algebra 1 and take an end of course exam for potential high school credit. Students will perform operations with polynomials and radicals, extend laws of exponents to include rational exponents, and work with linear, quadratic, absolute value, and exponential functions. Students should be procedurally fluent with operations with rational numbers and laws of exponents including integer exponents by the time they enter this course. **In order to receive high school credit, your student must pass the course with a B average or higher and a passing score on the end of course (EOC) exam.**

Math Nation Algebra 1

(ISBN: 978-1-952882-59-3)

Grading Scale

Tests -100 points. Tests are given at the end of a unit. If a student is absent for a test, it is the student's responsibility to schedule a make up time.

Quizzes - 50 points. There will be several quizzes given throughout each chapter and are designed to prepare students for the upcoming unit test. If a student is absent for a quiz, it is the student's responsibility to schedule a make-up quiz.

Classwork/Bell Work - 10-30 points. Classwork on paper or from IXL, Khan Academy, or Desmos will be given periodically in order to reinforce skills in class.

Homework - 5-20 points. Homework is meant to reinforce skills taught in class. It is crucial to the learning process and it is the expectation that it will be completed when assigned. Students are responsible for writing all assignments and the due dates in their planners.

All work must be shown on assignments in order to receive full credit. See AI policy on next page

Late Work Policy

- Late work will be accepted under certain conditions.
- Points will be deducted from the final grade depending on how late the work is. Firm deadlines will be communicated with students.
- Students will be sent to study hall if they will benefit from the time to make up any late work.

Conduct Grade

Trinity Catholic School is committed to providing a high-quality Catholic education for all students in an atmosphere conducive to learning and teaching. Grounded in the teachings of the Gospels, we demonstrate our faith through our behavior and we take responsibility for our actions and their consequences. We maintain high expectations with respect to student effort, positive growth, personal responsibility, and respect.

Conduct grades are a separate evaluation from academic performance. They reflect a student's overall behavior and development as a citizen within the classroom environment. Consistent positive behavior contributes significantly to a strong learning environment for everyone. By striving to meet the character traits of "KNIGHTS," students can earn high conduct grades in each subject, while fostering a positive and respectful classroom community.

I show... **K**indness
I am... **N**urturing
I act with... **I**ntegrity
I show... **G**rit
I have... **H**ope
I show... **T**olerance

Teachers base conduct grades on a student's consistent behavior throughout the quarter, not just isolated incidents. In this class, I will look for the following:

Above Average Knight Behavior 1	• Is a positive role model, who leads quietly or outwardly • Shows kindness and care for others • Is always respectful of Mrs. Bowers and fellow students • Takes an active part in bell work, textbook work, class discussions, and partner work; can be regularly relied upon to answer questions in class • Works to improve the classroom atmosphere by taking risks and asking questions during lessons • Is a self-starter of all assignments and seeks to help others • Completes all HW packets, IXL, and assessments to the best of their ability, with honesty and integrity • Respects and uses calculators and chromebooks as assigned • Arrives on time and immediately begins bell work • Consistently completes homework packets and IXL lessons on time
Satisfactory Knight Behavior 2	• Does what is expected • Contributes positively to class when asked • Shows respect for others • Comes to class prepared and on time • Demonstrates personal and academic integrity • Listens and talks when appropriate • Willing to help others • Respects and uses calculators and chromebooks as assigned

Needs Improvement Knight Behavior 3	• Needs frequent reminders by the teacher to stay on task and/or behave appropriately • Needs improvement in showing respect and kindness to classmates/Mrs. Bowers • Sometimes comes to class unprepared and/or does not complete work • Distracts other students' learning (i.e. constant talking) • Occasionally displays a negative or uncooperative attitude • Irresponsible with calculators or chromebooks
Unsatisfactory Knight Behavior 4	• Is a disruptive influence on the class, negatively impacting the learning environment • Shows a lack of respect for Mrs. Bowers/fellow students • Is disrespectful or unkind to others, in actions or words • Regularly comes to class unprepared and puts forth little effort in HW packets, IXL assignments, and assessments • Demonstrates a lack of personal and academic integrity (i.e., does not complete work independently) • Steals or damages calculators or chromebooks • Regularly displays a negative or uncooperative attitude

In the event a student receives a 3 or 4 in Conduct and the behavior does not improve, a Parent/Teacher Conference may be scheduled, a Behavior Plan will be put in place, and the student may lose privileges. In the event that the behaviors don't improve over time, it may be decided that Trinity is not the best fit for that student.

AI Policy

Artificial intelligence can be used as a tool for learning math, but is not necessary and its use is not required in this math class. Students will always be held responsible for the accuracy of their work and solutions to problems. AI should never be used as a substitute for effort to complete work independently.

If AI is ever used, students must explain which tool was used and how/why it was used. The following are examples of acceptable uses for AI in this class:

- Step by step instructions as a review before a test
- Ask for an explanation if stuck on HW
- To understand math vocabulary
- To compare your answers while completing HW or reviewing for a test

Misuse of AI will be considered cheating. **You should never ask AI to solve a question for you and submit the work as your own.** Students will find that using AI for these purposes will leave them vastly underprepared for in class assessments. Please refer to the IB academic honesty policy for consequences.

Supplies

Students are required to bring ALL the materials listed below to each class.

- 1 composition notebook (for notes)
- 3 ring binder with three dividers (for organizing HW, handouts/graded work, blank paper/scratch work)

- loose leaf paper (for showing work)
- sharpened pencils (ALL math work will be done in pencil; pens may only be used when self-grading HW during class time)

Calculators will be provided in class. If the student wishes to have their own personal calculator, they should only use a Texas Instruments TI-30Xa Scientific Calculator.

Communication

Google Classroom

Homework and IXL due dates will be posted in the class on Google Classroom regularly. Parents are invited to use this tool to help monitor their child's assignments and important dates.

E-mail

The most effective method of communication will be e-mail. Parents should expect to receive a reply within 24 hours. Students may confer directly with me to resolve any questions or concerns about their learning with their school-issued email account if they did not have a chance in class.

Powerschool

Parents and students are responsible for checking PowerSchool on a regular basis to monitor progress. Please bring concerns to my attention as soon as they appear. We will work together to promote student progress. Questions regarding access to PowerSchool should be directed to the front office.