

# Math Curriculum

## 7<sup>th</sup> Grade



Thoreau Middle School

# Course Sequencing

## MATHEMATICS ACADEMIC SEQUENCE OF COURSES K-12

MIDDLE SCHOOL		HIGH SCHOOL			
Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
**Algebra 1 Honors	Geometry Honors	Algebra 2 Honors <i>or</i> Algebra 2	*Precalculus Honors <i>or</i> *Precalculus	AP Calculus BC <i>or</i> AP Calculus AB	Multivariable Calculus <i>or</i> AP Elective
Mathematics 7 Honors <i>or</i> Mathematics 7	Algebra 1 Honors <i>or</i> Algebra 1	Geometry Honors <i>or</i> Geometry	Algebra 2 Honors <i>or</i> Algebra 2	*Precalculus Honors <i>or</i> *Precalculus	AP Calculus BC <i>or</i> AP Calculus AB
Mathematics 7	Prealgebra	Algebra 1	Geometry <i>or</i> Geometry Honors	Algebra 2 <i>or</i> Algebra 2 Honors	*Precalculus <i>or</i> *Precalculus Honors

# 7<sup>th</sup> Grade Math Courses

## Taught at TMS

- ❖ Math 7
  - Small group and team taught are available
- ❖ Math 7 Honors
  - Pre-Algebra coursework
- ❖ Algebra 1 Honors
  - Mixed classes with 7<sup>th</sup> and 8<sup>th</sup> grade students
  - Taught by 8<sup>th</sup> grade math teachers

**Algebra I Honors is a High School Course that affects the High School GPA**

# All FCPS Math Course Goals:

*Every math course taught in FCPS has the same goals for every student:*

- To build new mathematical knowledge through problem solving and to develop a repertoire of skills and strategies for solving a variety of problem types
- To communicate mathematical ideas coherently and clearly and to analyze and evaluate the mathematical thinking of others
- To use logical reasoning in solving mathematical problems and to explain and justify mathematical ideas
- To understand how mathematical ideas interconnect and build on one another and to use those connections to solve problems
- To create and use a variety of representations in learning, doing, and communicating mathematics

# Math 7

6

**Math 7 prepares students to take either Pre-Algebra or Algebra 1 in the 8<sup>th</sup> grade.**

This course provides the opportunity for students to examine:

- ▶ Algebra and geometry preparatory concepts and skills
- ▶ Strategies for collecting, analyzing, and interpreting data
- ▶ Number concepts and skills especially proportional reasoning

**Students will take the Math 7 SOL test**

# Math 7 HN

8

(Pre-Algebra)

**Math 7 Honors prepares students to take either Algebra 1 or Algebra 1 Honors in the 8<sup>th</sup> grade.**

- This course is the Pre-Algebra curriculum and includes all extensions and enrichment.
- The depth and level of understanding in Math 7 Honors is beyond the scope of Math 7.

**Students will take the Math 8 SOL test**

# Math 7 Honors

10

Students who have NOT successfully completed an entire year of AAP Mathematics 6 may require additional independent effort and practice. Students will be expected to advocate for themselves when extra support is needed.

**Math 6** —————→ **Math 7 Honors**

An entire year of math  
(math 7 content) is missed

# Some topics missed...

**Math 6**  **Math 7 Honors**

- Two-step equation solving
- Two-step inequality solving and graphing
- Order of operations with fractions and decimals
- Three-dimensional geometry
- Functions (slope-intercept form)
- Proportional reasoning
- Percent applications



# Compare and Contrast

12

Math 7 vs. Math 7 HN

## Exponents

Math 7

$$3^2 = 9$$

## Exponents

Math 7 Honors

$$3x^2 \cdot \frac{2}{3}x^4 = 2x^6$$

# Compare and Contrast

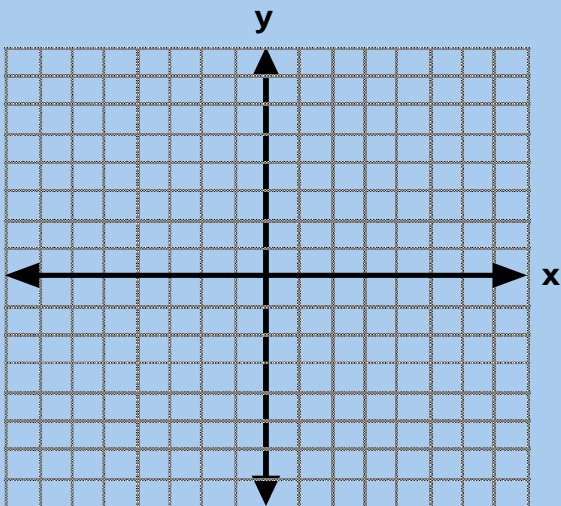
13

Math 7 vs. Math 7 HN

## Functions

Math 7

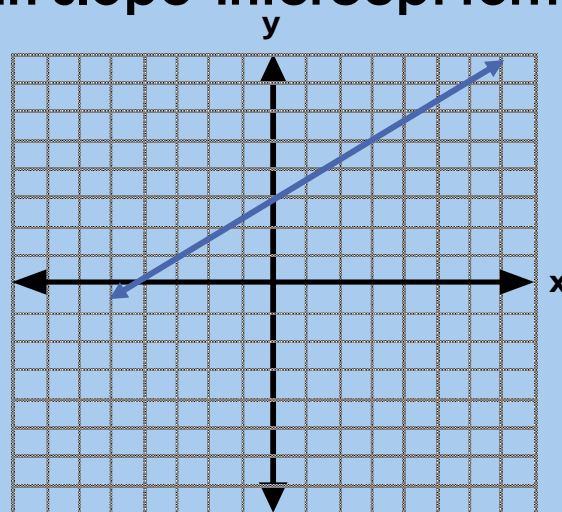
Draw the graph  $y = x + 3$



## Functions

Math 7 Honors

Identify the graph drawn in slope-intercept form.



# Compare and Contrast

14

Math 7 vs. Math 7 HN

## Equations

Math 7

$$2(x - 3) = 14$$

## Equations

Math 7 Honors

$$4(3x - 5) - 10x = -28 + x$$

# Algebra 1 HN

15

This course is taught assuming prior knowledge of everything taught in Math 7 Honors.

The pacing of this course is quicker and more rigorous than Algebra 1.

If a student takes this course coming from Math 6 AAP (or Math 7), there is a lot of **independent**, out of class learning that will have to take place to meet the curriculum where it is taught.

**Algebra I Honors is a High School Course that affects the High School GPA**

# Compare and Contrast

17

## Algebra 1 vs. Algebra 1 HN

Algebra 1	Algebra 1 Honors
$\frac{3(13 - 5^3) - 7}{-9 - 3^2}$	$(4\theta 8)(-2\Omega 6)$ $a\theta b = \sqrt{b - a} \text{ and } a\Omega b = a^2 - b^3$
$\begin{aligned} -5(2x - 8) &\leq -20 \\ x &\geq 6 \quad [6, \infty) \end{aligned}$	$\begin{aligned} -45 < -5(2x - 8) &\leq -20 \\ 6 \leq x < 8.5 &\quad [6, 8.5) \end{aligned}$
$\sqrt{24x^3} = 2x\sqrt{6x}$	$\sqrt{\frac{63x^7}{8x^3}} = \frac{3x^2\sqrt{14}}{4}$

# Additional thoughts to consider when deciding course placement...

- What math course does your child want to be taking their senior year of high school?
- Is your child prepared for the rigor and pace of an honors course?
- Is your child also taking a foreign language for High School credit?
- How much support outside of the classroom does your child need from the school and home to be successful in math?