

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



# Introductions



# Outcomes



- Understand the county strategic plan
- Understand course options for 7th graders
  - Math 7 vs. Math 7 Honors
  - Requirements for Algebra 1 HN/Geometry

# Questions?



OR Use this link

<https://rb.gy/f40oea>

# FCPS Strategic Plan

- FCPS has 5 goals within its Strategic Plan
- Goal 3 - Academic Growth and Excellence
  - Growth and performance in coursework (e.g., course grades, grade point average [GPA], meeting Individualized Education Program [IEP] goals, and language acquisition goals) (including students with 504s)
  - Growth and performance on state/national/international assessments in reading, math, social studies, and science
  - Successful completion of Algebra 1 by 8th Grade
  - Evidence of progression towards or successful completion of advanced coursework (e.g., Honors, Advanced Placement [AP], International Baccalaureate [IB], dual enrollment, Career and Technical Education [CTE], etc.)
  - Growth with evidence in at least one/two self-identified Portrait of a Graduate skills, annually
  - Students reading on grade level by the end of 3rd Grade

# Course Sequencing

ELEMENTARY GRADE 6	MATHEMATICS ACADEMIC SEQUENCE OF COURSES K-12					
	MIDDLE SCHOOL		HIGH SCHOOL			
	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Math 6 Adv	**Algebra 1 Honors	Geometry Honors	Algebra 2 Honors or Algebra 2	*Precalculus Honors or *Precalculus	AP Calculus BC or AP Calculus AB	Multivariable Calculus or AP Elective
Math 6 Adv Math 6	Mathematics 7 Honors or Mathematics 7	Algebra 1 Honors or Algebra 1	Geometry Honors or Geometry	Algebra 2 Honors or Algebra 2	*Precalculus Honors or *Precalculus	AP Calculus BC or AP Calculus AB
Math 6	Mathematics 7	Prealgebra	Algebra 1	Geometry or Geometry Honors	Algebra 2 or Algebra 2 Honors	*Precalculus or *Precalculus Honors

# Course Sequencing

## MIDDLE SCHOOL MATH PROGRESSION

### 6TH GRADE

**MATH 6**  
Math 6 SOL

**ADVANCED MATH 6**  
Math 7 SOL

**ALGEBRA 1 HN**  
Algebra 1 EOC SOL

### 7TH GRADE

**MATH 7**  
Math 7 SOL

**MATH 7 HN**  
Math 8 SOL

**ALGEBRA 1 HN**  
Algebra 1 EOC SOL

**GEOMETRY HN**  
Geometry EOC SOL

### 8TH GRADE

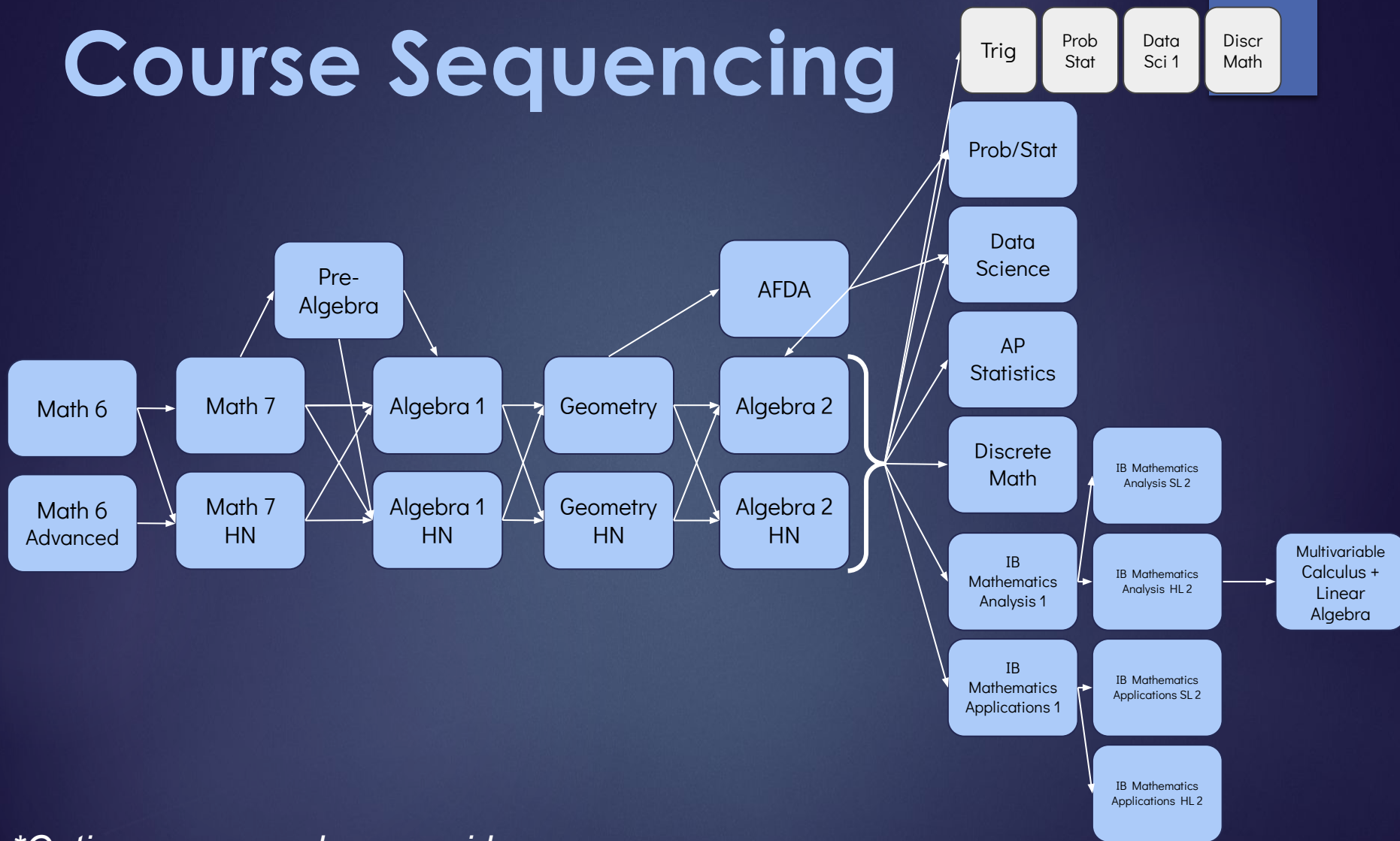
**PRE-ALGEBRA**  
Math 8 SOL

**ALGEBRA 1**  
**ALGEBRA 1 HN**  
Algebra 1 EOC SOL

**GEOMETRY HN**  
Geometry EOC SOL

**ALGEBRA 2 HN**  
Algebra 2 EOC SOL

# Course Sequencing



*\*Options may vary by pyramid.*



# 7<sup>th</sup> Grade Math Courses Taught at TMS

- ❖ Math 7
  - Math 7 Curriculum
- ❖ Math 7 Honors
  - Pre-Algebra Honors Curriculum
- ❖ Algebra 1 Honors
  - Mixed classes with 7<sup>th</sup> and 8<sup>th</sup> grade students

**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

**Math 7 prepares students to take either Pre-Algebra or Algebra 1 in 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 Honors

## (Pre-Algebra)

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

- This course is taught assuming prior knowledge of all concepts taught in Math 6 Advanced/Math 7.
- This course is the Pre-Algebra curriculum and includes all extensions and enrichment.

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

# Math 7 Honors

Students who have NOT successfully completed a year of Mathematics 6 Advanced 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**

A year of math  
(Math 7 content) is missed

# Topics that are 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

# Math 7 vs. Math 7 HN

## Exponents

Math 7

$$3^2 = 9$$

## Exponents

Math 7 Honors

$$(3n^4)^2 = 9n^8$$

# Exponents in Math 7

## 24-25 M7U2: Rational Numbers & Exponents (VA Standards 7.NS.1-3)

<p><b>Th 9/12 - F 9/13</b></p> <p><b>Day 1</b></p> <p>Square Roots &amp; Perfect Squares</p>	<p><b>M 9/16 - T 9/17</b></p> <p><b>Day 2</b></p> <p>Base 10 with Positive &amp; Negative Exponents</p> <p><b>Q1 Square Root Assignment</b></p> <p>_____ %</p>	<p><b>W 9/18 - Th 9/19</b></p> <p><b>Day 3</b></p> <p>Scientific Notation</p>	<p><b>F 9/20 - M 9/23</b></p> <p><b>Day 4</b></p> <p>Comparing &amp; Ordering Scientific Notation</p> <p><b>Q1 Scientific Notation Assignment*</b></p> <p>_____ %</p>
<p><b>T 9/24 - W 9/25</b></p> <p><b>Day 5</b></p> <p>Review/Practice</p>	<p><b>Th 9/26 - F 9/27</b></p> <p><b>Day 6</b></p> <p>Absolute Value</p> <p><b>Q1 Unit 2 Quiz Assignment</b></p> <p>_____ %</p>	<p><b>M 9/30 - T 10/1</b></p> <p><b>Day 7</b></p> <p>Unit Review</p>	<p><b>W 10/2 - M 10/7</b></p> <p><b>Day 8</b></p> <p>Unit 2 Assessment</p> <p><b>Q1 Unit 2 Assessment*</b></p> <p>_____ %</p>



# Exponents in Math 7HN

## M7HNU11: Laws of Exponents

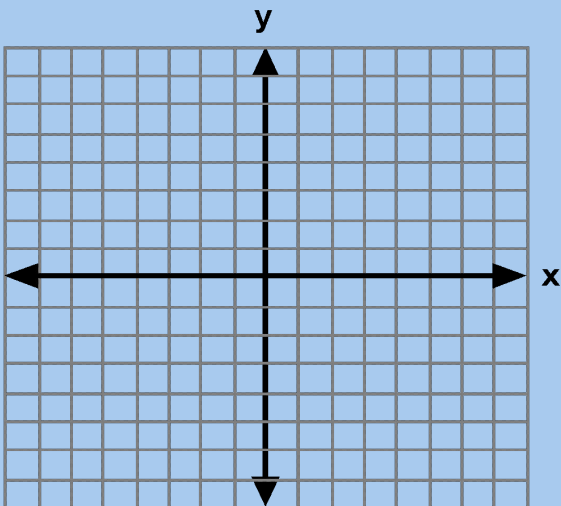
<p><b>Day 1</b></p> <p>Laws of Exponents Multiplying &amp; Dividing Exponents</p>	<p><b>Day 2</b></p> <p>Power to Power Power of a Quotient &amp; Power of a Product</p>	<p><b>Day 3</b></p> <p>Math Inventory &amp; Exponents Practice</p>	<p><b>Day 4</b></p> <p>Negative Exponents</p> <p><b>*Graded Classwork</b> _____ %</p>
<p><b>Day 5</b></p> <p>Mixed Review</p>	<p><b>Day 6</b></p> <p><b>*Exponents Assessment*</b>  _____ %</p>		

# Math 7 vs. Math 7 HN

## Functions

Math 7

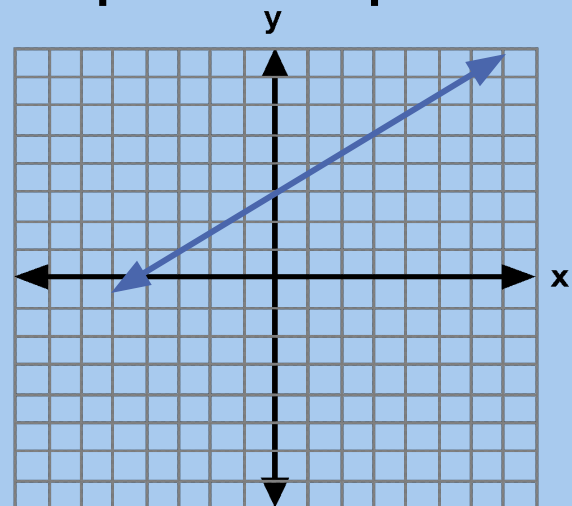
Draw the graph  $y = 2x + 3$



## Functions

Math 7 Honors

Write the equation in slope-intercept form.



# 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

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 Math 7 Honors. Students will take the Algebra 1 SOL.

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

**Algebra I Honors for 7th grade has testing requirements. This is a High School Credit Course that affects the High School GPA.**

# Algebra 1 Honors Syllabus

## Quarter 1:

- Expressions and operations
- Equations and inequalities
- Functions

## Quarter 2:

- Lines
- Systems of equations and inequalities

## Quarter 3:

- Exponents and radical expressions
- Polynomials
- Quadratics

## Quarter 4:

- Quadratics continued
- Variation

## The extension topics include:

- Absolute Value Equations
- Compound Inequalities
- Fractional exponents
- Set builder notation for both equations and inequalities
- Domain and range of piecewise functions
- Systems of inequality word problems
- Radical equations
- Adding and subtracting radical expressions
- Quadratic applications

# Algebra 1 vs. Algebra 1 HN

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

# Thoughts to consider when deciding course placement...

Math 7 Course	Math 7 Honors Course
<ul style="list-style-type: none"><li>▪ Math 7 Curriculum</li><li>▪ Extended time for practice and assessment completion</li><li>▪ Practice on prior years' content to prepare for upcoming topics</li></ul>	<ul style="list-style-type: none"><li>▪ Math 8 Curriculum + 14 additional topics</li><li>▪ Faster Pacing</li><li>▪ Tests &amp; Homework Assignments are more challenging and may take longer to complete</li></ul>
<b>Math 7 Students:</b>	<b>Math 7 Honors Students:</b>
<ul style="list-style-type: none"><li>▪ Prepared</li><li>▪ May need assistance and/or practice with number sense.</li><li>▪ May utilize retakes on tests to improve scores</li></ul>	<ul style="list-style-type: none"><li>▪ Consistently prepared.</li><li>▪ Strong Number Sense</li><li>▪ Ability to Self-Advocate</li><li>▪ Content is mastered initially/ Need for retakes are minimal</li></ul>

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

- What course does **your child** select to enroll in?
- 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 world 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?



# Questions?



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# Additional Questions?

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