

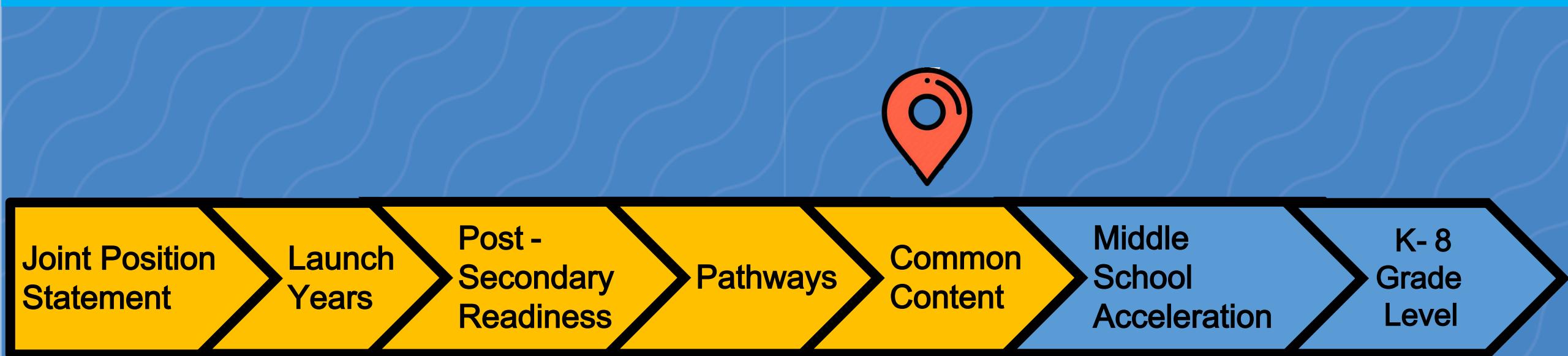
Reimagining Common High School Content



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From Foundations to Futures: A PD Series on Readiness, Access, and Alignment



Topic Overview

Secondary math education is not clear on priority content and does not serve ALL students.

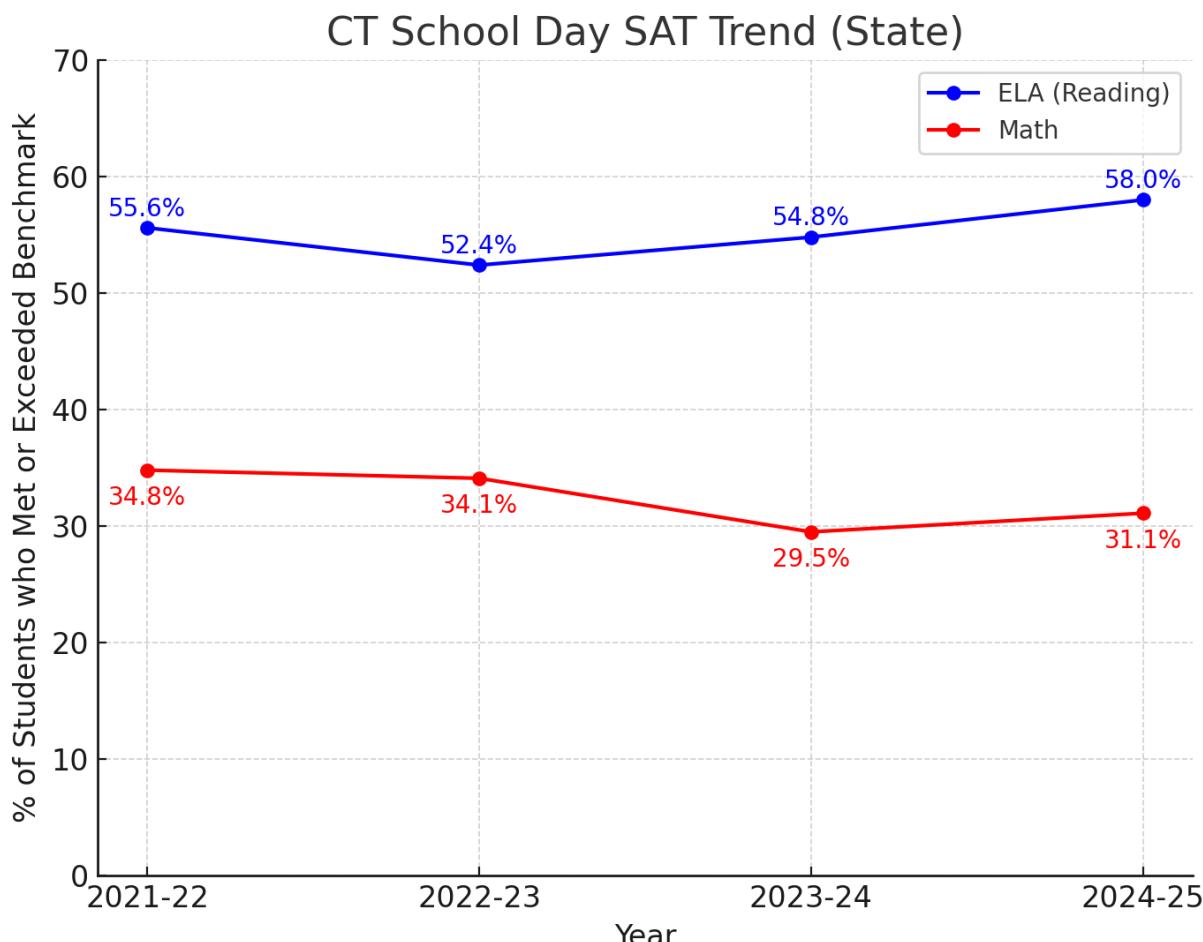
Why rethink high school math?

- Today's math still reflects 20th century priorities.
- The expectation do not serve all students.
- Student outcomes in CT reflect the disconnect.

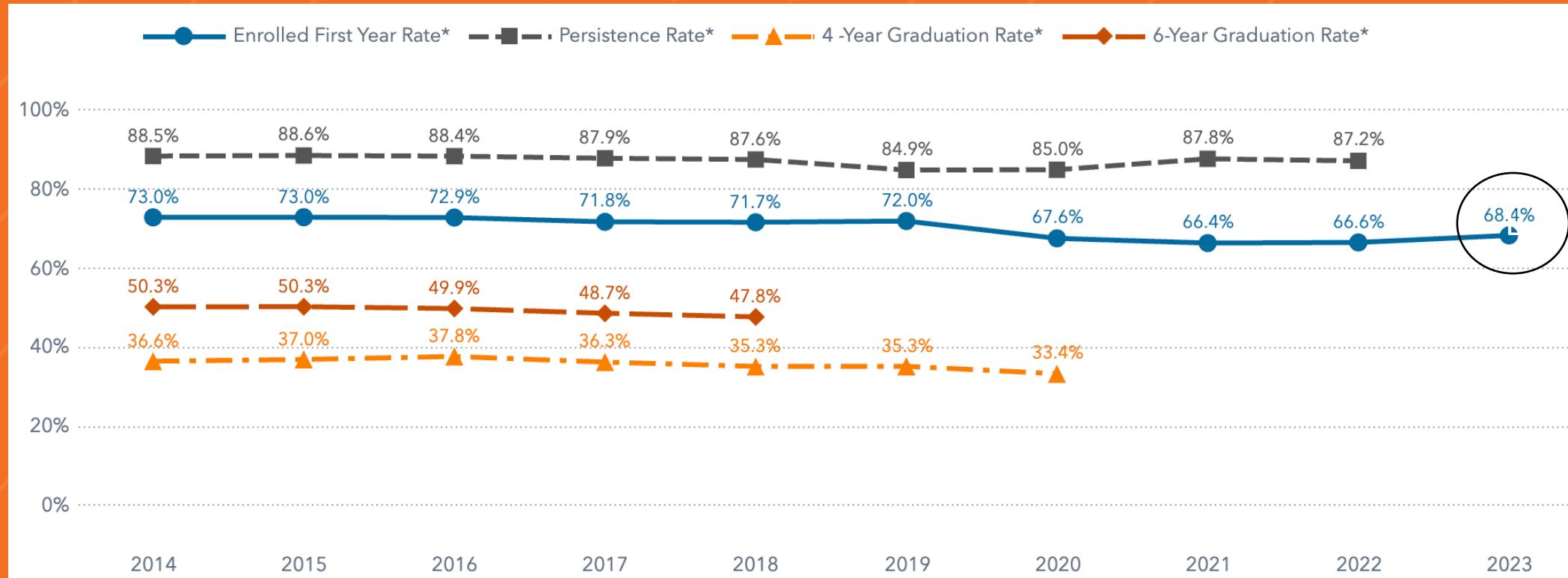
Only 22% of students earning bachelor's degrees pursue STEM careers.

NCES Report in PD Playlist

CT Now: SAT Math Performance



CT Now: Post -Secondary



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CT Now: State Math Requirements

High School Graduation Requirements

State law prescribes the minimum number of academic credits to be earned for high school graduation ([CGS § 10-221a](#)) as described in Table 3 below.

Table 3: High School Graduation Requirements

Subject	Number of Credits
Humanities	At least 9 credits, including civics and the arts
STEM (Science, Technology, Engineering, and Math)	At least 9 credits
Physical educational and wellness	At least 1 credit
Health and safety education	At least 1 credit
World languages	At least 1 credit
Mastery-based diploma assessment	1 credit
Total minimum credits required to graduate	25 credits

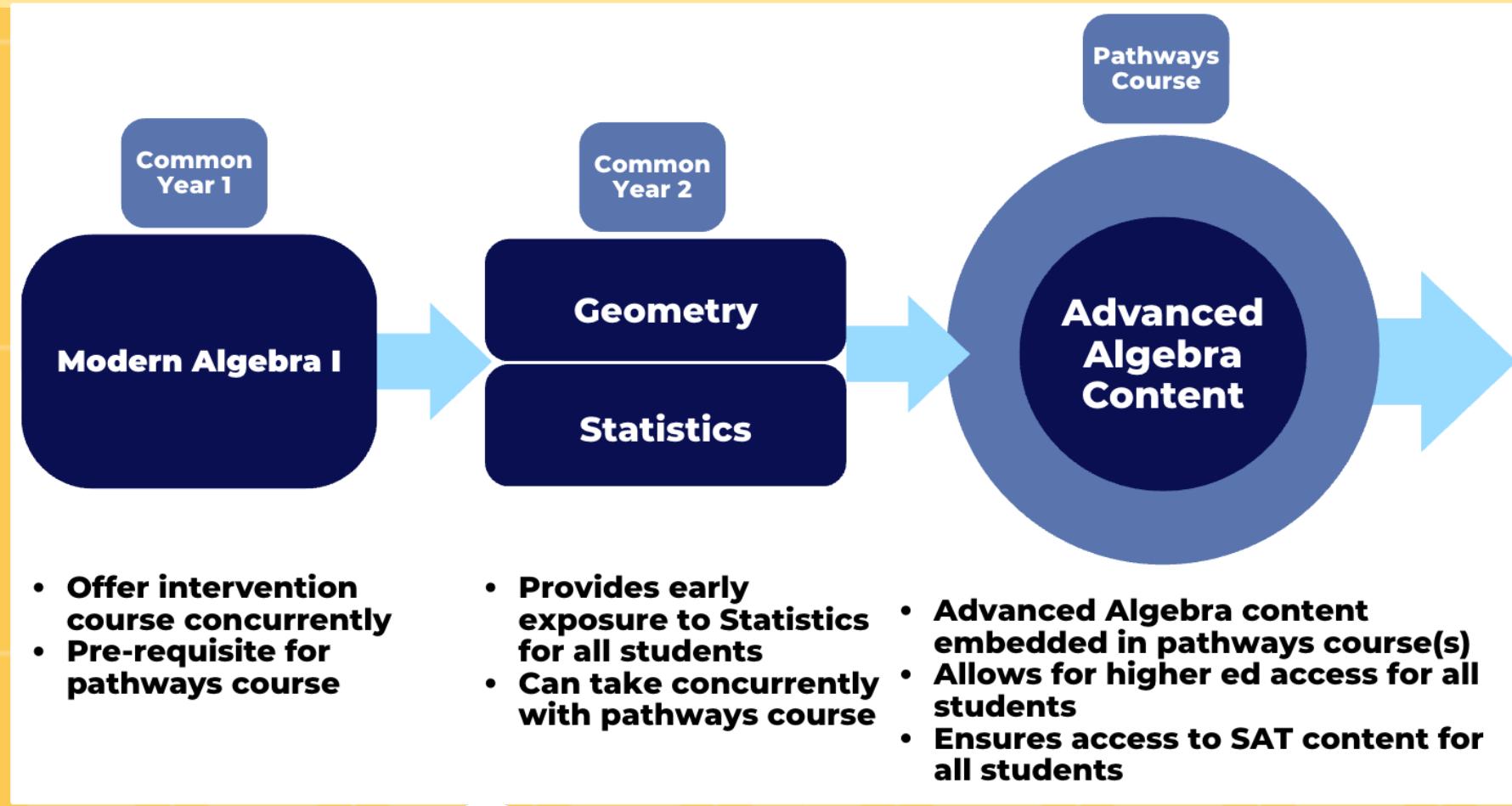


A National Movement

Connecticut is one of **28 states** participating in the **Launch Years Initiative**, a national effort led by the Dana Center at UT Austin to **modernize high school math** and its alignment to college and workforce needs. Other states are already leading this work:

- **Rhode Island** revised its Algebra 2 course to focus on essential standards, align with actual college expectations, and reduce unnecessary content.
- **Oregon, Ohio, and Idaho** are also redefining Algebra 2 by removing outdated topics and emphasizing modeling, data, and reasoning.
- **Maryland** is transitioning to a 2 +1 Integrated Algebra approach and embedding essential Geometry concepts in each course.

Our Vision for CT



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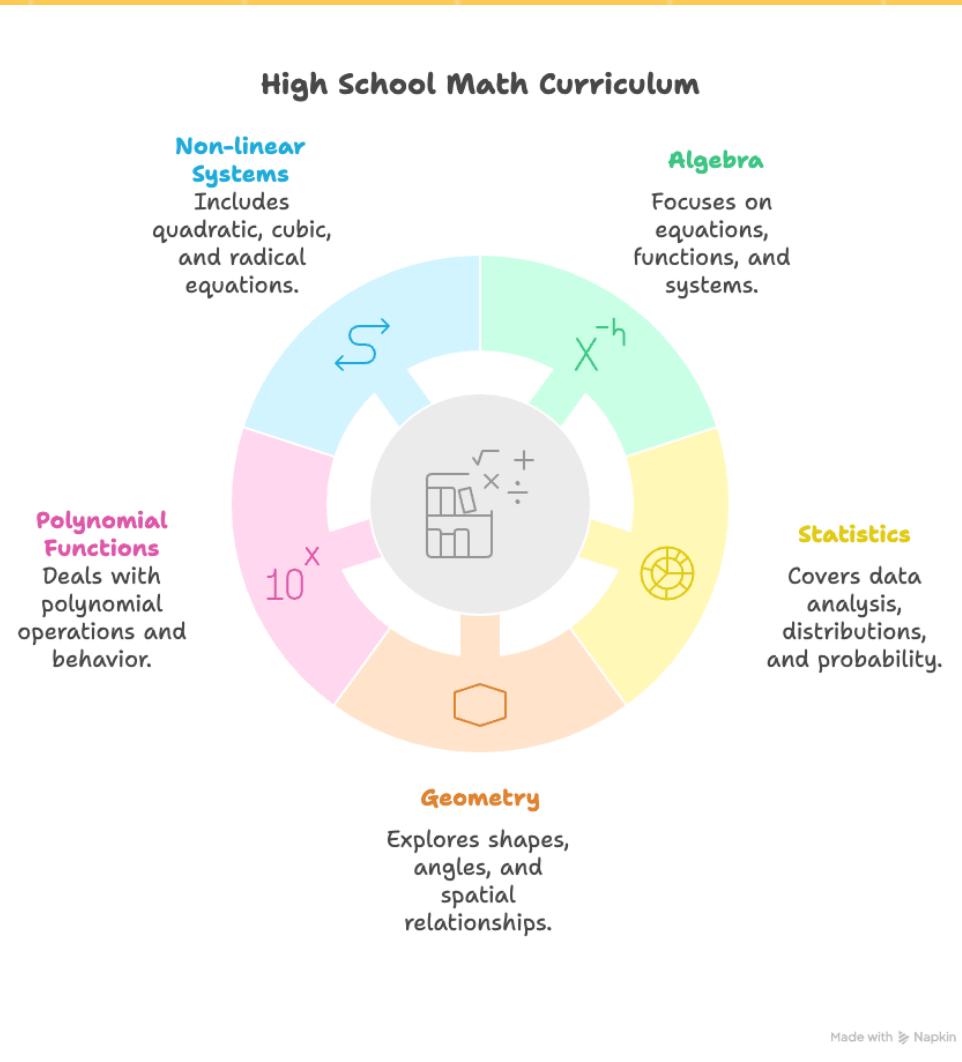


What does this look like?

[Link](#) to more
detailed description
of topics covered

Content removed from full
year Geometry may include:
• Proofs
• Circles

These topics can be moved to
other future elective math
courses.



 **Start Here**

1 Semester of Statistics for all students.
• Early exposure to different types of math.
• Helpful for SAT's



High School Mathematics Concepts

Modern Algebra 1	Statistics	Geometry	Advanced SAT/ACT Math Content
<p>Functions</p> <ul style="list-style-type: none"> Function Families Domain/Range Function Notation Transformations <p>Linear Equations</p> <ul style="list-style-type: none"> Multi-Step Solving Point-Slope Standard Form Modeling with Systems Regressions Interpretation <p>Exponential Functions</p> <ul style="list-style-type: none"> Growth/Decay Understanding Graphs <p>Quadratic Functions</p> <ul style="list-style-type: none"> Graphs Solving (All ways) Polynomial Operations Systems 	<p>Statistics - Semester 1</p> <p>Statistics</p> <ul style="list-style-type: none"> Mean, median, mode Analysis of data representation Box & whisker plots w/ 5 number summaries Histograms Normal Distribution Z-scores <p>Probability</p> <ul style="list-style-type: none"> Sample space Basic probability Visual representations - venn diagrams, tree diagrams, two-way tables Conditional probability Theoretical vs. Experimental Probability 	<p>Geometry - Semester 2</p> <p>Angle Relationships</p> <ul style="list-style-type: none"> Points, lines, planes - not explicitly. notation incorporated into questions. Segment addition Complementary, supplementary, right angles, angle addition, angle bisectors, linear pairs, vertical angles Classifying Triangles <p>Parallel Lines & Quadrilaterals</p> <ul style="list-style-type: none"> Parallel lines cut by a transversal Properties of quadrilaterals <p>Triangle Similarity & Right Triangles</p> <ul style="list-style-type: none"> Dilation, Triangle Similarity “postulates” Pythagorean theorem Special Right Triangles Right Triangle Trig <p>Volume</p> <ul style="list-style-type: none"> Review area formulas Basic Volume Composite Volume Some rotations 	<p>Polynomial Functions</p> <ul style="list-style-type: none"> Zeroes, roots, multiplicity, end behavior Composites <p>Non-linear Systems</p> <ul style="list-style-type: none"> In addition to linear equations, include quadratic, cubic, & radical equations Prioritize technology

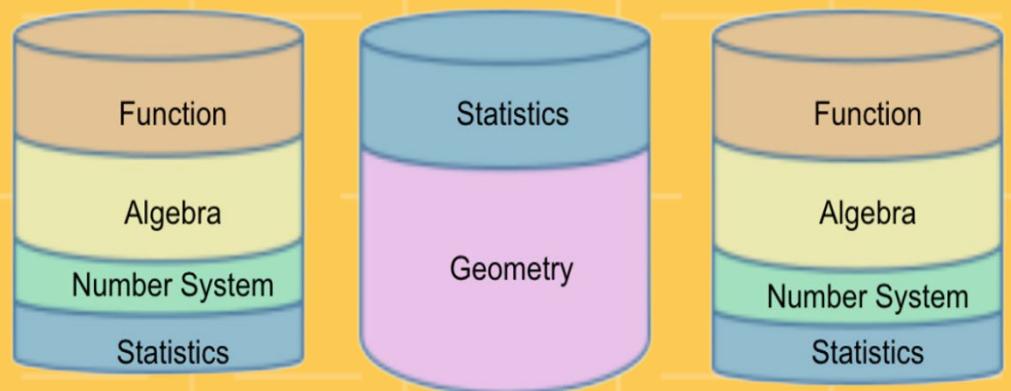
Each unit should include multiple representations - graphs, tables, and equations.

Each unit should support learning using current technology.



Multiple Possibilities

Traditional Distribution of Concepts

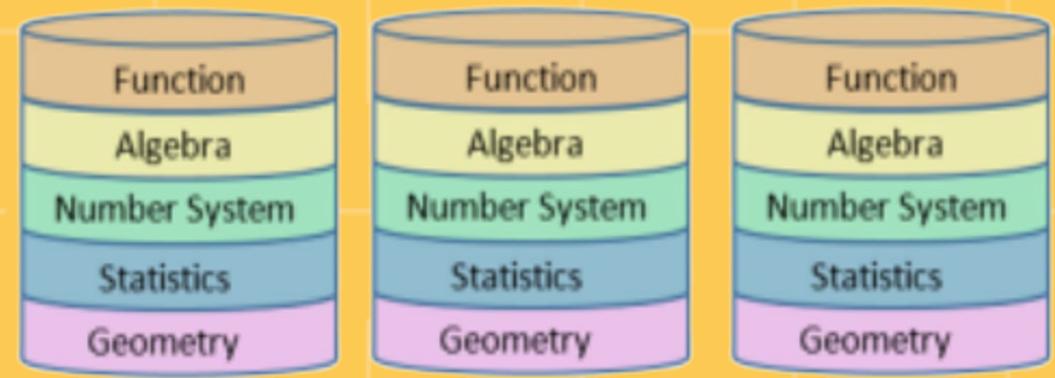


Algebra I

Geometry

Algebra II

Integrated Approach



Common
Year 1

Common
Year 2

Pathway
Course 1



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Example SAT Question

Question selected from the [College Board SAT Question Bank](#)

$$-x + y = -3.5$$

$$x + 3y = 9.5$$

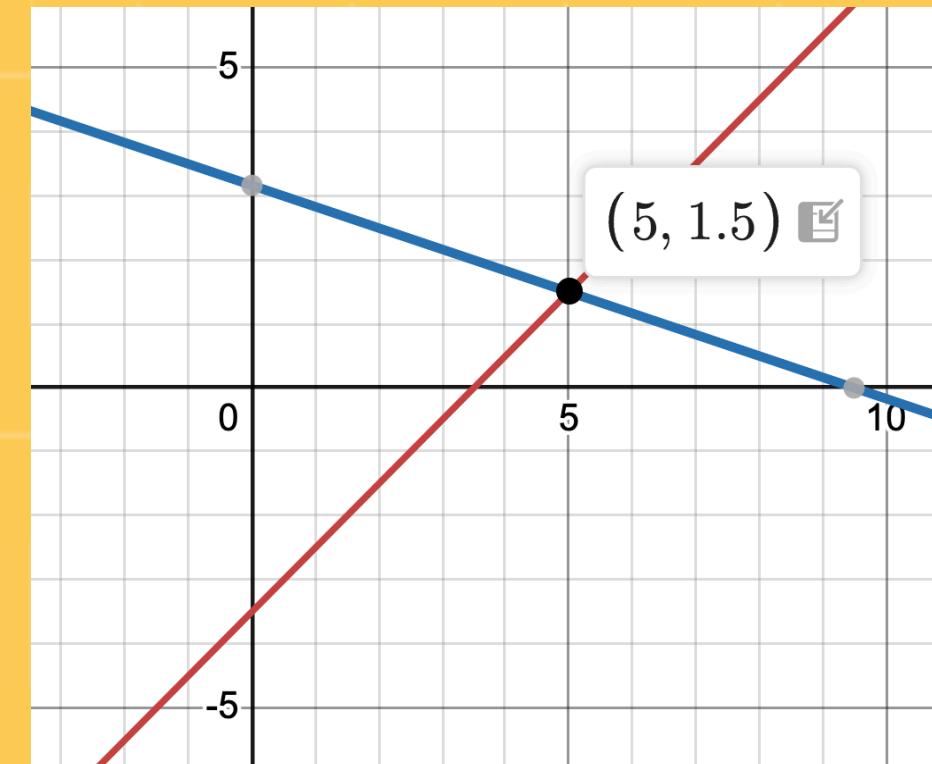
If (x,y) satisfies the system of equations above, what is the value of y ?



Example SAT Question – Modern Solution

- Sat Question directly from SAT

1	 $-x + y = -3.5$
2	 $x + 3y = 9.5$



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Example SAT Question – By-hand Solution

Step 1: Solve Equation (1) for x

From $-x + y = -3.5$:

$$\begin{aligned}-x &= -3.5 - \\x &= 3.5 + y\end{aligned}$$

Step 3: Solve for x

Use $x = 3.5 + y$:

$$x = 3.5 + 1.5 = 5$$

Step 2: Substitute into Equation (2)

Substitute $x = 3.5 + y$ into $x + 3y = 9.5$:

$$\begin{aligned}(3.5 + y) + 3y &= 9.5 \\3.5 + 4y &= 9.5\end{aligned}$$

$$x = 5, \quad y = 1.5$$

Subtract 3.5 from both sides:

$$\begin{aligned}4y &= 6 \\y &= \frac{6}{4} = 1.5\end{aligned}$$

Final Answer:



Exploring Next Steps

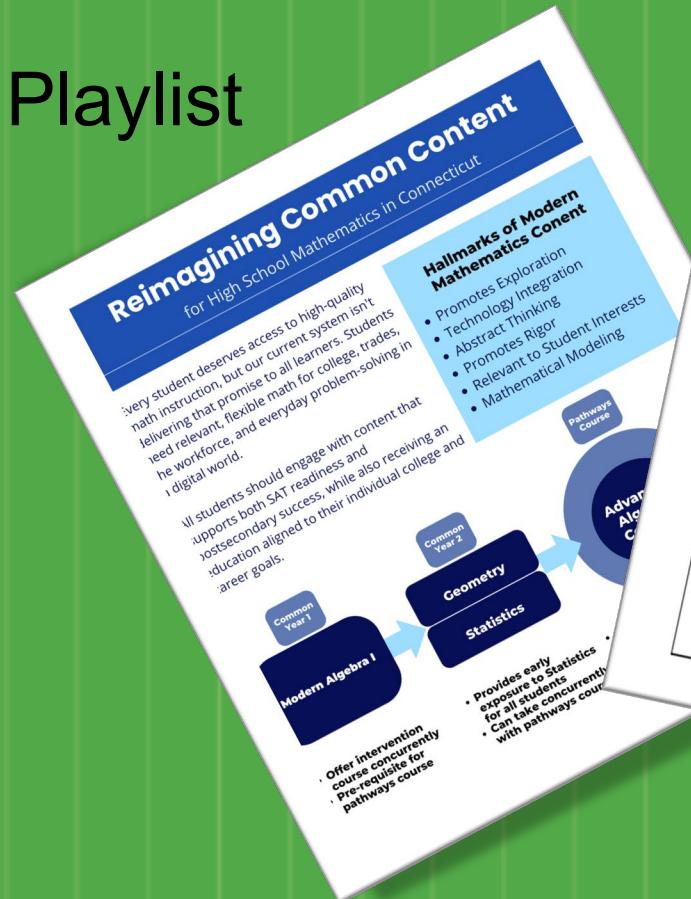
- How does your school's current math scope and sequence already support these recommendations?
- What challenges might your school face?
- How might your school(s) work to coordinate with local industry or institutions of higher education to identify mathematics content for your students after high school?



For More Information

Common High School Content Fast Facts

Common High School PD Playlist



TITLE: Reimagining Common High School Content

Directions: Explore resources, read one article, watch one video, and listen to a recording of your choice from the list below. Feel free to go big and read them all to support planning, learning, and teaching.

READ
Read one or more articles

- [Equity in Mathematics Education: A Joint Position Statement for Connecticut](#)
- [Adopted by Connecticut State Board of Education \(2023\)](#)
- [Required Public School Program of Study – Office of Legislative Research; Research Report \(2022\)](#)

WATCH
Watch one or more videos

- [Modernizing Math Curriculum: Michael Pearson and the Launch Years Initiative](#)
Length (00:04:06)

LISTEN
Listen to one or more recordings/podcasts

- [Make Math Moments Episode #327: High School Mathematics Reimagined, Revitalized, and Relevant: An Interview with Two NCTM presidents](#)
Length (00:31:53)

EXPLORE
Explore additional resources used in the field

- [Ohio SAT Content Guidance Document for Educators and Families](#)
- [CT Required Public School Program of Study](#)
- [Other State Examples - Common Math Content for High School](#) - all links included below are described in this document.
 - [RI Launch Years Initiative Working Group Background](#)
 - [RI Changes to Algebra 2 and Model Mathematics Courses](#)
 - [MD Updated PK-12 Mathematics Policy Press Coverage](#)
 - [MD Blueprint For Maryland's Future](#)
 - [MD Blueprint Pillar 3: College and Career Readiness](#)
 - [MD College and Career Readiness Standards](#)
 - [MD Example - Montgomery County messaging to families Supporting Your Child in High School Mathematics](#)
 - [OR - Oregon Math Project Overview](#)
 - [OR High School Mathematics Grade Level Guidance](#)
 - [ID-12 Math Course Planning Guide - Suggestion to explore chart of expectations](#)



The Next From Foundations to Futures: Series on Readiness, Access, and Alignment

A PD

NEXT

