

# K-12 Math Progression Review

Granby Board of Education Curriculum Sub-Committee  
April 7, 2021

## Current Model

	Grades K-4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9+
95-99% of students	Grade level standards	Grade level standards	Grade 6 standards plus a few Grade 7 standards if time	Grade 7 standards and all Grade 8 non-Algebra standards	Algebra I OR Algebra IA	Geometry H OR Geometry OR Algebra I OR Algebra IB
1-5% of students		Grade level standards OR Doubled up with Grade 6	Grade 7 standards and all Grade 8 standards non-Algebra standards	Algebra I	Geometry H	Algebra II H

# Where are we?

- District adopted “Algebra for All” prior to move to Common Core and Smarter Balanced
  - Students currently complete Algebra 1 by the end of 9th grade
  - Grade level common core standards not adequately addressed in each grade 6-8
- Common Core adopted 2012-13, Smarter Balanced testing began in 2015-16
- Curriculum updates had been more crosswalking than revisions prior to 2020
- Inconsistent use and regular supplementing of core resource - Eureka
- Pandemic instruction has required prioritization

# Assessment Key

Assessment	Purpose	Measure	Frequency
Smarter Balanced Assessment	High-stakes Summative State Assessment	Common Core Standards	Yearly in Grades 3-8
SAT	High-stakes Summative State Assessment	College Board	Grade 11
STAR	Universal Screening Predictive SBA Growth	National Percentile Predictive Growth	3 times a year in Grades K-8

# Smarter Balanced Scores

	2016-17		2017-18		2018-19	
Grade	Percentage Level 3 or 4 (Met or Exceeded)%	Average VSS	Percentage Level 3 or 4 (Met or Exceeded)%	Average VSS	Percentage Level 3 or 4 (Met or Exceeded)%	Average VSS
3	60.6	2456	60.7	2460	68.3	2473
4	62.3	2506	68.4	2507	65.8	2514
5	60.9	2543	55.7	2537	62.7	2547
6	64.8	2568	64.7	2582	56.2	2557
7	66.2	2600	59.8	2588	72.5	2610
8	60.5	2608	65.8	2618	52.5	2593

# SAT

Year	Percentage Level 3 (Meets) or 4 (Exceeds)	Average Score
2015-16	62.9	555
2016-17	70	573
2017-18	57.1	549
2018-19	61.9	551

District	Test Takers	Total Score	EBRW	Math
Avon	228	1197	594	602
Madison	282	1175	590	586
Simsbury	363	1175	592	583
Glastonbury	499	1174	584	590
Greenwich	685	1170	586	584
Farmington	297	1169	588	581
Guilford	280	1164	588	575
Newtown	410	1158	580	578
Fairfield	727	1149	575	574
Region 5	365	1145	577	568
Cheshire	335	1144	579	565
Trumbull	480	1139	570	569
Region 15	317	1138	566	572
Monroe	226	1135	569	566
Granby	160	1135	576	558
West Hartford	702	1131	571	560
South Windsor	321	1121	562	559
Brookfield	193	1111	557	553
New Fairfield	190	1079	551	528

# STAR 2019-20

	Fall		Winter	
	Universal Screen (Percentile) 50%ile +	Smarter Balance Predictive 3 (Meets) & 4 (Exceeds)	Universal Screen (Percentile) 50%ile +	Smarter Balance Predictive 3 (Meets) & 4 (Exceeds)
2	40%	33%	66%	48%
3	53%	34%	71%	47%
4	57%	38%	78%	53%
5	65%	36%	72%	37%
6	48%	33%	58%	39%
7	52%	38%	57%	44%
8	Algebra			

## Where are we? (continued...)

- Summer 2020 started curriculum work K-12 with a “standards first” focus
- Weekly meetings with coaches and curriculum team
- Need to find a more aligned core resource
- Researching other districts
- Work with CREC consultants

# Where do we need to go?

- Realignment of middle school progression
- Continue to write curriculum with a “standards first” approach
- Pilot core resources
- Monitor data
- Gather input and feedback

# Realigned Progression

	<i>Applied Pathway</i>	<i>Preparatory Pathway</i>	<i>STEM Pathway</i>
<i>6th Grade</i>	<b>Grade 6 CCSS</b>		<b>Accelerated Grade 6/7 CCSS</b>
<i>7th Grade</i>	<b>Grade 7 CCSS</b>		<b>Accelerated Grade 7/8 CCSS</b>
<i>8th Grade</i>	<b>Grade 8 CCSS</b>		<b>Algebra</b>
<i>9th Grade</i>	<b>Algebra Concepts</b>	<b>Algebra</b>	Geometry H
<i>10th Grade</i>	Geometry Applications	Geometry A/H	Algebra II H
<i>11th Grade</i>	Advanced Algebra Concepts	Algebra II A/H	Pre-Calculus H
<i>12th Grade</i>	Mathematical Applications	Pre-Calculus A/H	Calculus H/AP AB or BC
<i>Electives/ Alternatives</i>	Introduction to Statistics/AP Statistics AP Computer Science Principles/AP Computer Science A Intervention Supports		

# Enrichment Model

- Current 5th grade acceleration model condenses 4 years of learning into 2 and serves 1-5% of students
- Proposed 6th grade acceleration model condenses 3 years of learning into 2 and would serve about 20% of students
- High achievers would still have access to enrichment coach at elementary school on a unit based level
- Gifted math students could be referred for individualized programming
- End point is the same, more depth on foundational standards
- Rising 5th, 6th & 7th graders would continue their progression

# What are priorities?

- ★ Acceleration based on readiness
- ★ Mastery of grade level standards
  - ★ Math practices
  - ★ Engagement
- ★ Problem-based learning
- ★ Student-centered instruction
- ★ Conceptual understanding
  - ★ Hands-on
- ★ Technology components

# Core Resource Exploration

K-5:

Why IM?

Bridges

Illustrative Math (2021-22)

6-8:

Math in Focus

Illustrative Math

- **Highly-rated:** According to EdReports, an independent nonprofit that reviews K–12 instructional materials, IM 6–8 Math™ and IM 9–12 Math™ certified by Illustrative Mathematics® meet all expectations across all three gateways for focus, coherence, rigor, mathematical practices, and usability. K–5 reports coming soon.
- **Grounded in best practices for effective mathematics education:** Our programs are rooted in well-respected pedagogy and methodology to form a rigorous, standards-aligned curriculum.
- **Expert authoring team:** Read more about the educators and mathematicians who developed our curricula and professional learning: [K-5](#), [6-8](#), [9-12](#).
- **Full-service experience:** By combining the curricula with IM Certified Facilitator-led professional learning and an active online community provides educators with 24/7 support, districts receive support at every level to create effective mathematics classrooms. (CREC)
- **Open Sourced**

## Middle School

Teach and Learn	Teach and Respond	Virtuals	District Support	Other districts
Botelle School	CREC (Two Rivers)	Pomfret	New Britain	Danbury
Rocky Hill	Watertown	Canton	Bristol	CES
Canaan	Portland	Norfolk	Rocky Hill	Norwalk
Stafford	Willington	Salisbury	Willington	Wilton
CREC	Suffield	New Britain	The Gilbert School	Region 4
Southington	Berlin	New Hartford	East Hartford	ACES
East Hartford	Wallingford	Jumoke	Southington	Manchester
Stratford	The Gilbert School	Colebrook	Clinton	Guilford
Colebrook	Region 6	Region 1	Region 16	Middletown
South Windsor	Suffield	Thomaston	Tolland	Vernon
Norfolk		Seymour	Region 10	Derby
New Britain		Canton	The Bridge Academy Charter School	Waterford
Region 13		Essex		North Branford
Bolton		The Gilbert School		
Bristol		Leland & Gray Union		
Region 18		East Granby		
Chester		Berlin		
Deep River				
Essex				
East Granby				

***Research-driven, problem-based curriculum.***

In a problem-based curriculum, students work on carefully crafted and sequenced mathematics problems during most of the instructional time. Teachers help students understand the problems and guide discussions to be sure that the mathematical takeaways are clear to all. In the process, students explain their ideas and reasoning and learn to communicate mathematical ideas. The goal is to give students just enough background and tools to solve initial problems successfully, and then set them to increasingly sophisticated problems as their expertise increases.

Mathematics is not a spectator sport. The value of a problem-based approach is that students spend most of their time in math class doing mathematics: making sense of problems, estimating, trying different approaches, selecting and using appropriate tools, and evaluating the reasonableness of their answers. They go on to interpret the significance of their answers, noticing patterns and making generalizations, explaining their reasoning verbally and in writing, listening to the reasoning of others, and building their understanding.



**GRADE  
LEVEL**

**FOCUS &  
COHERENCE**

**RIGOR &  
MATHEMATICAL  
PRACTICES**

**ALIGNMENT RATING**

**USABILITY RATING**

Sixth Grade

14/14

18/18

Meets Expectations

38/38

Seventh Grade

14/14

18/18

Meets Expectations

38/38

Eighth Grade

14/14

18/18

Meets Expectations

38/38

<https://www.edreports.org/compare/results/math-k-8>

<https://illustrativemathematics.org/>

## Work of 2021-22

- Curriculum writing and piloting of Illustrative Math and acceleration model 6-8
- Consider/pilot resources for K-5 and Algebra/Geometry
- Reassess and evaluate 11th/12th grade options before rewriting or adopting resources in 2022-23