

**Instructional Guide**  
**Algebra Full Year - Mathematics**  
**September 2022 through January 2023**

## Algebra Full Year Overview

Module	Standards
M1: Relationships Between Quantities and Reasoning with Equations and Their Graphs	N-Q.1, N-Q.2, N-Q.3, A-SSE.1a, A-SSE.1b, A-SSE.2, A-APR.1 A-CED.1, A-CED.2, A-CED.3, A-CED.4, A-REI.1, A-REI.3, A-REI.5, A-REI.6, A-REI.10, A-REI.12
M2: Descriptive Statistics	S-ID.1, S-ID.2, S-ID.3, S-ID.5, S-ID.6, S-ID.6a, S-ID.6b, S-ID.6c, S-ID.7, S-ID.8, S-ID.9
M3: Linear and Exponential Functions Module	A-REI.11, A.-SSE.3c, A-CED.1, F-BF.1a, F-IF.1, F-IF.2, F-IF.3, F-IF.4, F-IF.5, F-IF.6, F-IF.7a, F-IF.9, F-BF.3, F-LE.1, F-LE.1a, F-LE.1b, F-LE.1c, F-LE.2, F-LE.3, F-LE.5
M4: Polynomial and Quadratic Expressions, Equations and Functions Module	N-RN.3, A-SSE.1a, b, A-SSE.2, A-SSE.3a, b, A-APR.1, A-APR.3, A-CED.1, A-CED.2, A-REI.4, A-REI.4a, A-REI.4b, A-REI.11, F-BF.3, F-IF.4, F-IF.5, F-IF.6, F-IF.7a, F-IF.7b, F-IF.8a, F-IF.9
M5: A Synthesis of Modeling with Equations and Functions	N-Q.2, N-Q.3, A-CED.1, A-CED.2, F-IF.4, F-IF.5, F-IF.6, F-BF.1a, F-BF.3, F-LE.1, F-LE.1b, F-LE.1c, F-LE.2
Exam Review	Regents Exam <b>June 15, 2023 PM</b>

*See PAGE 4 for your September to January PACING*

## 9-12 MATHEMATICS - DIGITAL RESOURCES

	Moby Max	IXL
<b>Purpose</b>	Moby Max is designed to find and fix learning gaps using the power of personalized learning.	IXL is a targeted learning tool used to provide personalized action plans and links related to the academic progress and areas of need for each student.
<b>District Expectations</b>	<p>Every student will take the Moby Max</p> <p>Moby Max will be used to provide intervention in the areas where individual students are struggling.</p> <p>Moby Max may also be used to support grade level instruction.</p> <p>Moby Max covers content only through grade 8</p>	<p>IXL will be used as a district benchmark for all high school math courses <u>and</u> grade 8 Algebra during three identified testing windows: BOY (diagnostic), MOY (snapshot) and EOY (snapshot).</p> <p>Students must also work in IXL diagnostic arena for 10 minutes <u>each week</u> in order to keep their levels and recommendations up to date.</p>
<b>Available supports/webinars</b>	<a href="https://vimeo.com/mobymax">https://vimeo.com/mobymax</a>	<a href="https://www.ixl.com/userguides">https://www.ixl.com/userguides</a>

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## IMPORTANT Module 1 Notes:

Based on the **Next Generation Math Standards (to be implemented SY23-24)**, please keep the following upcoming changes in mind, as you teach this Module:

- Operations with Radicals were added
- Solving Linear/Quadratic Systems was added
- Factoring quadratics has been limited to trinomials with a leading coefficient of 1 after a GCF has been factored
- Complete the square has been limited to a leading coefficient of 1 and an even “b” term
- Residuals have been moved to a Plus Standard
- Sequences will be limited to explicit forms only and will be written in subscript notation

### Module 1 Vocabulary

Algebraic expression	Numeric expression	Degree of a polynomial	Linear Function
Equivalent algebraic expressions	Equivalent numerical expressions	Standard form of a polynomial	Quadratic Function
Constant term	Solution, Solution Set	Leading term/Leading coefficient	Exponential Function
Polynomial expression	Equation: Equality, Inequality	Monomial, Binomial, Trinomial	Piecewise linear function
Variable symbol	Zero product property		Graph of an equation in two variables

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## IMPORTANT Module 2 Notes:

Based on the **Next Generation Math Standards (to be implemented SY23-24)**, please keep the following upcoming changes in mind, as you teach this Module:

- Operations with Radicals were added
- Solving Linear/Quadratic Systems was added
- Factoring quadratics has been limited to trinomials with a leading coefficient of 1 after a GCF has been factored
- Complete the square has been limited to a leading coefficient of 1 and an even “b” term
- Residuals have been moved to a Plus Standard
- Sequences will be limited to explicit forms only and will be written in subscript notation

Module 2 Vocabulary			
Association	Relative Frequency	Correlation coefficient	Interquartile range
Outlier	Conditional Relative Frequency	Residual plot	Sample standard deviation
Skewed data distribution	Residual	Spread	Range

Familiar Terms			
Box plot, Dot Plot	Data distribution	Variability	Histogram
Mean, Median, Mode	Residual plot	Mean absolute deviation	Quartile

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***PACING Plan for September 2022 – January 2023***

**Algebra Full Year**

Quarter 1 - weeks	Quarter 1 - dates	Sept - Jan PACING	Instructional Notes
Week 1	9/6 - 9/9		
Week 2	9/12 - 9/16	M1: Lesson 4, 6, 7 IXL - Diagnostic begins	OMIT lesson 1, 2, 3, & 5: M1 L1 will be combined in M3 L15; M1 L2 will be combined with M4 L9; M1 L3 combined with M3 L5; M1 L5 embed in M1 L22-23(Systems) and M3 L15 piecewise functions
Week 3	9/19 - 9/23	M1: Lesson 8, 9	Include a review of Properties of Real Numbers - Lessons 6 & 7, page 24 - use an area model, page 27 - properties applied to a flow chart OMIT lesson 10
<b>IXL BOY/SNAPSHOT WINDOW (9/26-10/7)</b>			
Week 4	9/26 - 9/30	M1: Lesson 11, 12	Lesson 11-19 be sure to build a solid base of solving linear equations that uses properties of real numbers and creates a foundation for solving systems of linear equations by substitution and elimination; include one step, two step, multi-step, and variables on both sides.
Week 5	10/3 - 10/7	M1: Lesson 13, 14	Mid Module Assessment
Week 6	10/11 -10/14	M1: Lesson 15, 16	
Week 7	10/17 - 10/21	M1: Lesson 18, 19	OMIT lesson 17 Zero Product Property will be merged with M4 L5 (same standard)

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Week 8	10/24 - 10/28	M1: Lesson 20	Pre-Req Knowledge: G8 M6: Lesson 1- 5 8.F.4 & 5 learning how to graph linear functions, a review of graphing linear equations is necessary as it may have been missed in the spring
Week 9	10/31 - 11/4	M1: Lesson 21 & 22	Graphing systems of inequalities
Week 10	11/7 - 11/10	M1: Lesson 23	Graphing systems of equations
<b>Quarter 2 - weeks</b>	<b>Quarter 2 - dates</b>	<b>Sept - Jan PACING</b>	<b>Instructional Notes</b>
Week 11	11/14 – 11/18	M1: Lesson 24	Be sure to include Regents examples
Week 12	11/21 – 11/23	M1: Lesson 25	OMIT lesson 26, 27, 28 - or use as extensions of knowledge End of Module Assessment for Module 1
Week 13	11/28 – 12/2	M2: Lesson 1, 2/3	From lesson 3 use only exercises 8-20; focus on the meaning of the center and spread of data sets
Week 14	12/5 – 12/9	M2: Lesson 4, 6	OMIT lesson 5
<b>IXL MOY/SNAPSHOT WINDOW (12/12-12/23)</b>			
Week 15	12/12 – 12/16	M2: Lesson 7 & 8	

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Week 16	12/19 – 12/23	M2: Lessons 9 & 10	Mid Module Assessment OMIT lesson 11 or it can be used as an extension
Week 17	1/3 – 1/6	M2: Lesson 12, 13	Use 1-2 days to Review M2 topics prior Holiday break
Week 18	1/9 – 1/13	M2: Lesson 14, 15/16, 17	Combine lessons 15 & 16, in lesson 15 use exercises 1-5
Week 19	1/17 – 1/20	M2: Lesson 18, 19	OMIT lesson 20 End of Module Assessment for Module 2
Week 20	1/23 – 1/27	M1: Lesson 3	Utilize M1 Lesson 3 exploratory challenge & video to introduce exponential functions  Regents Week- Tues. 1/24 through Fri. 1/27