Instructional Guide
Algebra Year 2 of 2 – Mathematics
September 2022 through January 2023

Algebra Year 2 of 2 Overview

Module	**Standards**
M3: Linear and Exponential Functions	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	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
M5: A Synthesis of Modeling with Equations and Functions	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
Exam Review	Regents Exam **June 2023**

See PAGE 7 for your September to January PACING

9-12 MATHEMATICS - DIGITAL RESOURCES

	Moby Max	IXL
Purpose	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.
District Expectations	Every student will take the Moby Max Moby Max will be used to provide intervention in the areas where individual students are struggling. Moby Max may also be used to support grade level instruction. Moby Max covers content only through grade 8	IXL will be used as a district benchmark for all high school math courses and grade 8 Algebra during three identified testing windows: BOY (diagnostic), MOY (snapshot) and EOY (snapshot). Students must also work in IXL diagnostic arena for 10 minutes each week in order to keep their levels and recommendations up to date.
Available supports/ webinars	*https://vimeo.com/mobymax*	https://www.ixl.com/userguides

IMPORTANT Module 3 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 3 Vocabulary			
Arithmetic sequence	Common ratio	Common difference	Continuous
Discrete	Domain	Explicit	Exponential decay
Exponential function	Exponential growth	Fibonacci Sequence	Function
Function notation	Geometric sequence	Infinitely many solutions	Mapping
No solution	One solution	Parent function	Range
Recursive	Relation	Vertical line test	

IMPORTANT Module 4 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 4 Vocabulary			
Axis of symmetry of the graph of a quadratic function	Cube root function	Cubic function	Degree of a monomial term
Degree of a polynomial	Discriminant	End behavior of a quadratic function	Factored form for a quadratic function
Leading coefficient	Parent function	Quadratic formula	Quadratic function
Roots of a polynomial function	Square root function	Standard form for a quadratic function	Standard form of a polynomial in one variable
Vertex form	Vertex of the graph of a quadratic function		

Module 4 Familiar Terms			
Average rate of change	Binomial	Closed	Closure
Coefficient	Cubic	Cube root	Degree of a polynomial
Domain and range	Explicit expression	Factor	Integers
Irrational numbers	Monomial	Parabola	Power
Quadratic	Rational numbers	Real numbers	Recursive process
Solutions (solution set) of an equation	Solution set	Square root	Term
Trinomial	Zeros of a function		

PACING Plan for September 2022 – January 2023

Algebra Year 2 of 2

Quarter 1 - weeks	Quarter 1 - dates	Sept - Jan PACING	Instructional Notes
Week 1	9/6-9/9		
Week 2	9/12 - 9/16	M2: L1: Distributions and Their Shapes, L3: Estimating Centers L5: Measuring Variability for Symmetrical Distributions	Include a review of the measures of central tendency from 8th grade M2 L2 & 4 can be embedded into lessons 3 & 5 - focus on the interpretation of center
Week 3	9/19 - 9/23	M2: L7 & 8: Measuring Variability for Symmetrical Distributions and Skewed Distributions & Comparing Distributions	M2 L6 can be embedded into lessons 7 & 8 Mid-Module Assessment
IXL BOY/SNAPSHOT WINDOW (9/26-10/7)			
Week 4	9/26 - 9/30	M2: L10: Summarizing Bivariate Data, L12 & 13: Relationships Between Two Numerical Values	M2 L9 can be embedded into L10
Week 5	10/3 - 10/7	M2: L14: Modeling Relationships with a Line	

Week 6	10/11 -10/14	M2: L17-19: Analyzing Residuals & Interpreting Correlation	M2 L15 & 16 can be embedded in L17-19
Week 7	10/17 - 10/21	M3: L1: Integer Sequences, L2: Recursive Formulas for Sequences	M2 End of Module Assessment
Week 8	10/24 - 10/28	M3: L3: Arithmetic & Geometric Sequences L4: Why do Banks Pay YOU? L5: The Power of Exponential Growth	
Week 9	10/31 - 11/4	M3: L6 & 7: Exponential Growth & Decay L8: Why Stay with Whole Numbers?	
Week 10	11/7 - 11/10	M3: L9 & 10: Representing, Naming, & Evaluating Functions L11: The Graph of a Function	

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Quarter 2 - weeks	Quarter 2 - dates	Sept - Jan PACING	Instructional Notes
Week 11	11/14 – 11/18	M3: L12: The Graph of the Equation y=f(x), L13: Interpreting the Graph of a Function L14: Linear & Exponential Models	
Week 12	11/21 – 11/23	M3: L15: Piecewise Functions, L16: Graphs Can Solve Equations Too	
Week 13	11/28 – 12/2	M3: L17-18: Four Interesting Transformations of Functions	
Week 14	12/5 - 12/9	M3: L19-21: Comparing Linear & Exponential Models	
IXL MOY/SNAPSHOT WINDOW (12/12-12/23)			
Week 15	12/12 - 12/16	M3: L22: Modeling an Invasive Species Population L23: Newton's Law of Cooling L24: Piecewise & Step Functions in Context	
Week 16	12/19 - 12/23	M3: Review & End of Module Assessment	
Week 17	1/3 - 1/6	M4: L1: Multiplying and Factoring Polynomial Expressions L2: Multiplying and Factoring Polynomial Expressions	

Week 18	1/19 - 1/13	M4: L3: Advanced Factoring Strategies for Quadratic Expressions L4: Advanced Factoring Strategies for Quadratic Expressions	
Week 19	1/17 - 1/20	M4: L5: The Zero Product Property L6: Solving Basic One-Variable Quadratic Equations	
Week 20	1/23 - 1/27	Regents Week	