Instructional Guide
Algebra Year 2 of 2 – Mathematics
January 2023 through June 2023

Algebra Year 2 of 2 Overview

Module	Standards
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 June 2023

See PAGE 5 for your January to June 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

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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**		

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Familiar Terms			
Average Rate of Change	Binomial	Coefficient Leading Coefficient	Closed
Closure	Cube root	Cubic	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	Square Root	Trinomial	

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IMPORTANT Module 5 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 5 Vocabulary			
Analytic Model	**Descriptive Model**		

Familiar Terms			
Average rate of change	**Arithmetic & Geometric Sequences**	**Cube Root Function**	**Cubic Function**
Domain & Range	**End Behavior**	**Exponential Function**	**First Differences**
Function Transformations	**Linear Function**	**Parent Function**	**Piecewise Defined Function**
Quadratic Function	**Recursive process**	**Second Differences**	**Square Root Function**

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PACING Plan for January 2023 – June 2023

Please note that there will be times throughout the YEAR when you will either be embedding lessons from the previous grade level, omitting lessons at this grade level, and/or combining lessons at this grade level. This is all to ensure that our students have the foundational and grade level conceptual understanding to progress masterfully as the standards outline.

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Quarter 3 – weeks	Quarter 3 – dates	January – June PACING	Instructional Notes
Week 21	1/30 – 2/3	M4: L7: Creating and Solving Quadratic Equations in One Variable L8: Exploring the Symmetry in Graphs of Quadratic Functions L9: Graphing Quadratic Functions from Factored Form, $\boldsymbol{f(x) = a(x - m)(x - n)}$	
Week 22	2/6 – 2/10	M4: L10: Interpreting Quadratic Functions from Graphs and Tables Review and Assessment	Mid-Module
Week 23	2/13 – 2/17	M4: L11: Completing the Square L12: Completing the Square L13: Solving Quadratic Equations by Completing the Square	Mid-Winter Recess next week
Week 24	2/27 – 3/3	M4: L14: Deriving the Quadratic Formula L15: Using the Quadratic Formula	
Week 25	3/6 – 3/10	M4: L16: Graphing Quadratic Equations from the Vertex Form, $y=a(x-h)^2+k$ L17: Graphing Quadratic Functions from the Standard Form, $f(x)=ax^2+bx+c$	
Week 26	3/13 – 3/17	M4: L18: Graphing Cubic, Square Root, and Cube Root Functions L19: Translating Functions L20: Stretching and Shrinking Graphs of Functions	
Week 27	3/20 – 3/24	M4: L21: Transformations of the Quadratic Parent Function, $f(x)=x^2$ L22: Comparing Quadratic, Square Root, and Cube Root Functions Represented in Different Ways	

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Week 28	3/27 – 3/31	M4: L23: Modeling with Quadratic Functions L24: Modeling with Quadratic Functions	Spring Recess next week
Week 29	4/10 – 4/14	M4: Review & Assessment	End of Module
Week 30	4/17 – 4/21	M5: L1: Analyzing a Graph L2: Analyzing a Data Set	
Quarter 4 - weeks	**Quarter 4 – dates**	**January - June PACING**	**Instructional Notes**
Week 31	4/24 – 4/28	M5: L3: Analyzing a Verbal Description L4: Modeling a Context from a Graph	3.5 Instructional days (ERD &SCD)
IXL EOY Screener (5/1 – 5/17)			
Week 32	5/1 – 5/5	M5: L5: Modeling from a Sequence L6: Modeling a Context from Data L7: Modeling a Context from Data	
Week 33	5/8 – 5/12	M5: L8: Modeling a Context from a Verbal Description L9: Modeling a Context from a Verbal Description	3.5 Instructional days (ERD &SCD)
Week 34	5/15 – 5/19	M5: Review and Assessment	End of Module
Week 35	5/22 – 5/26	Review For Exam	Use jmap.org for Regents exams & questions by topic or standard.
Week 36	5/30 – 6/2	Review For Exam	Use jmap.org for Regents exams & questions by topic or standard.
Week 37	6/5 – 6/9	Review For Exam	Use jmap.org for Regents exams & questions by topic or standard.

Week 38	6/12 – 6/16	Review For Exam/REGENTS WEEK	Use jmap.org for Regents exams & questions by topic or standard.
Week 39	6/20 – 6/23	REGENTS WEEK	