ALGEBRA 1 PACING GUIDE

2012-2013 School Year

Montana Common Core Standards Mathematical Practice and Content (Nov 2011)
Math Unit/Content Holt McDougal Burger Textbook (©2012)

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Standards for Mathematical Content

Numbers and Quantity (N)	*The Real Number System* *Quantities* *The Complex Number System* *Vector & Matrix Quantities*
Algebra (A)	*Seeing Structure in Expressions* *Arithmetic w/ Polynomials & Rational Expressions* *Creating Equations* *Reasoning with Equations & Inequalities*
Functions (F)	*Interpreting Functions* *Building Functions* *Linear, Quadratic, & Exponential Models* *Trigonometric Functions*
Modeling (M)	*"Modeling is the process of choosing and using appropriate mathematics and statistics to analyze empirical situations, to understand them better, and to improve decisions … a link to everyday life, work, and decision-making."*
Geometry (G)	*Congruence* *Similarity, Right Triangles, & Trigonometry* *Circles* *Geometric Measurement & Dimension* *Modeling with Geometry*
Statistics and Probability (SP)	*Interpreting Categorical & Quantitative Data* *Making Inferences & Justifying Conclusions* *Conditional Probability & the Rules of Probabiltiy* *Using Probability to Make Decisions*

Standards for Mathematical Practice

Overarching habits of mind of a productive mathematical thinker.

1. Make sense of problems and persevere in solving them.
6. Attend to precision.

Reasoning and explaining.

2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.

Modeling and using tools.

4. Model with mathematics.
5. Use appropriate tools strategically.

Seeing structure and generalizing.

7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Montana Common Core Standards and Assessments Getting Ready

http://opi.mt.gov/pdf/CCSSO/11NovMathPractice_ContentGradeLevel.pdf

COMMON CORE STATE STANDARDS INITIATIVE
PREPARING AMERICA'S STUDENTS FOR COLLEGE & CAREER

http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf

Kalispell Public Schools Pacing Map for Mathematics
Grade Level: Algebra 1

No. of Instructional Days *(INCLUDES LABS,REVIEW,TEST)*	Math Unit/Content Holt McDougal Burger Textbook 2012	Common Core Standards Covered	Concept Descriptors	Notes
Chapter 1 *(≈20 days)*	**EQUATIONS** • Variables and Expressions • Solve Equations • Rates, Ratios, and Proportions • Precision	A.CED.1 A.CED.4 A.REI.1 A.REI.3 A.REI.11 A.SSE.1 N.Q.1 N.Q.2 N.Q.3	• Write expressions from verbal descriptions • Solve equations (include absolute value) • Solve literal equations (ex: Pv = nRT, solve for R) • Model with applications of proportions	1-1 Technology Lab 1-1 Connecting Alg. & Geom. 1-1 Algebra Lab 1-2 Connecting Alg.& Geom. 1-3 Technology Lab 1-4 Algebra Lab 1-5 Technology Lab
Chapter 2 *(≈13 days)*	**INEQUALTIES** • Graph and Write Inequalities • Solve Inequalities	A.CED.1 A.REI.3	• Graph and write inequalities in one variable • Solve inequalities (include compound inequalities) • Solve absolute value inequalities at an introductory level • Introduce tolerance as an application of absolute value inequalities	2-5 Algebra Lab 2-6 Connecting Alg. & Geom.
Chapter 3 *(≈13 days)*	**FUNCTIONS** • Relations and Functions • Scatterplots and Trend Lines • Arithmetic Sequences	N.Q.1 N.Q.2 A.CED.3 A.REI.10 F.BF.1 F.BF.2 F.LE.2 F.IF.1 F.IF.2 F.IF.3 F.IF.4 F.IF.5 F.IF.7 S.ID.6	• Model a real life situation with a graph • Represent a relation/function in multiple forms (i.e. table, graph, mapping) • Identify domain and range for a function • Write, evaluate, and graph functions in f(x) notation • Construct scatterplots • Identify correlation and real world meaning • Introduce trend lines as a method of making predictions • Identify a sequence as arithmetic • Solve for the a_n given a_1 and d	3-2 Algebra Lab 3-2 Algebra Lab 3-4 Technology Lab 3-5 Technology Lab 3-5 Connecting Algebra to Data Analysis (optional)

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Chapter 4 *(≈20 days)*	**LINEAR FUNCTIONS** • Slope • Graph Linear Functions • Write Linear Functions • Parallel and Perpendicular Lines • Applications of Linear Functions • Absolute Value Functions	A.CED.2 A.CED.3 A.REI.10 F.BF.1 F.BF.3 F.IF.2 F.IF.4 F.IF.5 F.IF.6 F.IF.7 F.LE.1 F.LE.2 S.ID.6 S.ID.7 S.ID.8 S.ID.9 G.GPE.5	• Graph and write linear functions in slope-intercept, point-slope, and standard (intercept) form • Identify x, y-intercepts as ordered pairs • Determine slope and apply as a rate of change • Recognize properties of parallel and perpendicular lines • Determine line of best fit using technology (LinReg) • Calculate the value of a residual and interpret in real world situations • Transform Linear Functions (vertical translations and reflections) • Identify and graph transformations of absolute value functions	4-2 Connecting Alg. & Geom. 4-3 Algebra Lab 4-7 Technology Lab 4-7 Connecting Alg. & Data 4-9 Technology Lab Extension on Absolute Value Functions
Chapter 5 *(≈15 days)*	**SYSTEMS OF EQUATIONS & INEQUALITIES** • Solving Systems of Linear Equations • Solving Systems of Linear Inequalities	A.REI.3 A.REI.5 A.REI.6 A.REI.11 A.REI.12 A.CED.2 A.CED.3	• Solve systems by graphing, substitution, and elimination • Identify the solution to a system as an ordered pair • Classify systems of linear equations in terms of the number of solutions • Choose an appropriate method to solve a system • Graph and solve systems of linear inequalities • Apply systems to real world situations	5-1 Technology Lab 5-1 Algebra Lab 5-3 Connecting Alg/Num Thy 5-6 Technology Lab

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Chapter 6 *(≈14 days)* *Skip 6.2* *Skip Extension*	**Exponents and Polynomials** • Integer Exponents • Operations on Polynomials	N.RN.1 N.RN.2 N.RN.3 A.SSE.1a A.APR.1	• Evaluate and simplify expressions with integer exponents • Classify polynomials by degree and number of terms • Perform operations with polynomials (add, subtract, and multiply) • Model real world situations using polynomials	6-3 Algebra Lab 6-4 Algebra Lab 6-5 Connecting Alg. & Geom.
Chapter 7 *(≈14 days)*	**Factoring Polynomials** • Factoring Methods	A.SSE.2 A.SSE.3a	• Factor Polynomials by GCF • Factor $x^2 + bx + c$ • Factor $ax^2 + bx + c$ • Factor perfect square trinomials • Factor the difference of two squares • Choose an appropriate method of factoring • Model real world situations using polynomials	7-1 Algebra Lab 7-2 Algebra Lab 7-4 Technology Lab 7-5 Connecting Alg/Num Thy
Chapter 8 *(≈25 days)* *Skip Extension on Cubic Functions*	**Quadratic Functions and Equations** • Graph Quadratic Functions • Solve Quadratic Equations	A.CED.1 A.CED.3 A.REI.1 A.REI.4a A.REI.4b A.REI.7 A.REI.10 A.REI.11 A.SSE.3 F.IF.4 F.IF.5 F.IF.7 F.IF.8 F.BF.1 F.BF.3	• Identify quadratic functions and the minimum or maximum • Determine the axis of symmetry and the vertex • Determine the zeros (x-intercepts) of a quadratic function from a graph • Graph transformations of quadratic functions • Solve quadratic equations by graphing, factoring, completing the square, using square roots, and using the quadratic formula • Determine the number of solutions by using the discriminant • Solve a system of one linear and one quadratic equation	8-1 Algebra Lab 8-3 Technology Lab 8-5 Technology Lab 8-7 Algebra Lab

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Chapter 10 *(≈20 days)*	**Data Analysis and Probability** • Organizing and Displaying Data • Probability • Independent and Dependent Events	S.ID.1 S.ID.2 S.ID.3 S.IC.1 S.IC.6 S.CP.1 S.CP.2 S.CP.6 S.CP.7	• Display data in tables and frequency tables • Create and display data as a histogram, box and whiskers plot, and a dot plot • Read and interpret graph of data • Identify the shape of a distribution • Describe the central tendency (mean, median, and mode) of a data set • Describe the effect of an outlier on the measures of central tendency • Recognize misleading graphs and statistics • Determine the experimental probability and theoretical probability of an event • Use experimental probability to make predictions • Find the probability of independent, dependent, and compound events	10-1 Connecting Alg. & Data 10-3 Technology Lab 10-4 Connecting Alg. & Data 10-4 Algebra Lab 10-5 Technology Lab 10-7 Algebra Lab
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Total = 154 days

End of semester 1 is during Chapter 5

Chapter 9 (Exponential Equations and Functions) – Algebra 2