



DRAFT

Course Title:	Integrated Math 2	Course Number:	2170
Department / Grade Level:	Mathematics High School	Date:	March 4, 2019

PHILOSOPHY OF INSTRUCTION:

The Coeur d'Alene School District will challenge each student to develop and extend mathematical proficiency and literacy through a focused and coherent curriculum, highest quality mathematics teaching, and assessments that meet the learning needs of each student.

Using the Common Core Standards as a foundation, the curriculum will emphasize depth over breadth with a focus on the foundational concepts and processes of mathematics. In order to address the demands of a changing world, our district's mathematics instruction will prepare students to innovate, think critically, problem solve, communicate, and collaborate—therefore becoming inspired for future study.

SCOPE AND SEQUENCE:

Quarter 1 (9 Weeks) Sept-Oct	Quarter 2 (9 Weeks) Nov- ½ January	Quarter 3 (9 Weeks) Last ½ Jan-March	Quarter 4 (9 Weeks) April-June
<ul style="list-style-type: none">• Unit 1 - Probability• Unit 2 - Linear Functions• Unit 3 - Quadratic Functions	<ul style="list-style-type: none">• Unit 4 - Solving Quadratic Equations• Unit 5 - Introduction to Exponential Functions	<ul style="list-style-type: none">• Unit 6 - Proof and Congruence• Unit 7 - Dilation and Similarity	<ul style="list-style-type: none">• Unit 8 - Right Triangle Trigonometry• Unit 9 - Circles



UNIT 1: PROBABILITY

Estimated Time Frame:	2 Weeks				
Enduring Understandings:					
Bold = Essential Learning Target, <i>Italicized = Supporting Learning Target</i>, * = Modeling Standards					
Learning Targets	<u>Idaho Content Standards</u>	Key Terms	Primary Resources Needed	<u>Assessment</u> (Tie to Enduring Understandings)	<u>Essential Learning Rationale</u>
1-1: I can use sample space to calculate experimental and theoretical probabilities and determine the size of sample spaces using the multiplication counting principle.	S-CP.1*	probability experiment, outcome, event, sample space, theoretical probability, geometric probability, experimental probability	Big Idea Math 2 Book: Section 5.1	TBD	
1-2: I can calculate the probabilities of independent and dependent events.	S-CP.1*, S-CP.2*, S-CP.3*, S-CP.4*, S-CP.5*, S-CP.6*	Independent event, dependent event, conditional probability	Big Idea Math 2 Book: Section 5.2	TBD	
1-3: I can use a two-way table to calculate conditional probabilities and interpret the values within the table.	S-CP.4*, S-CP.5*, S-ID.5	Two-way table, joint frequency	Big Idea Math 2 Book: Section 5.3	TBD	
1-4: I can calculate the probabilities of overlapping and disjoint events.	S-CP.1*, S-CP.7*	Compound event, overlapping events, mutually exclusive events	Big Idea Math 2 Book: Section 5.4	TBD	



UNIT 2: LINEAR FUNCTIONS

Estimated Time Frame:	2 Weeks				
Enduring Understandings:					
Bold = Essential Learning Target, <i>Italicized = Supporting Learning Target</i>, * = Modeling Standards					
Learning Targets	<u>Idaho Content Standards</u>	Key Terms	Resources Needed	<u>Assessment</u> (Tie to Enduring Understandings)	<u>Essential Learning Rationale</u>
2-1: I can correctly use function notation in a context and evaluate functions for inputs and their corresponding outputs.	F-IF.1, F-IF.2, F-LE.1*	Domain, dependent variable, function, function notation, independent variable, range, relation	Big Ideas - Math 1 Book - Sections 3.1	Mastery Level	
2-2: I can create linear functions from graphs, tables, or a description of the relationship (including parallel and perpendicular lines).	A-CED.2*, A-REI.10, F-IF.7a*, F-IF.9, F-BF.1a*, F-LE.2*	Constant function, rise, run, slope, slope-intercept form, standard form of a linear equation, x and y intercepts, point-slope form, Parallel and perpendicular lines,	Big Ideas - Math 1 Book - Sections 4.1 - 4.3	Mastery Level	
2-3: I can solve systems of linear equations exactly and approximately algebraically and graphically.	A-REI.5, A-REI.6	solution of a system of linear equations, system of linear equations	Big Ideas - Math 1 Book - Sections 5.1 - 5.4	Mastery Level	
2-4: I can solve equations by graphing.	A-REI.11*		Big Ideas - Math 1 Book - Sections 5.5	Mastery Level	
2-5: I can identify and interpret solutions to systems of equations and inequalities.	A-REI.12 N-Q.3	Graph of a system of linear inequality, solution of a system of linear inequality, a system of linear inequalities	Big Ideas - Math 1 Book - Sections 5.7	Mastery Level	



UNIT 3: QUADRATIC FUNCTIONS

Estimated Time Frame:	4 Weeks				
Enduring Understandings:					
Bold = Essential Learning Target, <i>Italicized</i> = Supporting Learning Target, * = Modeling Standards					
Learning Targets	<u>Idaho Content Standards</u>	Key Terms	Resources Needed	<u>Assessment</u> (Tie to Enduring Understandings)	<u>Essential Learning Rationale</u>
3-1: I understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane and can use this understanding to graph quadratic equations in standard form.	A-REI.10, A-CED.2*, F-IF.7a*, F-BF.3, F-IF.9 N-Q.2	Quadratic function, parabola, vertex, axis of symmetry, maximum value, minimum value	Big Ideas - Math 2 Book - Sections 3.1 - 3.3	Developmental Level	
3-2: I can graph quadratic functions in vertex form using transformations and parent functions (review graphing absolute value functions and transformations).	A-CED.2*, F-IF.4*, F-BF.1a*, F-BF.3	Reflection, transformation, translation, vertex form	Big Ideas - Math 2 Book - Sections 3.4	Developmental Level	
3-3: I understand the connection between zeros, factors, and x-intercepts and can use this understanding to graph quadratic functions in factored form.	A-SSE.3a*, A-APR.3, A-CED.2*, F-IF.4*, F-IF.8a, F-BF.1a*	Intercept form, zero, factor, x-intercept	Big Ideas - Math 2 Book - Sections 3.5	Developmental Level	
3-4: I can use different but equivalent forms of quadratic functions to identify keys features of the functions.	A-SSE.3*, F-IF.4*, F-IF.8a N-Q.3		Big Ideas - Math 2 Book - Sections 3.3 - 3.5	Developmental Level	



UNIT 4: SOLVING QUADRATIC EQUATIONS

Estimated Time Frame:	5 Weeks				
Enduring Understandings:					
Bold = Essential Learning Target, <i>Italicized</i> = Supporting Learning Target, * = Modeling Standards					
Learning Targets	Idaho Content Standards	Key Terms	Resources Needed	Assessment (Tie to Enduring Understandings)	Essential Learning Rationale
4-1: I understand the properties of radicals and can use these properties to simplify and perform operations with radicals.	N-RN.2, N-RN.3	Radical, simplest form, rationalizing, perfect square, perfect cube	Big Ideas - Math 2 Book - Sections 4.1	Developmental Level	
4-2: I can solve quadratic equations using graphical representations.	A-REI.11*, F-IF.7a*, A-REI.7 N-Q.2	X-intercept, root, zero	Big Ideas - Math 2 Book - Sections 4.2	Developmental Level	
4-3: I can solve basic quadratic equations using square roots and inverse operations.	A-CED.1*, A-CED.4*, A-REI.4a, N-CN.1, N-CN.2,	Square root, complex number, imaginary number	Big Ideas - Math 2 Book - Sections 4.3	Developmental Level	
4-4: I can solve basic quadratic equations using the completing the square method and the Quadratic Formula.	A-SSE.3b*, A-CED.1*, A-REI.4a, A-REI.4b, F-IF.8a, A-REI.7, N-CN.1, N-CN.2, N-CN.7	perfect square trinomial, coefficient, maximum value, minimum value, vertex form of a quadratic function, Quadratic Formula, discriminant	Big Ideas - Math 2 Book - Sections 4.4 - 4.7	Developmental Level	
4-5: I can solve basic nonlinear systems of equations using a variety of algebraic and graphical methods	A-REI.7	Nonlinear system	Big Ideas - Math 2 Book - Sections 4.8	Developmental Level	



UNIT 5: INTRODUCTION TO EXPONENTIAL FUNCTIONS

Estimated Time Frame:	4 Weeks				
Enduring Understandings:					
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Learning Targets	<u>Idaho Content Standards</u>	Key Terms	Resources Needed	<u>Assessment</u> (Tie to Enduring Understandings)	<u>Essential Learning Rationale</u>
5-1: I understand how the properties of exponents extend to include rational exponents and that rational exponents can be used to represent radicals.	N-RN.1, N-RN.2,	Power, exponent, base, radical, index of a radical, square root	Big Ideas - Math 2 Book - Sections 1.4 - 1-5	Developmental Level	
5-2: I understand the basic characteristics of exponential functions and can compare and represent linear and exponential relationships in a variety of ways.	A-CED.2, F-IF.4*, F-IF.7e*, F-IF.9, F-BF.1a*, F-BF.3, F-LE.1a*, F-LE.2*, F-LE.3*	Exponential function	Big Ideas - Math 1 Book - Sections 6.1 - 6.3	Introductory Level	
5-3: I can model real-world situations and solve problems using a variety of representations involving exponential growth and decay.	A-SSE.3c*, A-CED.2*, F-IF.7e*, F-IF.8b, F-BF.1a*, F-LE.1c*, F-LE.2*, F-LE.3*, F-LE.4*	Exponential growth, exponential decay	Big Ideas - Math 1 Book - Sections 6.1 - 6.3	Introductory Level	
5-4: I can use geometric sequences to represent exponential patterns.	F-IF.3, F-BF.1a*, F-BF.2*, F-LE.2*	Geometric sequence, common ratio, arithmetic sequence, common difference, explicit rule, recursive rule	Big Ideas - Math 1 Book - Sections 6.4 - 6.5	Introductory Level	
District-Wide Common Lesson:	Possible Additional Common Lessons for Building Level Teams:				



UNIT 6: PROOF AND CONGRUENCE

Estimated Time Frame:	5 weeks				
Enduring Understandings:					
Bold = Essential Learning Target, <i>Italicized = Supporting Learning Target</i>, * = Modeling Standards					
Learning Targets	Idaho Content Standards	Key Terms	Resources Needed	Assessment (Tie to Enduring Understandings)	Essential Learning Rationale
6-1: I can use algebraic reasoning to justify steps in solving an equation.	A-REI.1			Mastery Level	
6-2: I can prove basic geometric angle relationships with (e.g. parallel and perpendicular lines) and without (e.g. vertical angles) the coordinate plane.	G-CO.9, G-CO.10, G-CO.11, G-SRT.4, G-GPE.6, G-GPE.7*	Conditional statement, biconditional statement, counterexample, deductive reasoning, inductive reasoning, postulate, theorem, transversal	Big Ideas - Math 1 Book - Sections 9.1 - 9.3, 9.5, 10.3 - 10.4	Mastery Level	
6-3: I can prove figures are congruent using rigid transformations.	G-CO.3, G-CO.4, G-CO.5, G-CO.6, G-CO.12	Rigid transformation, translation, reflection, rotation, congruence, congruence transformation	Big Ideas - Math 1 Book - Sections 11.4	Mastery Level	
6-4: I can prove triangles are congruent using theorems and postulates.	G-CO.7, G-CO.8, G-CO.10, G-CO.13, G-MG.1*, G-MG.3*, G-SRT.5, G-GPE.4	Interior angle, exterior angle, congruent figures, legs, base, base angles, corresponding parts, construction	Big Ideas - Math 2 Book - Sections 12.1 - 12.8	Mastery Level	
District-Wide Common Lesson:	Possible Additional Common Lessons for Building Level Teams:				



UNIT 7: DILATION AND SIMILARITY

Estimated Time Frame:	4 weeks				
Enduring Understandings:					
Bold = Essential Learning Target, <i>Italicized = Supporting Learning Target</i>, * = Modeling Standards					
Learning Targets	<u>Idaho Content Standards</u>	Key Terms	Resources Needed	<u>Assessment</u> (Tie to Enduring Understandings)	<u>Essential Learning Rationale</u>
7-1: I can transform figures using dilations and rigid transformations.	G-CO.2, G-SRT.1	Dilation, center of dilation, scale factor	Big Ideas - Math 2 Book - Sections 8.1	Mastery Level	
7-2: I can use dilations and rigid transformations to verify that shapes are similar and develop a definition of similarity.	G-CO.5, G-SRT.2	Similarity transformation, similar figures	Big Ideas - Math 2 Book - Sections 8.2	Mastery Level	
7-3: I can use theorems and postulates to verify triangles are similar.	G-SRT.2, G-SRT.3, G-SRT.4, G-SRT.5, G-SRT.6, G-GPE.5	Corresponding parts, ratios, proportions	Big Ideas - Math 2 Book - Sections 8.3 - 8.5	Mastery Level	
7-4: I can use congruence and similarity criteria for triangles to solve real-world problem.	G-SRT.2, G-SRT.3, G-SRT.4, G-SRT.5, G-SRT.6, G-GPE.5, G-MG.1*	Corresponding parts, ratios, proportions	Big Ideas - Math 2 Book - Sections 8.3 - 8.5	Mastery Level	
District-Wide Common Lesson:	Possible Additional Common Lessons for Building Level Teams:				



UNIT 8: RIGHT TRIANGLE TRIGONOMETRY

Estimated Time Frame:	3 weeks				
Enduring Understandings:					
Bold = Essential Learning Target, <i>Italicized = Supporting Learning Target</i>, * = Modeling Standards					
Learning Targets	<u>Idaho Content Standards</u>	Key Terms	Resources Needed	<u>Assessment</u> (Tie to Enduring Understandings)	<u>Essential Learning Rationale</u>
8-1: I can use the Pythagorean Theorem and its converse to classify triangles.	G-SRT.4, G-SRT.8*	right triangle, legs of a right triangle, hypotenuse, converse	Big Ideas - Math 2 Book - Sections 9.1	Mastery Level	
8-2: I can use the concept of similarity to define trigonometric ratios.	G-SRT.5, G-SRT.6	Isosceles triangle, trigonometric ratio,	Big Ideas - Math 2 Book - Sections 9.2-9.3	Mastery Level	
8-3: I can use trigonometric ratios to solve basic right triangles.	G-SRT.7, G-SRT.8*	tangent, sine, cosine, inverse tangent, inverse sine, inverse cosine, solve a right triangle	Big Ideas - Math 2 Book - Sections 9.4-9.5	Mastery Level	
8-4: I can use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems	G-SRT.8*, G-MG.1*, G-MG.3*	angle of elevation, angle of depression	Big Ideas - Math 2 Book - Sections 9.6	Mastery Level	
District-Wide Common Lesson:	Possible Additional Common Lessons for Building Level Teams:				



UNIT 9: CIRCLES

Estimated Time Frame:	3 weeks				
Enduring Understandings:					
Bold = Essential Learning Target, <i>Italicized = Supporting Learning Target</i>, * = Modeling Standards					
Learning Targets	Idaho Content Standards	Key Terms	Resources Needed	Assessment (Tie to Enduring Understandings)	Essential Learning Rationale
9-1: I can identify and describe basic relationships among inscribed angles, radii, and chords.	G-CO.1, G-CO.13, G-C.1, G-C.2, G-C.3, G-MG.1*	circle, center, radius, chord, diameter, secant, tangent, point of tangency, tangent circles, concentric circles, common tangent, central angle, minor arc, major arc, semicircle, measure of a minor arc, measure of a major arc, adjacent arcs, congruent circles, congruent arcs, similar arcs, inscribed angle, intercepted arc, inscribed polygon, circumscribed circle	Big Ideas - Math 2 Book - Sections 10.1-10.6	Developmental Level	
9-2: I can use Pythagorean Theorem to derive an equation of a circle in the coordinate plane and use equations to graph circles.	G-GPE.1, G-GPE.2, G-GPE.4		Big Ideas - Math 2 Book - Sections 10.7	Development Level	
District-Wide Common Lesson:	Possible Additional Common Lessons for Building Level Teams:				