

Perris Union High School District

Course of Study

A. COURSE INFORMATION		
Course Title: <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Math 8 Essentials</div> <input checked="" type="checkbox"/> New <input type="checkbox"/> Revised	Subject Area: <input type="checkbox"/> Social Science <input type="checkbox"/> English <input checked="" type="checkbox"/> Mathematics <input type="checkbox"/> Laboratory Science <input type="checkbox"/> World Languages <input type="checkbox"/> Visual or Performing Arts <input type="checkbox"/> College Prep Elective <input type="checkbox"/> Other	Grade Level <input type="checkbox"/> MS <input type="checkbox"/> HS <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input checked="" type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12
Transcript Title/Abbreviation: <div style="border: 1px solid black; height: 20px; width: 100%;"></div> (To be assigned by Educational Services)	Is this classified as a Career Technical Education course? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Transcript Course Code/Number: <div style="border: 1px solid black; height: 20px; width: 100%;"></div> (To be assigned by Educational Services)		
Required for Graduation: <input type="checkbox"/> Yes <input type="checkbox"/> No	Credential Required to teach this course: <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <i>Single Subject: Mathematics</i> <u>To be completed by Human Resources only.</u> </div>	
Meets UC/CSU Requirements? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Was this course <u>previously approved by UC</u> for PUHSD? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Will be verified by Ed Services)	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="display: flex; justify-content: space-between;"> Signature 1/30/19 </div> </div>	
Meets "AP" Requirements? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Meets "Honors" Requirements? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Submitted by: Amanda Darton Site: SSC Date: 1/30/2019	Unit Value/Length of Course: <input type="checkbox"/> 0.5 (half year or semester equivalent) <input checked="" type="checkbox"/> 1.0 (one year equivalent) <input type="checkbox"/> 2.0 (two year equivalent) <input type="checkbox"/> Other:	
Approvals	Name/Signature	Date
Director of Curriculum & Instruction		1/31/19
Asst. Superintendent of Educational Services		1/31/19
Governing Board		

Prerequisite(s) (REQUIRED):
None
Corequisite(s) (REQUIRED):
None
Brief Course Description (REQUIRED):
In Math 8 Essentials will provide focused instructional time on the Essential Standards identified from the California Common Core Math 8 Standards, while formalizing and extending the mathematics learned in previous grades. This course will include standard from the following domains: (1) Geometry, (2) Functions and (3) Expressions and Equations.

B. COURSE CONTENT

Course Purpose (REQUIRED): <i>What is the purpose of this course? Please provide a brief description of the goals and expected outcomes. Note: More specificity than a simple recitation of the State Standards is needed.</i>
In grade 8, instructional time should focus on three critical areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem. (1) Students use linear equations and systems of linear equations to represent, analyze, and solve a variety of problems. Students recognize equations for proportions ($y/x = m$ or $y = mx$) as special linear equations ($y = mx + b$), understanding that the constant of proportionality (m) is the slope, and the graphs are lines through the origin. They understand that the slope (m) of a line is a constant rate of change, so that if the input or x-coordinate changes by an amount A , the output or y-coordinate changes by the amount $m \cdot A$. Students also use a linear equation to describe the association between two quantities in bivariate data (such as arm span versus height for students in a classroom). At this grade, fitting the model and assessing its fit to the data are done informally. Interpreting the model in the context of the data requires students to express a relationship between the two quantities in question and to interpret

components of the relationship (such as slope and y-intercept) in terms of the situation. Students strategically choose and efficiently implement procedures to solve linear equations in one variable, understanding that when they use the properties of equality and the concept of logical equivalence, they maintain the solutions of the original equation. Students solve systems of two linear equations in two variables and relate the systems to pairs of lines in the plane; these intersect, are parallel, or are the same line. Students use linear equations, systems of linear equations, linear functions, and their understanding of slope of a line to analyze situations and solve problems.

(2) Students grasp the concept of a function as a rule that assigns to each input exactly one output. They understand that functions describe situations where one quantity determines another. They can translate among representations and partial representations of functions (noting that tabular and graphical representations may be partial representations), and they describe how aspects of the function are reflected in the different representations.

(3) Students use ideas about distance and angles, how they behave under translations, rotations, reflections, and dilations, and ideas about congruence and similarity to describe and analyze two-dimensional figures and to solve problems. Students show that the sum of the angles in a triangle is the angle formed by a straight line, and that various configurations of lines give rise to similar triangles because of the angles created when a transversal cuts parallel lines. Students understand the statement of the Pythagorean Theorem and its converse, and can explain why the Pythagorean Theorem holds, for example, by decomposing a square in two different ways. They apply the Pythagorean Theorem to find distances between points on the coordinate plane, to find lengths, and to analyze polygons. Students complete their work on volume by solving problems involving cones, cylinders, and spheres.

Course Outline (REQUIRED):

Detailed description of topics covered. All historical knowledge is expected to be empirically based, give examples. Show examples of how the text is incorporated into the topics covered.

Students will work on the following concepts:

- Real Numbers
 - Rational and Irrational Numbers
 - Square Roots and Cube Roots
 - Integer Exponents and Scientific Notation
- Analyze and Solve Linear Equations
 - Solve Linear Equations
 - Proportional Relationships
 - Represent Linear Equations
- Use Functions to Model Relationships
 - Relations and Functions
 - Compare Properties of Functions
 - Construct Functions to Model Linear Relationships
 - Describe Behaviors of Functions Qualitatively
- Analyze and Solve Systems of Linear Equations
 - Solve Systems of Linear Equations Graphically
 - Solve Systems of Linear Equations Algebraically
- Congruence and Similarity
 - Transformations
 - Congruent and Similar Figures

- Lines and Angles
- Understand and Apply the Pythagorean Theorem
 - Pythagorean Theorem Concepts
 - Apply the Pythagorean Theorem
- Solve Problems Involving Surface Area and Volume
 - Surface Area
 - Volume

Writing Assignments (REQUIRED):

Give examples of the writing assignments and the use of critical analysis within the writing assignments.

Writing assignments will include:

- Justifications and/or Explanations
- Cornell Notes
- Assessments
- Projects/Performance Tasks
- Journals/Learning Logs – Reflections/Summaries
- Writing Prompts
- Other CFUs (i.e. Warm ups and Tickets out the Door)

INSTRUCTIONAL MATERIALS (REQUIRED)

Textbook #1

Title: envision Math 2.0	Edition: First
Author: Berry, Champagne, Milou, Schielack, Wray, Charles and Fennell	ISBN: 9780328896271
Publisher: Pearson	Publication Date: 2016
Usage: <input checked="" type="checkbox"/> Primary Text <input type="checkbox"/> Read in entirety or near	

Textbook #2

Title:	Edition:
Author:	ISBN:
Publisher:	Publication Date:
Usage:	

<input type="checkbox"/> Primary Text <input type="checkbox"/> Read in entirety or near	
Supplemental Instructional Materials <i>Please include online, and open source resources if any.</i>	
9780328896455 ENVISION MATH 2.0 EXAMVIEW CD-ROM GRADE 8 COPYRIGHT 2017 \$128.97 9780328881130 ENVISION MATH 2.0 TEACHER RESOURCE MASTERS PACKAGE GR. 8 COPYRIGHT 2017 \$ 149.97 9780328880980 ENVISION MATH 2.0 COMMON CORE TEACHER EDITION PACKAGE GR. 8 COPYRIGHT 2017 \$530.47	
Estimated costs for classroom materials and supplies (REQUIRED). <i>Please describe in detail.</i> If more space is needed than what is provided, please attach backup as applicable.	
Cost for class set of textbooks: \$ 3742.92	Description of Additional Costs: All Supplemental materials. Per contract all Teacher Resources are free.
Additional costs:\$ 530.47	
Total cost per class set of instructional materials:	\$4273.39

Key Assignments (REQUIRED):
Please provide a detailed description of the Key Assignments including tests, and quizzes, which should incorporate not only short answers but essay questions also. How do assignments incorporate topics? Include all major assessments that students will be required to complete
Key Assignments will include: <ul style="list-style-type: none"> ● End of Unit Assessments ● Daily/Lesson Quizzes ● Semester Benchmarks/Finals ● Performance Tasks/ Projects ● Homework ● Cornell Notes
Instructional Methods and/or Strategies (REQUIRED):
Please list specific instructional methods that will be use.
Instructional Strategies will include: <ul style="list-style-type: none"> ● Direct Instruction ● Targeted Feedback ● Reciprocal Teaching ● Collaboration

- Adapting to learning styles and multiple intelligences
- Realia
- Modeling
- Guided and Independent practice
- Partner/ Group work
- Spiraling
- Questioning strategies that look for participation and content understanding

Assessment Methods and/or Tools (REQUIRED):

Please list different methods of assessments that will be used.

Assessment Methods will include:

- Type of Questions include:
 - Open Response
 - Multiple Choice
 - Performance Assessment\
 - Multiple Choice
- Investigations
- Projects
- Self-assessment
- Whiteboards
- Find the error
- Portfolios/"Notebooks"
- Ticket out the Doors
- Homework

Platforms include: Pearson, Eadms, Haiku and Desmos

COURSE PACING GUIDE AND OBJECTIVES (REQUIRED)

Day(s)	Objective	Standard(s)	Chapter(s)	Reference
	Graph proportional relationships: <ul style="list-style-type: none"> ● Graph ordered pairs from an x and y table. ● Find the slope from the graph of a line. ● Find the slope from a table of x and y values. ● Interpret and describe what the slopes mean in the problem. ● Compare slopes that are represented in different ways 	EE.5	Topic 2 and 3	

	<p>Use functions to model relationships between quantities</p> <ul style="list-style-type: none"> ● Write an equation/function in slope intercept form. ($y = mx + b$). ● Identify/calculate slope and initial value. ● From an equation ● From a graph ● Interpret/understand the meaning of slope and rate of change. ● Introduce slope formula by finding the rate of change from data table. ● Find the slope from a graph using the slope formula. ● Identify the y-intercept/initial value from a graph or equation. ● Graphing a linear equation when given an equation in $y=mx+b$ 	F.4	Topic 2	
	<p>Compare the properties of two functions written in different ways, including those:</p> <ul style="list-style-type: none"> ● Written as equations. ● Shown as graphs. ● Shown as tables. ● By verbal description 	F.2	Topic 3	
	<p>Solve linear equations with rational number coefficients</p> <ul style="list-style-type: none"> ● Students can simplify expressions using the distributive property and combining like terms ● Students can solve linear equations with rational number coefficients 	EE.7.b		
	<p>Reteach lesson on graphing linear equations before graphing systems.</p> <ul style="list-style-type: none"> ● Graph two linear equations to find solutions to system. <p>Solving Systems</p> <ul style="list-style-type: none"> ● Determine whether the system of equations has no solution, one solution, or infinite solutions. ● Given two equations 	EE.8.c	Topic 4	

	<ul style="list-style-type: none"> ● By graphing linear equations. ● Use substitution to solve linear systems. ● Use elimination to solve linear systems. 			
	<p>Know and apply the properties of integer exponents to generate equivalent numerical expressions.</p> <ul style="list-style-type: none"> ● Multiply powers with the same base. ● Divide powers with the same base. ● Raise a product to a power. ● Raise a power to a power. ● Write equivalent expressions involving zero and negative exponents. ● Evaluate expressions involving integer exponents. 	EE.1	Topic 1	
	<p>Pythagorean Theorem:</p> <ul style="list-style-type: none"> ● Derive a proof of the Pythagorean Theorem. ● Use the Pythagorean Theorem to find the length of the hypotenuse or a leg of a right triangle. ● Understand and apply the Converse of the Pythagorean Theorem to identify right triangles. ● Use the Converse of the Pythagorean Theorem to analyze two-dimensional shapes. ● Use the Pythagorean Theorem and its converse to solve problems. ● Use the Pythagorean Theorem to solve real world problems ● Apply the Pythagorean Theorem to find the distance between two points on a coordinate plane. ● Use the Pythagorean Theorem to find the perimeter of a figure and to solve problems on the coordinate plane. 	G.7 and G.8	Topic 6	

C. HONORS COURSES ONLY

Indicate how much this honors course is different from the standard course.

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D. BACKGROUND INFORMATION

Context for course (optional)

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History of Course Development (optional)

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