

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 5</div> <input type="checkbox"/> New <input checked="" 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 checked="" type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input 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 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 checked="" type="checkbox"/> No	Credential Required to teach this course: <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Mathematics</div> <i>To be completed by Human Resources only.</i>	
Meets UC/CSU Requirements? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Was this course <i>previously approved by UC</i> 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;"> <i>5/3/17</i> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Signature Date </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: <i>Amanda Darton</i> Site: <i>35C</i> Date: <i>4/28/17</i>	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		<i>5/1/17</i>
Asst. Superintendent of Educational Services		<i>5.4.17</i>
Governing Board		

Prerequisite(s) (REQUIRED):

None

Corequisite(s) (REQUIRED):

None

Brief Course Description (REQUIRED):

In Math 5, instructional time should focus on three critical areas: (1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to two-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; and (3) developing understanding of volume.

B. COURSE CONTENT**Course Purpose (REQUIRED):**

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.

In grade 5, instructional time should focus on three critical areas: (1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to two-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; and (3) developing understanding of volume.

(1) Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of them. Students also use the meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole numbers by unit fractions.)

(2) Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to hundredths efficiently and accurately.

(3) Students recognize volume as an attribute of three-dimensional space. They understand that volume can be measured by finding the total number of same-size units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to determine volumes to solve real-world and mathematical problems.

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:

- Understand Place Value
 - Understand Place Value in Whole Numbers
 - Exponents and Power of 10
 - Place-Value Relationships
 - Use Place Value to Read and Write Whole Numbers
 - Understand Place Value in Decimals
 - Place Value Relationships in Decimals
 - Use Place Value to Read and Write Decimals
 - Compare and Round Decimals
- Add and Subtract Decimals to Hundredths
- Fluently Multiply Multi-Digit Whole Numbers
- Use Models and Strategies to Multiply Decimals
- Use Models and Strategies to Divide Whole Numbers
- Use Models and Strategies to Divide Decimals
- Use Equivalent Fractions to Add and Subtract Fractions
 - Find Equivalent Fractions with a Common Denominator
 - Rename Fractions Using a Common Denominator
 - Add and Subtract Fractions with Unlike Denominator
 - Estimate Reasonable Answers
 - Add and Subtract Fractions
 - Add and Subtract Mixed Numbers with Unlike Denominator
 - Estimate Reasonable Answers

- Add Mixed Numbers
- Subtract Mixed Numbers
- Apply Understanding of Multiplication to Multiply Fractions
 - Multiply Whole Numbers and Fraction
 - Multiply Fractions
 - Multiply Mixed Numbers
 - Multiplication as Scaling
 - Solve Problems Involving Fraction Multiplication
- Apply Understanding of Division to Divide Fractions
 - Fraction Division
 - Dividing Whole Number by Unit Fractions
 - Dividing Unit Fractions by Whole Numbers
 - Solve Problems Involving Fraction Division
- Understand Volume Concepts
 - Model Volume
 - Understand Volume
 - Develop Formulas for the Volume of a Rectangular Prism
 - Connect Volume and a Formula for Finding the Number of Cubes
 - Another Formula for Finding Volume
 - Solve Problems Involving Volume
 - Use a Formula to Find the Volume of a Right Rectangular Prism
 - Recognize Volume as Additive
 - Solve Volume Problems
- Convert Measurements
 - Convert Customary Units
 - Customary Units of Length
 - Customary Units of Capacity
 - Customary Units of Weight
 - Convert Metric Units
 - Metric Units of Length
 - Metric Units of Capacity
 - Metric Units of Mass
 - Solve Problems Involving Conversions
 - Recognize the Need to Convert Units
- Represent and Interpret Data
 - Represent and Interpret Data in Line Plots
 - Read and Analyze Line Plots
 - Identify Outliers
 - Make Line Plots
 - Problems Involving Fractions in Line Plots
 - Solve Problems Using Data in Line Plots
 - Write Problems Using Data in Line Plots
- Write and Interpret Numerical Expressions
 - Evaluate Numerical Expressions
 - Order of Operations
 - Write Numerical Expressions
 - Represent a Multi-Step Problem with a Numerical Expression

- Interpret Numerical Expressions
 - Connect Numerical Expressions to Real Life Situations
- Graph Points on the Coordinate Plane
 - The Coordinate System
 - Understand the Coordinate System
 - Ordered Pairs
 - Graph Points
 - Graph Ordered Pairs
 - Solve Problems
 - Interpret Coordinate Values
 - Solve Problems Using Ordered Pairs
- Algebra : Analyze Patterns and Relationships
 - Patterns and Relationships
 - Numerical Patterns with the Same Rule
 - Numerical Patterns with Different Rules
 - Graphing Relationship
 - Graphs of Relationships
- Geometric Measurement: Classify Two-Dimensional Figures
 - Triangles
 - Classify Triangles
 - Quadrilaterals
 - Classify Quadrilaterals
 - Hierarchy of Quadrilaterals

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: Math 2016 Common Core Student Edition 8 yr.
Subscription + Digital courseware 8 year license

Edition: First

Author: Berry, Champagne, Milou, Schielack, Wray, Charles and Fennel	ISBN: 9780328872800
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 *Please include online, and open source resources if any.*

9780328827749 MATH 2016 CC T. RESOURCE MASTERS DOMAIN BOOKS PACKAGE GR.5 \$164.47
9780328828029 MATH 2016 COMMON CORE TEACHER EDITION PACKAGE GRADE 5 \$530.47
9780328849345 MATH 2016 COMMON CORE QUICK KIT & EASY CENTER KIT GRADE 5 \$291.97
9780328790470 MATH 2015 INDIVIDUAL STUDENT MANIP KIT GRADE 5 \$10.97
9780328906093 MATH 2017 EXAMVIEW CD-ROM GRADE 5 \$128.97

Estimated costs for classroom materials and supplies (REQUIRED). *Please describe in detail.*
If more space is needed than what is provided, please attach backup as applicable.

Cost for class set of textbooks: \$ 4138.92	Description of Additional Costs: All supplemental materials. Per contract all Teacher Resources are free.
Additional costs:\$ 1217.33	
Total cost per class set of instructional materials:	\$ 5356.25

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:

- End of Unit Assessments

- Daily/Lesson Quizzes
- Semester Benchmarks/Finals
- Performance Tasks/ Projects
- Homework
- Midterm/mid-unit Assessments
- Cornell Notes

Instructional Methods and/or Strategies (REQUIRED):

Please list specific instructional methods that will be use.

Instructional Strategies will include:

- 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
16 -19	Understand Place Value 1-1 Patterns with Exponents and Powers of 10 1-2 Understand Whole-Number Place Value 1-3 Decimals to Thousandths 1-4 Understand Decimal Place Value 1-5 Compare Decimals 1-6 Round Decimals 1-7 Math Practices and Problem Solving: Look For and Use Structure	5.NBT.2 5.NBT.1 5.NBT.3a 5.NBT.3b 5.NBT.4	Topic 1	Essential Standards Addressed
9 -16	Add and Subtract Decimals to Hundredths 2-1 Mental Math 2-2 Estimate Sums and Differences 2-3 Use Decimals to Add and Subtract Decimals 2-4 Add Decimals 2-5 Subtract Decimals 2-6 Add and Subtract Decimals 2-7 Math Practices and Problem Solving: Model with Math	5.NBT.7 5.NBT.4	Topic 2	
16 - 17	Fluently Multiply Multi-Digit Whole	5.NBT.5	Topic 3	

	<p>Numbers</p> <p>3-1 Multiply Greater Numbers by Powers of 10</p> <p>3-2 Estimate Products</p> <p>3-3 Multiply 3-Digit by 2-Digit Numbers</p> <p>3-4 Multiply Whole Numbers with Zeros</p> <p>3-5 Multiply Multi-Digit Numbers</p> <p>3-6 Solve Word Problems Using Multiplication</p> <p>3-7 Math Practices and Problem Solving: Critique Reasoning</p>	5.NBT.2		
12 - 13	<p>Use Models and Strategies to Multiply Decimals</p> <p>4-1 Multiply Decimals by Powers of 10</p> <p>4-2 Estimate the Product of a Decimal and a Whole Number</p> <p>4-3 Use Models to Multiply a Decimal and a Whole Number</p> <p>4-4 Multiply a Decimal by a Whole Number</p> <p>4-5 Use Models to Multiply a Decimal and a Decimal</p> <p>4-6 Multiply Decimals Using Partial Products</p> <p>4-7 Use Properties to Multiply Decimals</p> <p>4-8 Use Number Sense to Multiply Decimals</p> <p>4-9 Multiply Decimals</p> <p>4-10 Math Practices and Problem Solving: Model with Math</p>	5.NBT.7 5.NBT.2	Topic 4	

10 - 18	<p>Use Models and Strategies to Divide Whole Numbers</p> <p>5-1 Use Patterns and Mental Math to Divide</p> <p>5-2 Estimate Quotients with 2-Digit Divisors</p> <p>5-3 Use Models to Divide with 2-Digit Divisors</p> <p>5-4 Use Partial Quotients to Divide</p> <p>5-5 Divide by Multiples of 10</p> <p>5-6 Use Estimation to Place the First Digit of the Quotient</p> <p>5-7 Divide by 2-Digit Divisors</p> <p>5-8 Math Practices and Problem Solving: Make Sense and Persevere</p>	5.NBT.6	Topic 5	
20 -21	<p>Use Models and Strategies to Divide Decimals</p> <p>6-1 Patterns for Dividing with Decimals</p> <p>6-2 Estimate Decimal Quotients</p> <p>6-3 Use Models to Divide by a 1-Digit Whole Number</p> <p>6-4 Divide by a 1-Digit Whole Number</p> <p>6-5 Divide by a 2-Digit Whole Number</p> <p>6-6 Use Number Sense to Divide Decimals</p> <p>6-7 Divide by a Decimal</p> <p>6-8 Continue to Divide by Decimals</p> <p>6-9 Math Practices and Problem Solving: Reasoning</p>	5.NBT.7 5.NBT.2	Topic 6	

24 - 35	<p>Use Equivalent Fractions to Add and Subtract Fractions</p> <p>7-1 Estimate Sums and Differences of Fractions</p> <p>7-2 Find Common Denominators</p> <p>7-3 Add Fractions with Unlike Denominators</p> <p>7-4 Subtract Fractions with Unlike Denominators</p> <p>7-5 Add and Subtract Fractions</p> <p>7-6 Estimate Sums and Differences of Mixed Numbers</p> <p>7-7 Use Models to Add Mixed Numbers</p> <p>7-8 Add Mixed Numbers</p> <p>7-9 Use Models to Subtract Mixed Numbers</p> <p>7-10 Subtract Mixed Numbers</p> <p>7-11 Add and Subtract Mixed Numbers</p>	<p>5.NF.1 5.NF.2</p>	Topic 7	
14 - 20	<p>Apply Understanding of Multiplication to Multiply Fractions</p> <p>8-1 Use Models to Multiply a Whole Number by a Fraction</p> <p>8-2 Use Models to Multiply a Fraction by a Whole Number</p> <p>8-3 Multiply Fractions and Whole Numbers</p> <p>8-4 Use Models to Multiply Two Fractions</p> <p>8-5 Multiply Two Fractions</p> <p>8-6 Area of a Rectangle</p>	<p>5.NF.4a 5.NF.6 5.NF.4b</p>	Topic 8	

	8-7 Multiply Mixed Numbers 8-8 Multiplication as Scaling 8-9 Math Practices and Problem Solving: Make Sense and Persevere			
10 - 18	Apply Understanding of Division to Divide Fractions 9-1 Fractions and Division 9-2 Fractions and Mixed Numbers as Quotients 9-3 Use Multiplication to Divide 9-4 Divide Whole Numbers by Unit Fractions 9-5 Divide Unit Fractions by Non-Zero Whole Numbers 9-6 Divide Whole Numbers and Unit Fractions 9-7 Solve Problems Using Division 9-8 Math Practices and Problem Solving: Repeated Reasoning	5.NF.3 5.NF.3 5.NF.7b 5.NF.7c 5.NF.7a	Topic 9	
8- 14	Understand Volume Concepts 10-1 Model Volume 10-2 Develop a Volume Formula 10-3 Volume of Prisms 10-4 Combine Volumes of Prisms 10-5 Solve Word Problems Using Volume 10-6 Math Practices and Problem Solving: Use Appropriate Tools	5.MD.5c 5.MD.3a 5.MD.3b 5.MD.4 5.MD.5a 5.MD.5b	Topic 10	

18 - 26	Convert Measurements 11-1 Convert Customary Units of Length 11-2 Convert Customary Units of Capacity 11-3 Convert Customary Units of Weight 11-4 Convert Metric Units of Length 11-5 Convert Metric Units of Capacity 11-6 Convert Metric Units of Mass 11-7 Solve Word Problems Using Measurement Conversions 11-8 Math Practices and Problem Solving: Precision	5.MD.1 5.NBT.5 5.NBT.6 5.NBT.2	Topic 11	
10 - 14	Represent and Interpret Data 12-1 Analyze Line Plots 12-2 Make Line Plots 12-3 Solve Word Problems Using Measurement Data 12-4 Math Practices and Problem Solving: Critique Reasoning	5.MD.2 5.NF.2 5.NF.6	Topic 12	
12 - 17	Algebra: Write and Interpret Numerical Expressions 13-1 Order of Operations 13-2 Evaluate Expressions 13-3 Write Numerical Expressions	5.OA.1 5.OA.2	Topic 13	

	<p>13-4 Interpret Numerical Expressions</p> <p>13-5 Math Practices and Problem Solving: Reasoning</p>			
6 - 10	<p>Graph Points on the Coordinate Plane</p> <p>14-1 The Coordinate System</p> <p>14-2 Graph Data Using Ordered Pairs</p> <p>14-3 Solve Problems Using Ordered Pairs</p> <p>14-4 Math Practices and Problem Solving: Reasoning</p>	<p>5.G.1</p> <p>5.G.2</p>	Topic 14	
6 - 10	<p>Algebra: Analyze Patterns and Relationships</p> <p>15-1 Numerical Patterns</p> <p>15-2 More Numerical Patterns</p> <p>15-3 Analyze and Graph Relationships</p> <p>15-4 Math Practices and Problem Solving: Make Sense and Persevere</p>	<p>5.OA.3</p> <p>5.G.2</p>	Topic 15	
10 - 14	<p>Geometric Measurement: Classify Two-Dimensional Figures</p> <p>16-1 Classify Triangles</p> <p>16-2 Classify Quadrilaterals</p> <p>16-3 Continue to Classify Quadrilaterals</p> <p>16-4 Math Practices and Problem Solving: Construct Arguments</p>	<p>5.G.3</p> <p>5.G.4</p>	Topic 16	

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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