Revised 5-31-2019

El Monte Union High School District

Course Outline

District: EMUHSD
High School:_____

Course Title: Integrated Math Bridge 1 (MA389)

Textbook(s): Integrated Math 1 (HMH)

Copyright date/Edition: 2015

Transitional*_____(Eng. Dept. Only)

Sheltered (SDAIE)*___Bilingual*___

AP**_____Honors**_____

Department: ____Math_____

CTE*** :
Industry Sector:_____
Pathway:_____

Check One
Introductory:_____
Concentrator:_____
Capstone:_____

Grade Level (s): Incoming 9th

Semester (Summer) Year_____

Year of State Framework Adoption_____

This course meets graduation requirements:

( ) English
( ) Fine Arts
( ) Foreign Language
( ) Health & Safety
( ) Math
( ) Physical Education
( ) Science
( ) Social Science
(X) Elective

This course meets a-g requirements:

( ) "a" – Social Studies
( ) "b" – ELA
( ) "c" – Math
( ) "d" – Lab Science
( ) "e" – Language (not English)
( ) "f" – Vis/Perf Arts
( ) "g" – College prep elective

Department/Cluster Approval Date

_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

Is this course an adaptation from another source?

- ☐ No
- ☐ Yes

If yes, please indicate the source of the original course:

_____

_____

*Instructional materials appropriate for English Language Learners are required.

For AP/Honors course **attach a page describing how this course is above and beyond a regular course. Also, explain why this course is the equivalent of a college level class.

***For CTE, **attach the CTE course outline** created in the online template (http://ctecourse.scoe.net/).

1. Prerequisite(s):
   a. B or better in 8th Grade Common Core Math
      - AND
   b. Incoming 9th Grade students only
      - AND
   c. Have not successfully passed Integrated Math 1 or equivalent with a C or better in the 8th Grade

   NOTE: Recommended for incoming 9th grade students who have met the above prerequisites and wish to advance to Integrated Math 2.

2. Short description of course which may also be used in the registration manual:

- **Objectives of course**
  Integrated Math Bridge 1 is a one-semester summer course intended to provide incoming 9th grade students an opportunity to advance to Integrated Math 2 without taking Integrated Math 1. This course covers the majority of key concepts and standards from Integrated Math 1 to ensure students are successful in Integrated Math 2.

- **3-5 sentences explaining overall course content**
  The critical areas, organized into units, deepen and extend understanding of linear relationships in part by contrasting them with exponential phenomena, and in part by applying linear models to data that exhibit a linear trend. This course also uses properties and theorems involving congruent figures to deepen and extend understanding of geometric knowledge from prior grades. The Mathematical Practice Standards apply throughout each course and together with the content standards, prescribe that students experience mathematics as a coherent, useful and logical subject that make use of their ability to make sense of problem situations.

- **Indicate references to state framework(s)/standards (If state standard is not applicable then national standards should be used)**

  Refer to Integrated Math 1 California Common Core State Standards/Framework

- **Student performance standards**

  - Common Core Standards for Mathematical Practices:
    - Make sense of problems and persevere in solving them
    - Reason abstractly and quantitatively

- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

- Guidelines for Grading:
  - A 90-100%
  - B 80-89%
  - C 70-79%
  - D 60-69%
  - F 59% and Below

- **Evaluation/assessment/rubrics**

  - Formative and Summative Assessments
    - Chapter/Module Tests
    - Quizzes
    - Homework/Classwork Practice
    - Performance Tasks

- **Include minimal attainment for student to pass course**

  - Students must attain at least 60% D- overall average for all assignments (Tests, Quizzes, Homework, Classwork, Performance Tasks, etc).

3. Course content:

Integrated Math Bridge 1 Content Pacing Guide (For Reference Only)

Assignments: 30%	Tests: 40%	District Fall/Spring Final Exams: 30%		
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Day 1 **1.1** Solving Equations **1.2** Modeling Quantities **2.1** Modeling with Expressions **2.2** Creating and Solving Equations **2.3** Solving for a Variable	**Day 2** **2.4** Creating and Solving Inequalities **2.5** Creating and Solving Compound Inequalities **Test 1 (Mods 1 & 2)** **3.1** Graphing Relationships **3.2** Understanding Relations and Functions	**Day 3** **3.3** Modeling with Functions **3.4** Graphing Functions **4.1** Identifying and Graphing Sequences **4.2** Constructing Arithmetic Sequences **4.3** Modeling with Arithmetic Sequences	**Day 4** **Test 2 (Mods 3 & 4)** **5.1** Understanding Linear Functions **5.2** Using Intercepts **5.3** Interpreting Rate of Change and Slope **6.1** Slope-Intercept Form	**29** **No School**
Day 5 **6.2** Point-Slope Form **6.3** Standard Form **6.5** Comparing Properties of Linear Functions **19.5** Equations of Parallel and Perpendicular Lines **Test 3(Mods 5 & 6)**	**Day 6** **7.1** Modeling Linear Relationships **7.2** Using Functions to Solve One-Variable Equations **7.3** Linear Inequalities in Two Variables **Review Linear Systems (Use provided worksheet from resources)** **13.1**	**4** **No School**	**Day 7** **District Midterm** **13.2** Absolute Value Functions and Transformation **13.3** Solving Absolute Value Equations **13.4** Solving Absolute Value Inequalities	**Day 8** **Test 4 (Mod 13)** **14.3** Constructing Exponential Functions **14.4** Graphing Exponential Functions **15.1** Using Graphs and Properties to Solve Equations with Exponents **15.2** Modeling Exponential Growth and Decay **15.4** Comparing Linear and Exponential Models
Day 9 **Test 5 (Mod 14 & 15)** **16.1** Segment Length and Midpoints **16.2** Angle Measures and Angle Bisectors **19.1** Angles Formed by Intersecting Lines **19.2** Transversals and Parallel Lines	**Day 10** **Test 6 (Mod 16 not 16.3)** **19.3** Proving Lines are Parallel **19.4** Perpendicular Lines **17.1** Translations **17.2** Reflections	**Day 11** **Test 7 (Mod 19)** **17.3/17.4** Rotations/ Investigating Symmetry **18.1** Sequences of Transformations **18.2** Proving Figures Are Congruent Using Rigid Motions **18.3** Corresponding Parts of Congruent Triangles are Congruent	**Day 12** **Review Summer Final** **District Summer Final**	**13** **No School**

*For CCSS alignment, see Table of Contents at end of document.

4. Describe how this course integrates the schools SLO (former ESLRs- Expected School-wide Learning Results):

a. Academic Achievers: Students will further develop reading and writing skills via Performance Tasks.
b. Critical Thinkers: Students will use critical thinking skills in their reading analysis and their various writing

assignments.
c. Technology Competent Users: Usage of graphing calculators or various graphing software such as DESMOS.
d. Ethical, Respectful Individuals: Students will be respectful while working in diverse collaborative groups.
e. Active Community Participants: Students will develop skills that will increase their ability to participate in the community.

5. Describe the Integrated ELD teaching techniques to be used to meet the needs of English Language Learners:

a. Oral and academic language development will be utilized.
b. Study skills and Cornell notes will be emphasized.
c. RESEARCH BASED strategies and activities such as SIOP, AVID, metacognitive strategies, Marzano strategies, and Kinsella strategies will assist student learning.
d. Prior knowledge will be used to build connections and support new learning.
e. Vocabulary and content development will be highlighted.
f. Graphic organizers, visuals, realia, audio, and technology software will be utilized during instruction in order to support multiple learning modalities and Universal Design for learning.
g. Multiple teaching models will be utilized: Concept Attainment Model (CAM), Concrete-Pictorial-Abstract Model (CPAM), Explicit Direct Instruction
h. Engagement routines such as think-write-pair-share, text mark-up, and group and paired work.
i. Writing support scaffolds such as sentence-framing and paragraph-framing will be utilized.
j. Reasoning and justifying answers will be highly encouraged.
k. Flexible instructional organization for whole-class, group, paired and individualized learning will be implemented.

6. Describe the interdepartmental articulation process for this course:

Interdisciplinary articulation is ongoing and driven by a common need to improve mathematical competency skills school-wide. Continuous collaboration with the Science department will be implemented to reinforce application and utilization of mathematical skills across content areas.

7. Describe how this course will integrate academic and vocational concepts, possibly through connecting activities. Describe how this course will address work-based learning/school to career concepts:

Connections will be drawn between skills taught and practiced in this course to applications in various careers and to college readiness. Problem solving application and performance tasks will be emphasized. Students will be taught fundamental career skills such as reasoning, communicating, analyzing data, modeling, and interpretation and solving mathematical problem.

8. Supplemental Materials of Instruction
(Note: Materials of instruction for English Language Learners are required and should be listed below.)

Type of material (book, manual, periodical, article, website, primary source document, etc.)	**Publisher**	**Edition/ Year**	**URL**	**Primary book, read in its entirety? (Y/N)**
HMH Integrated Math 1 CA Teacher and Student Editions	Houghton Mifflin Harcourt	2015		Y
HMH Integrated Math 1 CA Response to Intervention Teacher Resources	Houghton Mifflin Harcourt Publishing Company	2015		N

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HMH Integrated Math 1 Unit/Module Detail

Unit 1: Quantities and Modeling

Module 1 – Quantitative Reasoning
- 1.1: Solving Equations
  - A-REI.1 Solve equations and explain each step
- 1.2: Modeling Quantities
  - N-Q.2 Scale factors, conversions
- 1.3: Reporting with Precision and Accuracy **NONE**
  - N-Q.3 Significant Digits

Module 2 – Algebraic Models
- 2.1: Modeling with Expressions **NONE**
  - A-SSE.1a Words to symbols
- 2.2: Creating and Solving Equations
  - A-CED.1 Word prob. w multi-step equations
- 2.3: Solving for a Variable
  - A-CED.4 Formulas, manipulating variables
- 2.4: Creating and Solving Inequalities
  - A-CED.3 Solve Inequalities, word problems
- 2.5: Creating and Solving Compound Inequalities
  - A-CED.1 Solve/graph, word problems

Unit 2: Understanding Functions

Module 3 – Functions and Models
- 3.1: Graphing Relationships
  - F-IF.4 Interpret graphs
- 3.2: Understanding Relations and Functions
  - F-IF.1 Domain, Range, map, vertical line test
- 3.3: Modeling with Functions
  - F-IF.2 Independent/Dependent, word problems
- 3.4: Graphing Functions
  - F-IF.1 Graph w tables, interpret graphs

Module 4 – Patterns and Sequences **(Covered in IM 3 Module 12)**
- 4.1: Identifying and Graphing Sequences
  - F-IF.3 Generating and graphing sequences
- 4.2: Constructing Arithmetic Sequences
  - F-LE.2 Using a general form to construct rules
- 4.3: Modeling with Arithmetic Sequences
  - F-BF.1a Word problems

Unit 3: Linear Functions, Equations, and Inequalities

Module 5 – Linear Functions
- 5.1: Understanding Linear Functions
  - F-LE.1b Graph standard from
- 5.2: Using Intercepts
  - F-IF.7a Graph using intercepts
- 5.3: Interpreting Rate of Change and Slope
  - F-IF.6 Slope from a graph, slope formula

Module 6 – Forms of Linear Equations
- 6.1: Slope-Intercept Form
  - F-IF.7a Derive and graph Slope-intercept form
- 6.2: Point-Slope Form
  - A-REI.1 Derive and graph point-slope form
- 6.3: Standard Form
  - A-CED.2 Manipulate equations into standard form
- 6.4: Transforming Linear Functions
  - F-BF.3 f(x)+k, kf(x), f(kx), f(x+k)
- 6.5: Comparing Properties of Linear Functions
  - F-IF.9 Compare given graphs, tables, descriptions

Module 7 – Linear Equations and Inequalities
- 7.1: Modeling Linear Relationships
  - A-CED.3 Represent constraints
- 7.2: Using Functions to Solve One-Variable Equations
  - A-REI.11 Determine approximate solutions
- 7.3: Linear Inequalities in Two Variables
  - A-REI.12 Graph linear inequalities

Unit 4: Statistical Models

Module 8 – Multi-Variable Categorical Data **(Covered in IM 2 Modules 22 and 23)**
- 8.1: Two-Way Frequency Tables
  - S-ID.5 Categorical data, two-way tables, frequency
- 8.2: Relative Frequency
  - S-ID.5 Conditional frequency, associations

Module 9 – One-Variable Data Distributions **(Covered in IM 3 Modules 20 and 21)**
- 9.1: Measures of Center and Spread
  - S-ID.2 Mean, median, range, standard deviation
- 9.2: Data Distributions and Outliers
  - S-ID.1 Dot plots, outliers, compare data distribute
- 9.3: Histograms and Box Plots
  - S-ID.2 Construct, compare, estimate

9.4: Normal Distributions
S-ID.2 Symmetry, properties, probabilities

Module 10 – Linear Modeling and Regression **(Covered in IM 2 Module 10)**
10.1: Scatter Plot and Trend Lines
S-ID.6c Correlation, causation, line of best fit
10.2: Fitting a Linear Model to Data
S-ID.6b Residuals, linear regression

Unit 5: Linear Systems and Piecewise-Defined Functions

Module 11 – Solving Systems of Linear Equations
11.1: Solving Linear Systems by Graphing
A-REI.6 Consistent, independent, special systems
11.2: Solving Linear Systems by Substitution
A-REI.6 Substitution
11.3: Solving Linear Systems by Adding or Subtracting
A-REI.6 Simple elimination
11.4: Solving Linear Systems by Multiplying First
A-REI.5 Elimination with multiplication

Module 12 – Modeling with Linear Systems
12.1: Creating Systems of Linear Equations
A-CED.3 Systems from tables, graphs, word problems
12.2: Graphing Systems of Linear Inequalities
A-REI.12 Graph, determine solutions
12.3: Modeling with Linear Systems
A-CED.3 Systems inequalities word problems

Module 13 – Piecewise-Defined Functions
13.1: Understanding Piecewise-Defined Functions **NONE**
F-IF.7b Explore, evaluate, graph
13.2: Absolute Value Functions and Transformation **(Covered in IM 3 Module 5)**
F-IF.7b Graphs
13.3: Solving Absolute Value Equations
A-REI.3.1 Solve by graphing and algebraically
13.4: Solving Absolute Value Inequalities **NONE**
A-REI.3.1 Solve by graphing and algebraically

Unit 6: Exponential Relationships

Module 14 – Geometric Sequences and Exponential Functions **(Covered in IM 3 Module 12 and 13)**
14.1: Understanding Geometric Sequences
F-LE.2 Growth patterns
14.2: Constructing Geometric Sequences
Recursive and explicit rules, derive general rules
14.3: Constructing Exponential Functions

F-LE.2 Construct from words and ordered pairs

14.4: Graphing Exponential Functions

F-IF.7e Tables, graphs, increase, decrease

14.5: Transforming Exponential Functions

F-BF.3 f(x), f(x)+k, kf(x), f(kx), f(x+k)

Module 15 – Exponential Equations and Models **(Covered in IM 3 Module 13 and 14)**

15.1: Using Graphs and Properties to Solve Equations with Exponents

A-CED.1 Solve algebraically and graphically

15.2: Modeling Exponential Growth and Decay

F-IF.7e End behavior, compare growth/decay

15.3: Using Exponential Regression Models

S-ID.6a Fitting, plotting, modeling

15.4: Comparing Linear and Exponential Models

F-LE.1c Choose between linear and exponential

Unit 7: Transformations and Congruence

Module 16 – Tools of Geometry

16.1: Segment Length and Midpoints

G-CO.1 Basic terms, construct bisector, midpoint

16.2: Angle Measures and Angle Bisectors

G-CO.1 measure/construct angles and bisectors

16.3: Representing and Describing Transformations

G-CO.2 Transformation using coordinate notation

16.4: Reasoning and Proof

G-CO.9 Inductive and deductive reasoning

Module 17 – Transformations and Symmetry

17.1: Translations

G-CO.4 Translations using vectors

17.2: Reflections

G-CO.4 Reflections using graph paper

17.3: Rotations

G-CO.4 Rotations using ruler and protractor

17.4: Investigating Symmetry

G-CO.3 Line and rotational symmetry

Module 18 – Congruent Figures

18.1: Sequences of Transformations

G-CO.5 combining rotations and reflections

18.2: Proving Figures Are Congruent Using Rigid Motions

G-CO.6 Congruence using rigid motion

18.3: Corresponding Parts of Congruent Triangles are Congruent

G-CO.7 CPCTC and proofs

Unit 8: Lines Angles, and Triangles

Module 19 – Lines and Angles
- 19.1: Angles Formed by Intersecting Lines
  - G-CO.9 Vertical, supplementary, complementary
- 19.2: Transversals and Parallel Lines
  - G-CO.9 Alternate interior, corresponding
- 19.3: Proving Lines are Parallel
  - G-CO.9 Construct parallel lines
- 19.4: Perpendicular Lines
  - G-CO.9 Construct Perpendicular lines & bisectors
- 19.5: Equations of Parallel and Perpendicular Lines
  - G-GPE.5 Slopes, writing equations

Module 20 – Triangle and Congruence Criteria
- 20.1: Exploring What Makes Triangles Congruent
  - G-CO.7 Properties of congruent triangles
- 20.2: ASA Triangle Congruence
  - G-CO.8 Decide if /prove congruent triangles
- 20.3: SAS Triangle Congruence
  - G-CO.8 Decide if /prove congruent triangles
- 20.4: SSS Triangle Congruence
  - G-CO.8 Decide if /prove congruent triangles

Module 21 – Applications of Triangle Congruence
- 21.1: Justifying Constructions
  - G-CO.12 Angle, perpendicular and angle bisector
- 21.2: AAS Triangle Congruence
  - G-SRT.5 Justify, prove and apply AAS
- 21.3: HL Triangle Congruence
  - G-SRT.5 Justify, prove and apply HL

Module 22 – Properties of Triangles
- 22.1: Interior and Exterior Angles
  - G-CO.10 In triangles and polygons
- 22.2: Isosceles and Equilateral Triangles
  - G-CO.10 Using properties to prove
- 22.3: Triangle Inequalities **NONE**
  - G-GMD.6 Find possible side lengths

Module 23 – Special Segments in Triangles
- 23.1: Perpendicular Bisectors of Triangles
  - G-C.3 Concurrency and using properties
- 23.2: Angle Bisectors of Triangles **NONE**

G-C.3 Inscribed circle and using properties

23.3: Medians and Altitudes of Triangles **NONE**

G-CO.10 Balance point, centroid, orthocenter

23.4: Midsegments of Triangles **NONE**

C-CO.10 Using triangle midsegment theorem

Unit 9: Quadrilaterals and Coordinate Proof

Module 24 – Properties of Quadrilaterals

24.1: Properties of Parallelograms

G-CO.11 Opposite sides/angles are congruent

24.2: Conditions for Parallelograms

G-CO.11 Using properties to prove parallelogram

24.3: Properties of Rectangles, Rhombuses, and Squares

G-CO.11 Sides, angles, diagonals

24.4: Conditions for Rectangles, Rhombuses, and Squares

G -CO.11 Using properties to prove

24.5: Properties and Conditions for Kites and Trapezoids

G -SRT.5 Using properties to prove

Module 25 – Coordinate Proof Using Slope and Distance

25.1: Slope and Parallel Lines

G -GPE.5 Use side slopes to classify figures

25.2: Slope and Perpendicular Lines

G -GPE.5 Use right angles to classify figures

25.3: Coordinate Proof Using Distance with Segments and Triangles

G -GPE.4 Distance and midpoint formulas

25.4: Coordinate Proof Using Distance and Quadrilaterals

G -CO.11 Prove properties quadrilaterals

25.5: Perimeter and Area on the Coordinate Plane

G -GPE.7 Areas of composite figures