Math
COURSE SYLLABUS

GRADE LEVEL: Two   SCHOOL YEAR: 2022-2023

TEACHERS: Mr. Eric Williams   EMAIL: ewilliams@dishs.tp.edu.tw

                  Mr. Charles Marks   cmarks@dishs.tp.edu.tw

COURSE DESCRIPTION:

The second-grade Math curriculum builds extensively on what was taught in first grade using the **McGraw-Hill Everyday Mathematics Grade** 3 textbook. The syllabus is planned and centered using the **Common Core State Standards** (CCSS).

The construction of Mathematical knowledge continues through the use of manipulative tools and problem-solving discoveries. Students acquire knowledge and skills, and develop an understanding of Mathematics from their own experience. This means that students will be provided with a wide range of meaningful experiences through applying Math in real life contexts and situations, where children will become actively involved in learning. In this way, students will be gradually aided in gaining understanding of the abstract and concrete.

The second grade Math curriculum is divided into six areas: **Number and Numeration; Operations and Computation; Data and Chance; Measurement and Reference Frames; Geometry; Patterns, Functions and Algebra.**

Number and Numeration: (1) Understand the Meanings, Uses, and Representations of Numbers through rote counting, place value and notation, meanings and uses of fractions and number theory. (2) Understand Equivalent Names for Numbers through the use of tally marks, arrays and numerical expressions; learn equivalent names for fractions, decimals and percentages (3) Understand Common Numerical Relations by comparing and ordering numbers

Operations and Computation: Learn to compute accurately through addition and subtraction facts and procedures. Make reasonable estimates through computational estimation. Understand meaning of operations through operational modeling.

Data and Chance: Select and create appropriate graphical representations of collected or given data; analyze or interpret data; understand and apply basic concepts of probability through qualitative probability practice.

Measurement and Reference Frame: Understand the systems and processes of measurement; Use appropriate techniques, tools, units, and formulas in making measurements. These understandings will be derived through the study of the following concepts: length, weight and angles; area, perimeter, volume and capacity; units and systems of measurement; money. We will also use and work to understand reference frames through the examination of temperature and time.

Geometry: Investigate characteristics and properties of two- and three-dimensional geometric shapes via the careful inspection of lines, angles, planes and solid figures. Apply transformations and symmetry in geometric situations.

Patterns, Functions and Algebra: Understand patterns and functions; use algebraic notation to represent and analyze situations and structures. Study arithmetic operations by familiarizing ourselves with the commutative and associative properties of addition.

COURSE OBJECTIVES:

Quarter 1
- ❖ Count and represent whole numbers as lengths from 0 on a number line.
- ❖ Practice partnership principles while solving addition and subtraction number stories.
- ❖ Count tallies and calculate the value of coin combinations.
- ❖ Use patterns to solve an open response problem.
- ❖ Explore even and odd numbers using concrete and visual models.
- ❖ Skip count on calculators and number grids.
- ❖ Look for place-value patterns.
- ❖ Explore place-value concepts with money.
- ❖ Write and solve addition number stories.
- ❖ Explore doubles and combinations of 10 to build fact fluency.
- ❖ Generate equivalent names for numbers.
- ❖ Solve an open-response problem using personal fact strategies.
- ❖ Write subtraction number stories.
- ❖ Generate addition and subtraction facts.

Quarter 2
- ❖ Discuss and use counting-up and counting-back strategies for subtraction.
- ❖ Explore the – 0 and – 1 fact strategies.
- ❖ Use doubles to solve subtraction facts.
- ❖ Use the going-back-through -10 strategy for subtraction.
- ❖ Use the going-up-through -10 strategy for subtraction.
- ❖ Explore rectangles, fact wheels and coins.
- ❖ Tell time to the nearest hour, half hour and five minutes using a.m. and p.m.
- ❖ Discuss place value and represent 3-digit numbers using base-10 blocks and expanded form.
- ❖ Make sense of a 3-digit number represented by base-10 blocks
- ❖ Analyze explanations and drawings.
- ❖ Use base-10 blocks to model addition and subtraction.
- ❖ Measure objects with a foot-long ruler.
- ❖ Use the inch and centimeter to measure.
- ❖ Match subtraction facts with arrays.

- ❖ Develop math-fact power by using mental strategies to add two 1-digit numbers.
- ❖ Use money for counting, making equivalencies and buying.
- ❖ Make arrays and match clock faces to digital notation.

Quarter 3
- ❖ Develop strategies for mentally adding and subtracting 10 and 100.
- ❖ Use an open-number line as a tool for solving number stories.
- ❖ Solve change-to-more number stories.
- ❖ Solve parts-and-total number stories.
- ❖ Solve change number stories involving temperature.
- ❖ Complete and open response problem by solving an addition problem.
- ❖ Draw picture and bar graphs to represent data sets.
- ❖ Solve comparison number stories.
- ❖ Choose diagrams to use for solving number stories.
- ❖ Solve two-step number stories.
- ❖ Make ballpark estimates.
- ❖ Invent and record personal strategies for solving addition problems.
- ❖ Use base-10 blocks to find partial sums.
- ❖ Build readiness for partial-sum addition.
- ❖ Subtract with base-10 blocks.
- ❖ Explore arrays, lengths and shapes.
- ❖ Find differences between 2-digit numbers and multiples of 10.
- ❖ Work on addition of four or more addends, and openly discuss solutions.
- ❖ Explore U.S. customary length units and measures to the nearest yard.
- ❖ Find personal references for metric units of measure.
- ❖ Choose appropriate units and tools to estimate and measure lengths.
- ❖ Measure lengths to nearest centimeter and inch.
- ❖ Discuss the shortest and longest standing jumps, and create plot lines with data.

Quarter 4
- ❖ Use arm spans to make a frequency table and make a line plot for a set of data.
- ❖ Sort shapes, draw a picture graph and measure body parts.
- ❖ Describe the attributes of 2-dimensional shapes.
- ❖ Identify shapes.
- ❖ Build and compare various polygons.
- ❖ Draw and reason about quadrilaterals.
- ❖ Sort and compare 3-D shapes.
- ❖ Partition rectangles into same-size squares.
- ❖ Solve number stories about equal groups and arrays.
- ❖ Build equal groups and arrays and write models for them.
- ❖ Describe attributes of shapes and build polygons with trapezoids.
- ❖ Work with fractions on a geoboard.
- ❖ Divide shapes and use fraction vocabulary.
- ❖ Explore equal shares of different shapes and use pattern blocks to divide shapes.
- ❖ Measure lengths to nearest half-inch.
- ❖ Write multi-digit numbers in expanded form and compare them.
- ❖ Use base-10 blocks to solve subtraction problems.
- ❖ Use expand-and-trade subtraction.
- ❖ Practice finding coin and bill combinations with equivalent values.
- ❖ Estimate costs.
- ❖ Solve number stories about two equal groups.

❖ Skip count and add to solve problems involving multiples of 10 and 5.

ASSESSMENT:

Students will be assessed with class participation, observation, homework, class work, objective quizzes/tests, oral responses, and quarterly exams. The student's final grade will be computed mainly based on three parts: performance tasks (homework and class work), quizzes and quarterly exams. Each part is weighted at one third of the total course grade.

Quizzes will relate to current and previous topics. A quiz may be given at any time during any class period—immediately after a lecture, at the beginning or end of a class, etc. Students absent from class for a test or a quiz must make arrangements to take the quiz or test some other time.

It is very important that you complete the assigned worksheets/Homework sections. Worksheets/Homework Sections and test papers will be checked for completeness and returned. The scores will be given.

PRIMARY TEXTBOOK & OTHER RESOURCES

*Everyday Mathematics-Gra*de 2, McGraw-Hill Education, 2016.

ADDITIONAL INFORMATION – Please see Google Classroom for more information.
Bl. Cecilia Class code: sgg6anr
St. John Macias Class Code:

Schedule of Instruction

1st QUARTER – TENTATIVE COURSE CONTENT

Week / Date	Topic / Projects / Assessments
Week 1 **Aug 10th to 12th** **3 Days of Class** *10~ First Day / Orientation Day*	**Unit 1: Establishing Routines** L1: Numbers all around L2: Number lines and partnership principles
Week 2 **Aug 15th to 19th** *Opening Mass*	L3: Math Tools L4: Class Number Scroll
Week 3 **Aug 22nd to 26th**	L5: Number-Grid Puzzles L6: Equivalent Names for Numbers L7: Playing *Fishing for 10* L8: *My Reference Book*, Quarters, and Math Boxes
Week 4 **Aug 29th to Sep 2nd**	L9: Even and Odd Number Patterns L10: Skip-Counting Patterns L11: Comparing Numbers and Home Links
Week 5 **Sep 5th to 9th**	L12: Explore Base-10 Blocks, Area and Dominoes

4 Days of Class *8~ Mass &Birthday Mother Mary* *9ᵗʰ – Moon Festival*	L13: Unit 1 Progress Check **Unit 2: Fact Strategies** L1: Grouping by 10s L2: Addition Number Stories
Week 6 **Sep 12ᵗʰ to 16ᵗʰ** FYI – Pre-Exam Days	L3: Doubles and Combinations of 10 L4: The Making-10 Strategy L5: The Near-Doubles Strategy L6: The Turn-Around Rule for Addition
Week 7 **Sep 19ᵗʰ to 23ʳᵈ**	L7: Subtraction and the Turn-Around Rule L8: Exploring Addition Tools, Odd and Even Patterns, and Shapes L9: Even Numbers and Equal Addends
Week 8 **Sep 26ᵗʰ to 30ᵗʰ** **2 Days of Class** *28-30 ~Teacher's Conference*	Review Quarter One Exam
Week 9 **Oct 3ʳᵈ to 7ᵗʰ** **3 Days of Class** *6-7 ~Q1 Exams*	Quarter Exam (half day)

2ⁿᵈ QUARTER – TENTATIVE COURSE CONTENT

Week / Date	Topic / Projects / Assessments
Week 1 (10) **Oct 10ᵗʰ to 14ᵗʰ** **4 Days of Class** *10 – Double 10 Holiday*	L10: Name-Collection Boxes L11: Playing *Name That Number* L12: Frames and Arrows L13: Unit 2 Progress Check
Week 2 (11) **Oct 17ᵗʰ to 21ˢᵗ**	**Unit3: More Fact Strategies** L1: Using Addition Strategies L2: Subtraction from Addition: Think Addition L3: Fact Families L4: *Playing Salute!*
Week 3 (12) **Oct 24ᵗʰ to 28ᵗʰ** *25-27 – Book Fair* *28- Masquerade Night* *TBA-Holy Rosary Mass*	L5: Subtraction Strategies: Counting Up and Counting Back L6: – 0 and – 1 Fact Strategies and *Subtraction Top-It* L7: "What's My Rule?" L8: Using Doubles to Subtract
Week 4 (13) **Oct 31ˢᵗ to Nov 4ᵗʰ** *1-All Saint's Day Mass*	L9: Going-Back-Through-10 Strategy for Subtraction L10: Going-Up-Through-10 Strategy for Subtraction L11: Exploring Rectangles, Fact Wheels and Coins L12: Unit 3 Progress Check
Week 5 (14) **Nov 7ᵗʰ to 11ᵗʰ**	**Unit 4** L1: Clocks and Telling Time L2: Telling Time to the Nearest 5 Minutes L3: A.M. and P.M.

Week / Date	Topic / Projects / Assessments
Week 6 (15) **Nov 14ᵗʰ to 18ᵗʰ**	L4: Numeration and Place Value L5: Using Place Value to Compare Numbers L6: Using Base-10 Blocks to Show a Number
Week 7 (16) **Nov 21ˢᵗ to 25ᵗʰ** *25 - YSC Contest* *25-Gr.12 Q2 Exam*	L7: Playing *Target* L8: *How Big Is a Foot?* L9: The Inch
Week 8 (17) **Nov 28ᵗʰ to Dec 2ⁿᵈ** FYI – Pre-Exam Days *28-Gr.12 Q2 Exam*	L10: The Centimeter L11: Matching Facts with Strategies, Measuring a Path and Exploring Arrays.
Week 9 (18) **Dec 5ᵗʰ to 9ᵗʰ** 8 - Foundation Day Celebrations	L12: Unit 4 Progress Check **Unit 5: Addition and Subtraction** L1: Playing *Beat the Calculator*
Week 10 (19) **Dec 12ᵗʰ to 16ᵗʰ** **3 Days of Class** *15-16 ~Q2 Exams*	**Quarter Two Exams**
Dec 20ᵗʰ to Jan 3ʳᵈ	**Christmas Break**

3rd QUARTER – TENTATIVE COURSE CONTENT

Week / Date	Topic / Projects / Assessments
Week 1 (20) **Jan 5 to 6ᵗʰ** **2 Days of Class**	L2: Using Coins to Buy Things L3: Counting Up with Money L4: Coin Calculations
Week 2 (21) **Jan 9ᵗʰ to 13ᵗʰ**	L5: Exploring Arrays, Time, and Shapes L6: Mentally Adding and Subtracting 10 and 100
Week 3 (22) **Jan 16ᵗʰ to 20ᵗʰ**	L7: Open Number Lines L8: Change-to-More Number Lines L9: Parts-and-Total Number Stories
Jan 23ʳᵈ to 27ᵗʰ	L10: Change Number Stories L11: Adding Multi-Digit Numbers L12: Unit 5 Progress Check **Unit 6: Whole Number Operations and Number Stories** L1: Representing Data: Pockets
Week 4 (23) **Jan 30ᵗʰ to Feb 3ʳᵈ**	

	Chinese New Year
Week 5 (24) **Feb 6th to 10th**	**Unit 6: Whole Number Operations and Number Stories** L2: Comparison Number Stories L3: Interpreting Stories L4: Animal Number Stories L5: Two-Step Number Stories L6: Recording Addition Strategies
Week 6 (25) **Feb 13th to 17th**	L7: Partial-Sums Addition, Part I L8: Partial-Sums Addition, Part II L9: Subtracting with Base-10 Blocks
Week 7 (26) **Feb 20th to 24th** *20-24 ~IOWA* *22 ~ Ash Wednesday Mass* *21-23 ~ Pre-Exam Days*	L10: Exploring Arrays, Length, and Shapes L11: Unit 6 Progress Check
Week 8 (27) **Feb 27th to March3rd** **3 Days of Class** *27-28 ~ 228 Memorial Day Holiday*	Quarter Three Exam Review
Week 9 (28) **March 6th to 10th** **4 Days of Class** *11 – Q3 Exams*	Third Quarter Exams

4th QUARTER – TENTATIVE COURSE CONTENT

(NB: Depending on time and interest, the teacher may delete and/or add other selections.)	
Week / Date	**Topic / Projects / Assessments**
Week 1 (29) **March 13th to 17th** **4 Days of Class** *13 – Q3 Exams* *14~ Q4 Begins*	**Unit 7: Whole Number Operations and Measurement and Data** L1: *Playing Hit the Target* L2: Four or More Addends L3: Playing *Basketball Addition* L4: Measuring with Yards
Week 2 (30) **March 20th to 24th** *20 ~ Fire Drill*	L6: Generating Data: Standing Jumps and Arm Spans L7: Representing Data: Standing JumpsL8: Representing Data: Arm Spans L9: Exploring Shapes, Attributes, Graphs and Measurements
Week 3 (31) **March 27th to 31st**	**Unit 8: Geometry and Arrays** L1: Attributes of 2-Dimensional Shapes L2: Playing *Shape Capture* L3: Comparing Triangles, Pentagons and Hexagons L4: Drawing and Reasoning about Quadrilaterals
Apr 3rd to 14th	**Easter Break**
Week 4 (33) **Apr 17th to 21st**	L5: Attributes of 3-D Shapes L6: Partitioning of Rectangles, Part I L7: Partitioning of Rectangles, Part II

	L8: Equal-Groups and Array Number Stories
Week 5 (34) **Apr 24ᵗʰ to 28ᵗʰ** *24-28 ~ AP Mock Exams*	L9: More Equal Groups and Arrays L10: Playing *Array Concentration* L11: Exploring Mystery Shapes, Polygons and Equal Parts L12: Unit 8 Progress Check
Week 6 (35) **May 1ˢᵗ to 5ᵗʰ** *2-4~ Pre-Exam* *1-5~ Final Exams (K, 5, 8, 12 only)* *1-5 ~ AP Exams*	Unit 9: Equal Shares and Whole Number Operations L1: Creating and Naming Equal Parts L2 Exploring Equal Shares, Pattern-Block Fractions, and Number Lines L3: Sharing Muffins L4: Fractional Units of Length
Week 7 (36) **May 8ᵗʰ to 12ᵗʰ** *8-12~ Final Exams(K, 5, 8, 12 only)* *1-5 ~ AP Exams*	L5: Reviewing Place Value L6: Expand-and-Trade Subtraction, Part I L7: Expand-and-Trade Subtraction, Part II L8: Equivalent Money Amounts
Week 8 (37) **May 15ᵗʰ to 19ᵗʰ** **3 Days of Class** *18-19~ Q4 Exams*	Quarter 4 Exam
Week 9 (38) **May 22ⁿᵈ to 26ᵗʰ** **4 Days of Class** *22~ Record Day* *23-26 ~ Student Clearance*	End-of-the-Year Activities