

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT



Math Lab

Board Approval Date: May 20, 2021	Course Length: 1 Semester
Grading: A-F	Credits: N/A
Proposed Grade Level(s): 6, 7, 8	Subject Area: Mathematics Elective Area (if applicable): N/A
Prerequisite(s): N/A	Corequisite(s): Concurrent enrollment in grade level math course
CTE Sector/Pathway: N/A	
Intent to Pursue 'A-G' College Prep Status: No	
A-G Course Identifier: N/A	
Graduation Requirement: No	
Course Intent: District Course Program (if applicable): N/A	
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COURSE DESCRIPTION:

This course is recommended for students performing three or more years below grade level on their district math diagnostic. Students will take this course concurrently with their grade level math course. The purpose of the course is to provide targeted intervention on the concepts and skills students are deficient in to bring them up to grade level. This course will feature daily number talks to build number sense and conceptual fluency of mathematics. This project-based course will focus on the essential math content standards necessary to master grade level standards in the major cluster areas. Students will maintain a portfolio composed of pre and post unit assessment data and projects to demonstrate growth of essential math standards and concepts covered throughout the course. Teachers will use a rubric to

provide meaningful feedback and measure student growth based on evidence collected in the student portfolios. Students will exit this course at the conclusion of the grading period.

DETAILED UNITS OF INSTRUCTION:

Unit Number/Title	Unit Essential Questions	Examples of Formative Assessments	Examples of Summative Assessment
1. Solving Problems with Data	How can you collect, organize, and display data? How do you interpret the data you have collected?	*Investigate: Data Tells Us about Ourselves *Data collection activity *Embedded Formative Assessment with a Gallery Walk and reflection identifying similarities and differences in the group data and what may have led to differences among groups	*Project: Student Choice: *Investigation of a classroom- or school-based question (Examples: What do teachers eat for lunch? How about students? How do students get to school?) *Development of a community-based research project (Examples: Designing a new playground. Determining a new book to order for the school library or classroom. *Standards Mastery Assessment
2. Thinking around Shapes	How can patterns be used to determine perimeter?	*Investigate: Get your arms around it. (Students are given a piece of string the length of their wingspan. Students predict which objects their string will fit around and record whether the string was too small or too large for each object.) *Embedded Formative Assessment: Object recording sheet and reflection demonstrating the ability to name the length of the string or distance as the perimeter.	*Project: Partner Choice *Garden Problem *Choose their own perimeter and generate shapes with the perimeter they chose *Students choose from four constraints and investigate the longest possible perimeter *Standards Mastery Assessment
3. Thinking in Equal Groups	How can multiples be used to solve problems?	*Investigate: Playing with Pairs-Activity where students develop ways to illustrate	*Partner Project: Dozens of Dice Students formulate strategies of

		<p>multiplication using manipulatives and pictures. Partners record their findings on a chart paper and look for patterns in their solutions.</p> <p>*Embedded Formative Assessment-Gallery walk where students look for and share out patterns they have noticed. Followed by a reflection where students generate conjectures based on these patterns.</p>	<p>grouping through a dice game.</p> <p>*Standards Mastery Assessment</p>
4. Seeing Multiplication as Area	How do area models relate to multiplication?	<p>*Investigate: Connecting Area and Perimeter. Activity where partners choose an area to explore and construct several rectangles with that area. Students record their findings from the shortest to longest perimeter.</p> <p>*Embedded Formative Assessment-Class discussion creating conjectures and any potential errors that need to be investigated further or corrected. Students write a reflection discussing the relationship between area and perimeter that they can see in the data.</p>	<p>*Project: Stadium Project</p> <p>*Students create a stadium of choice and explore optimization of area.</p> <p>*Standards Mastery Assessment</p>
5. Understanding $\frac{1}{2}$	How many ways can we use models to determine and compare equivalent fractions?	<p>*Investigate: The Many Shapes of $\frac{1}{2}$. Visual activity where students are asked to cut the various square grids given in half. Students are encouraged to come up with as many different ways as they can. In partner pairs students determine how they will prove that they have found half the square.</p> <p>Embedded Formative Assessment: In a reflection students will use one of their</p>	<p>*Investigation: Investigate the most compelling questions students generate and then discuss what students find.</p> <p>*Standards Mastery Assessment</p>

		grids and prove how they know the grid has been divided into halves.	
6. Seeing Fractions: The Parts and the Wholes	How do I identify and record the fraction of a whole or group?	<p>*Investigate: Taking a Fractional Walk. Students are given a perimeter of 17 units and record how many rectangles they make.</p> <p>*Embedded Formative Assessment: Partners will share their findings and make predictions about another perimeter they believe will require fractional side lengths. Reflection: Students will investigate and discuss which predictions did and did not produce fractional side lengths.</p>	<p>*Partner Project: Cover Up Game</p> <p>*Students create their own game boards using complex geometric images to find unit fractions.</p> <p>*Standards Mastery Assessment</p>
7. Being Flexible with Numbers	How can numbers be represented in different ways?	<p>*Investigate: Tile and Table Patterns. Partners create their own growing rectangle patterns on grid or dot paper and then locate their rectangles on the multiplication table.</p> <p>*Embedded Formative Assessment: Partners present the most interesting pattern they created, along with where it is located on the multiplication table.</p> <p>*Reflection: Students will investigate and reflect on their findings. What patterns are most surprising and why?</p>	<p>*Game: How close to 100?</p> <p>*Students think about different ways to make rectangles with the same area, building flexibility with factor pairs.</p> <p>*Standards Mastery Assessment</p>

ESSENTIAL STANDARDS:

Operations and Algebraic Thinking 3.

OA Major Clusters

Represent and solve problems involving multiplication and division. (3.OA.1–4)

Understand properties of multiplication and the relationship between multiplication and division. (3.OA.5–6)

Multiply and divide within 100. (3.OA.7)

Solve problems involving the four operations and identify and explain patterns in arithmetic. (3.OA.8–9)

Supports on-grade level standards:

Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

6.RP.A.1

Recognize and represent proportional relationships between quantities. 7.RP.A.2

Solve linear equations in one variable. 8.EE.C.7

Number and Operations—Fractions 3.NF

Major Clusters

Develop understanding of fractions as numbers. (3.NF.1–3)

Supports on-grade level standards:

Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

6.NS.C.6

Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. 7.NS.A.2

Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually and convert a decimal expansion which repeats eventually into a rational number. 8.NS.A.1

Measurement and Data 3.MD

Major Clusters

Geometric measurement: understand concepts of area and relate area to multiplication and to addition. (3.MD.5–7)

Supports on-grade level standards:

Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. 6.G.A.3

Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. 7.G.A.1

Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. 8.G.B.7

Geometry 3.G

Additional/Supporting Clusters

Reason with shapes and their attributes. (3.G.1–2)

Supports on-grade level standards:

Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. 6.G.A.1

Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. 7.G.A.2

Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. 8.G.C.9

RELEVANT STANDARDS AND FRAMEWORKS. CONTENT/PROGRAM SPECIFIC STANDARDS:

Link to Common Core Standards (if applicable):

Educational standards describe what students should know and be able to do in each subject in each grade. In California, the State Board of Education decides on the standards for all students, from kindergarten through high school.

<https://www.cde.ca.gov/be/st/ss/documents/ccssmathstandardaug2013.pdf>

Link to Framework (if applicable):

Curriculum frameworks provide guidance for implementing the content standards adopted by the State Board of Education (SBE). Frameworks are developed by the Instructional Quality Commission, formerly known as the Curriculum Development and Supplemental Materials Commission, which also reviews and recommends textbooks and other instructional materials to be adopted by the SBE.

<https://www.cde.ca.gov/ci/ma/cf/mathfwchapters.asp>

Link to Subject Area Content Standards (if applicable):

Content standards were designed to encourage the highest achievement of every student, by defining the knowledge, concepts, and skills that students should acquire at each grade level.

Link to Program Content Area Standards (if applicable):

Program Content Area Standards applies to programs such as International Baccalaureate, Advanced Placement, Career and Technical Education, etc.

TEXTBOOKS AND RESOURCE MATERIALS:

Textbooks

Board Approved	Pilot Completion Date (If applicable)	Textbook Title	Author(s)	Publisher	Edition	Date
No		<i>Mindset Mathematics: Visualizing and investigating big ideas, Grades 3, 4, and 5</i>	Boaler, Munson, Williams	Jossey-Bass	First Edition	2018

Other Resource Materials

You Cubed: <https://www.youcubed.org/> 3 Act Math: <https://whenmathhappens.com/3-act-math/> Open Middle: <http://www.openmiddle.com/> Classroom-Ready Number Talks for Conceptual Understanding and Computational Fluency, Nancy Hughes

Supplemental Materials

Board approved supplemental materials (Including but not limited to: Film Clips, Digital Resources, Supplemental texts, DVDs, Programs (Pebble Creek, DBQ, etc.):
N/A