Measurement & Data (continued)

a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.

b. An angle that turns through $n$ one-degree angles is said to have an angle measure of $n$ degrees.

6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.

Geometry

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. (Two-dimensional shapes should include special triangles, e.g., equilateral, isosceles, scalene, and special quadrilaterals, e.g., rhombus, square, rectangle, parallelogram, trapezoid.)

3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

Art (End of the Year Standards)

- Engage in activities that describe how the artist uses elements and principles to convey expressive qualities in artwork.
- Use a variety of media; create 2-D and 3-D works of art that communicate an idea.
- Explore common themes from different cultures as they relate to present day communities.

Music (End of the Year Standards)

- Write simple melodies and/or rhythm patterns.
- Analyze and describe music in terms of rhythm, melody, harmony, form, and timbre (tone quality).
- Sing and play musical instruments with increased accuracy (e.g., on pitch, in rhythm, with dynamics, and maintaining a steady tempo).
- Expressively sing or play songs of increasing difficulty including songs with simple harmony.
- Identify and discuss musical styles of two cultures.
- Explore music from California history.

Science (End of the Year Standards)

Students understand the following:

Physical Science: Electricity and magnetism are related effects that have many useful applications in everyday life.

- Life Science: All organisms need energy and matter to live and grow.
- Physical Science: The properties of rocks and minerals reflect the processes that formed them.
- Waves, wind, water, and ice shape and reshape the Earth’s land surface.

Investigation and Experimentation: The skill of asking meaningful questions and doing careful investigations increases scientific knowledge.

History/Social Science (End of the Year Standards)

- Demonstrate an understanding of natural and man-made geographical features.
- Describe the social, political, cultural and economic life and interactions among people of California from the pre-Columbian societies to the Spanish mission and Mexican rancho periods.
- Explain the economic, social, and political life of California from the establishment of the Bear Flag Republic through the Mexican-American War, the Gold Rush and California statehood.
- Explain how California became an agricultural and industrial power since the 1850’s.
- Understand the structures, functions, and powers of local, state and federal government.

Physical Education (End of the Year Standards)

- Movement Skills and Knowledge: Demonstrate correct technique with accuracy while manipulating an object in individual and small group games.
- Peer coach a partner during skill practice using specific feedback.
- Identify and participate in activities related to the physical fitness areas of strength, endurance, and flexibility.
- Self-Image, Personal Development, and Social Development: Demonstrate respectful attitudes while engaged in competitive activities.
- Participate regularly in physical activities for the purpose of improving skills and health.
- Follow rules, procedures, and etiquette while participating in physical activity.
- Accept responsibility for leading and/or following in group activities.
- Learn that the evolution of physical activity (e.g., games, sports, dance) is influenced by different cultures and geographical areas.

San Juan Unified School District
Common Core State Standards for Mathematics
Academic Standards for Science, History/Social Science, Music, Art, Physical Education, Technology and Health

Board of Education
Pam Costa, President
Paula Villegas, Vice President
Michael McKibbin Ed.D., Clerk
Zima Creason, Member
Saul Hernandez, Member

Administration
Kent Kern, Superintendent of Schools
Melissa Bassanelli, Deputy Superintendent, Schools and Student Support
Kent Stephens, Deputy Superintendent
Linda C.T. Simlick, J.D., General Counsel
Debra Calvin, Ed.D., Assistant Superintendent, Educational Services
Frank Camarda, Assistant Superintendent, Operations, Facilities and Transportation
Rick Messer, Assistant Superintendent, Secondary Education
Paul Oropallo, Assistant Superintendent, Human Resources
Jim Shoemake, Senior Director, Professional Learning and Innovation
Peter Skibitzki, Senior Director, Technology
Amberlee Townsend-Snider, Senior Director, Elementary Education
Use the four operations with whole numbers to solve problems:

1. Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5.

2. Represent verbal statements of multiplicative comparisons as multiplication equations.

3. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

4. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Gain familiarity with factors and multiples:

4. Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.

Generate and analyze patterns:

5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.

Number & Operations in Base Ten:

1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that 700 = 7 × 100.

2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

3. Use place value understanding to round multi-digit whole numbers to any place.

4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Number & Operations – Fractions:

1. Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)

2. Use equivalent fractions as a strategy to add and subtract fractions. Refer to the same whole, and understand comparisons of fractions with different numerators and different denominators, e.g., by using a visual fraction model.

3. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)

4. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.

5. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4).

6. Use whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Measurement & Data:

1. Know relative sizes of measurement units within one system of units including km, m, kg, g; lb., oz.; l, ml; hr., min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft. is 12 times as long as 1 in. Express the length of a 4 ft. snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), …

2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Estimate measurements using measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.

Represent and interpret data:

4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Geometric measurement: understand concepts of angle and measure angles:

5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.