Sacramento City Unified School District

6th Grade — Parent Guide for Understanding the Math Common Core

	Ratios and Proportional Relationships	The Number System	Expressions and Equations	Geometry	Statistics and Probability
Students will be able to:	• Solve word problems with ratios and proportions. • Understand and apply the concept of a unit rate. • Use the vocabulary of ratios and rates to describe relationships.	• Solve word problems requiring the division of fractions. • Extend number sense to include fractions and integers. • Represent and compare integers on a number line. • Graph (x, y) points in all four quadrants of the coordinate plane. • Fluently add, subtract, multiply, and divide multi-digit decimals. • Fluently divide multi-digit whole numbers.	• Evaluate expressions and formulas, including those with whole number exponents, for given quantities ($5x^2 - 1$ for $x = 3$). • Use properties of operations to identify and create equivalent algebraic expressions. • Connect real-world problems to a written equation or inequality with one variable.	• Find areas of composite polygons by decomposing them into triangles and rectangles. • Find volume of right rectangular prisms with fractional length edges. • Represent polygons on the coordinate plane by plotting points as vertices. • Represent three dimensional figures in nets composed of triangles and rectangles. • Solve real world problems.	• Understand the purpose of asking statistical questions • Use the vocabulary of statistics such as center, spread, median, mean, quartile and deviation. • Display and summarize a variety of statistical data including dot and box plots and histograms.
Schools will support by providing opportunities to:	• Use tables, equations, tape diagrams, drawings, double number lines and coordinate graphs, to solve real-world problems. • Reason with addition and multiplication to work with ratios, unit rates, and proportional relationships. • Practice correctly using terms such as *for every, for each,* and *per*.	• Learn multiple ways for division of rational numbers (fractions). • Solve problems involving the division of fractions by fractions using fraction models, drawings and equations • Understand integers (positive and negative numbers) and how they relate to absolute value, number operations, comparisons of length and position. • Use manipulatives such as counters, integer tiles, and number lines to understand properties of integers.	• Substitute values into common formulas to find quantities. • Create mathematical models for situations that occur in and out of the classroom using expressions, equations or inequalities. • Analyze models to draw conclusions and improve the model, if necessary. • Create logical arguments to explain why a pair of expressions that appear different are actually the same (ex: 2(x + 7) is the same as 2x + 14) and understand why each form could be useful in a given context. • Use estimation to check for reasonableness and justify solutions.	• Partition polygons using multiple approaches into familiar shapes to find area. • Fill right rectangular prisms with unit cubes to understand and derive the volume formula ($V = lwh$). • Use the coordinate plane to find vertical and horizontal side lengths of polygons.	• Make conjectures and test hypotheses by exploring questions relevant to students. • Collecting, displaying and analyzing data regarding their questions • Summarize, create and defend arguments based on findings.
Parents can support by:	• Ask your child to calculate the best value when shopping by using unit rates (e.g. 5 lbs. of bananas for $2.00 is a better buy than 3 lbs. of bananas for $1.50) • Ask your child questions while in the car such as "If we're driving 45mph, how long will it take to get to Grandma's house 20 miles away?"	• Practice balancing a checkbook seeing money spent as negative numbers and deposits as positive numbers. • Watch football together and calculate how many yards it is to the goal line.	• Keep track of cell phone costs with talk time fees and text fees.	• Fill a rectangular storage container with sugar cubes or same size Legos to find volume. • Assemble and disassemble pizza, gift, or cardboard storage boxes to see how their sections fit together to form a prism.	• Survey the family about their favorite food, color, or animals.

Sixth Grade Students:

- Apply concepts of proportional reasoning to solve word problems using ratios, rates, and unit rates.

- Expand their understanding of multiplication and division to include dividing fractions when solving word problems.

- Extend number sense by comparing integers and plotting ordered pairs on four quadrants of a coordinate plane.

- Write and interpret expressions and equations.

- Develop statistical thinking and display.

Resources:

Sacramento City Unified School District
http://www.scusd.edu/commoncoredept
✓ Links to documents for California (CCS) Common Core Standards, including videos for the Standards for Mathematical Practice

Parent-Teacher Association
http://www.pta.org/446.htm
✓ Parent Guides including key items that children should be learning in mathematics in each grade.

California Department of Education
http://www.cde.ca.gov/re/cc/index.asp
✓ Informational flyers provide overviews and highlights of the
     Math CCS
✓ Handouts for parents on transitioning to CCS
✓ Link to *Council of Great City Schools Parent Roadmaps*
✓ Links to *Smarter Balanced Assessments*

How Parents Can Support:

- Go bargain hunting in the grocery store with your child. Calculate

  the unit cost of items to find the best values.

- Keep track of changes in temperature using a thermometer as a

  vertical number line.

- Using two different-shaped drinking glasses, estimate which

  will hold the most volume. Find their actual volumes using a

  measuring cup.

- Plan a birthday party with your child. Have your child ask his

  friends for their favorite cupcake flavor and display the data in a

  way that makes sense.

- Share how you use math in your daily life.

- Encourage your child to be persistent if a problem seems difficult.

- When your child gets stuck on their homework, some questions

  to ask are:

  1) Can you tell me what you know now?
  2) What do you need to find out?
  3) Can you make a drawing or picture to get started?
  4) Can you show me what you did that didn't work?

How Things Have Changed:

Expectations of students have changed a great deal with the adoption of the Common Core State Standards in Mathematics. While getting the right answer is still a great achievement, students are now required to think mathematically, communicate their thinking, and justify their reasoning while continuing to develop a greater level of understanding of how math works.

Previous California Standards Assessment:

A car gets 24 miles per gallon of gasoline (mi/gal). How many gallons of gasoline would the car need to travel 144 miles?

Answer: 6 gallons

Common Core Standards Assessment:
-AN/PN sells gasoline for $3.08/gallon with an extra $0.45 surcharge for using a credit card.

-Union 67 sells gasoline for $3.12/gallon with no charge for using a credit card.

You want the best deal possible and have to use your credit card. Which gas station will you stop at to fill your empty tank and why?

Answer:

The best deal depends on the amount of gas you buy. If you are getting 10 gallons it costs $31.25 at AN/PN, and $31.20 at Union 6; Union 67 is cheaper. If you are getting 12 gallons it costs $37.41 at AN/PN, and $37.44 at Union 67; AN/PN is cheaper.