4th Grade Parent Guide for Understanding the Math Common Core

	Operations and Algebraic Thinking	Number and Operations in Base Ten	Numbers and Operations-Fractions	Measurement and Data	Geometry
Students will be able to:	• Solve multi-step word problems with whole numbers involving addition, subtraction, multiplication, and division. • Interpret and show problem-solving situations with algebraic symbols and quantities. • Identify factors and multiples within 100, and understand meaning of prime numbers.	• Multiply and divide multi-digit numbers and explain thinking. • Use the base 10 system to read, write, compare, calculate, and round multi-digit numbers. • Fluently add and subtract using standard processes.	• Recognize and generate equivalent fractions. • Compare fractions with unlike numerators and denominators. • Add and subtract fractions and mixed numbers with like denominators. • Extend understanding of multiplication of whole numbers as repeated addition to multiplication of fractions. • Express decimals as fraction equivalents with denominators of 10 or 100. • Compare decimals to hundredths place value.	• Know sizes of measurement units (12 in. = 1 ft.). • Solve word problems that involve changing measurement units. • Use area and perimeter formulas for rectangles in real-world problems. • Generate and display data expressed as fractions in a line plot. • Understand angle measurement	• Draw and identify perpendicular and parallel lines. • Draw and identify right, acute and obtuse angles. • Use geometric properties to classify shapes. • Identify symmetric figures • Draw line(s) of symmetry.
Schools will support by providing opportunities to:	• Use problem-solving strategies such as drawings and equations which represent thinking processes. • Use estimation, mental math and knowledge of properties of numbers to see if a solution is reasonable. • Generate number patterns for factors and multiples within 100.	• Multiply and divide multi-digit numbers in real-world situations. • Compare two numbers by extending understanding of base-10 system. • Show thinking when multiplying multi-digit numbers using drawings, models, written and verbal explanations.	• Use visual fraction models to help students understand quantities. • Compare fractions and justify conclusions through a variety of methods. • Extend students' knowledge of whole number properties of operations to take apart fractions in multiple ways using a variety of methods. • Solve word problems involving fractions and decimals, and justify conclusions. • Compare decimals using tens models, hundreds grids, place value charts and circle models.	• Use a variety of units (cm, m, lb., and min.) in real-world problems selecting appropriate units based on context. • Display and analyze measurement data in line plots, two-column charts, and bar graphs. • Draw and measure angles using a protractor.	• Draw figures with features such as right angles and parallel sides. • Sort shapes based on characteristics (triangles with angles that are acute, right or obtuse). • Determine symmetry by folding shapes in half.
Parents can support by:	• Ask comparison problems such as "I'll give you two cookies, if I give your brother three times as many as you, how many cookies would he get?" • Have your child estimate cost of a cart full of groceries.	• Have your student explain to you new methods of multi-digit multiplication they have learned.	• Cook with your child. Double or cut in half a cookie recipe and have your child tell you how much sugar, flour, etc. is needed. • Ask questions like, "If each person coming to your party eats 3/8 of a pizza, and 20 people are coming, how many whole pizzas do we need?"	• Tell your child to find how many minutes or seconds it is until school starts tomorrow. • Find heart rate per minute and use it to calculate the number of times your heart will beat in an hour. • Create drawings and measure or estimate angles included.	• Ask your child to make artwork including specific features such as parallel lines and obtuse angles. • Find objects at home that can be describe using three or more geometric words (the computer has right angles, parallel and perpendicular sides).

Fourth Grade Students:

- Solve multi-step word problems using addition, subtraction, multiplication, and division with whole number solutions.
- Represent the problem situations using equations which include letters to represent an unknown quantity.
- Multiply and divide multi-digit numbers.
- Apply place- value understanding to read, write, compare, round, and calculate whole numbers.
- Compare fractions with unlike denominators, generate equivalent fractions, add and subtract fractions with like denominators, and express decimals as fraction equivalents with denominators of 10 or 100.
- Solve problems that include changing measurement units. Draw and identify angles, parallel and perpendicular lines, and lines of symmetry.

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:

- Ask your child to compute the "best deals" for groceries when shopping.
- Have your child calculate the distance to different locations you visit using a map.
- Measure plants growing in the garden, and chart their growth.
- Play games that include adding, subtracting, and multiplying such as Yahtzee, Phase 10, Uno, Dominoes, and Backgammon.
- Have your child help prepare food from a recipe by measuring ingredients, estimating servings, and calculating preparation times
- 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 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?

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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:

2835 ÷ 3 =

Answer: 945

Common Core Standards Assessment:
Are the answers below correct? If you think the answer is incorrect, tell how you know the given answer is too large or too small. Then calculate to see if you were incorrect.

a. $\frac{8,638}{7} = 123.4$ b. $\frac{6,785}{5} = 1,357$

c. $\frac{696}{8} = 5,568$ d. $\frac{2,961}{6} = 493.5$

Answer: a. incorrect ; 1234
b. correct
c. incorrect; 87
d. correct