Tips and Activities for Parents

- Play card and board games with your child.
- Have your child search the newspaper ads for new car prices. Cut the prices out and arrange these numbers from least to greatest and vice versa. Tell your child to line the numbers up; then look to see what place the digits are in to determine how they should be arranged.
- Engage in estimations with your child. Ask "How far do you think it is from here to the corner? The mall? School?" "How tall do you think that tree is?" When you go shopping, say "I can only spend $25, so you try to estimate when we are close to the limit."
- Work with your child to do a simple investigation such as keeping track of the times for the sunset or sunrise from the newspaper or television weather report over a period of time (such as on the Monday of every week for five or six weeks). Have your child make a graph of the sunrise or sunset times and talk about how the times are changing.
- Create a set of cards to help your child practice basic multiplication and division. For example, write a "fact" such as 5 x 7 on one side of the card. On the other side draw a picture of 5 x 7 by drawing 5 rows of circles with 7 circles in each row. Under the drawing write 35.

Internet Resources for Fourth Grade Math

This site is sorted by grade level. Fourth graders can study basic math skills using unlimited interactive practice explanations and examples. The site also includes challenge games.
www.aaamath.com/grade4.html

This site contains grade 4 mouse lessons. Be sure you have a paper copy of the follow-up exercises. For some more great math games there are many links provided on this site.
www.cemc2.math.uwaterloo.ca/mathfrog/english/kidz/Games4.shtml

There are many activities on this fun brain site. www.funbrain.com/cgi-bin/getskill.cgi

For students in the fourth grade who want to improve their mathematics skills - try these pages.
www.kidport.com/Grade4/Math/MathIndex.htm

Free 3rd grade and 4th grade worksheets and games for math, science and phonics including addition online practice, subtraction online practice and more.
www.softschools.com/grades/3and4.jsp

A site of third and fourth grade math games including Math Magician, Spacey Math Video Game for addition, subtraction, division, multiplication.
www.nksd.net/admin/isdata/Websites/thirdfourth.html

Visit "Mathematics Counts & Science Matters" at
www.promse.msu.edu

MICHIGAN STATE UNIVERSITY

PROMSE Promoting Rigorous Outcomes in Mathematics and Science Education

"Mathematics Counts & Science Matters" provides parents of children in grades K-8 with helpful resources they can use to support their child's math learning. Mathematics Counts & Science Matters is developed by Michigan State University's PROM/SE (Promoting Rigorous Outcomes in Mathematics and Science Education).
Funded by Michigan State University and the National Science Foundation.

A Parent Guide to

Mathematics

Grade 4

Important math concepts in the 4th grade include multiplying and dividing with whole numbers and understanding fractions and decimals. Based on Michigan Grade Level Content Expectations, the following describes some of the central mathematical skills and understandings that students should acquire by the end of fourth grade.

Number and Operations

Representation and Place Value

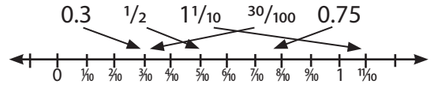
1. Read, write, compare, and order numbers to one million; write numbers using place value (e.g., 2,068 is 2 thousands, 0 hundreds, 6 tens, and 8 ones)
2. Find all factors of any whole number through 50 and recognize some numbers as prime (e.g., 3 is prime because it only has two factors, 1 and 3)
3. List the first ten multiples of a one-digit whole number and determine if a whole number is a multiple of a number (e.g., 3, 6, 9,12,15,18, 21, 24, 27, 30 are all multiples of 3; 14 is not a multiple of 3)
4. Use mental math strategies to estimate and calculate with whole numbers (e.g., 237 + 574 =□, mentally think 200 + 500 = 700, 30 + 70 = 100, 700 + 100 = 800, add the 7 + 4 or 11 to get a total of 811)

Multiplication and Division of Whole Numbers

5. Multiply any whole number by a one-digit number and a three-digit number by a two-digit number
6. Divide numbers up to four-digits by one-digit numbers and by 10
7. Find the value of the unknown in simple mathematical equations, such as find ***a*** if ***a*** **÷ 10 = 25** or find ***b*** if **120 ÷ *b* = 20**

Fractions and Decimals

8. Locate fractions, mixed numbers, and decimals (tenths and hundredths) on a number line (e.g. find these on the given number line: 0.3, $\frac{1}{2}$, $1\frac{1}{10}$, $\frac{30}{100}$, 0.75)



9. Compare and order up to three fractions with denominators 2, 4, and 8, and 3, 6, and 12, including mixed numbers (e.g. $\frac{5}{8} < \frac{3}{4}$)
10. Find and recognize equivalent fractions and explain why they are equal; know decimal and fraction forms for tenths, hundredths, halves and fourths (e.g., $\frac{3}{10} = \frac{30}{100} = 0.3$; $\frac{1}{4} = \frac{25}{100} = 0.25$)
11. Read, write, interpret, and compare decimals through hundredths; relate decimals to money and place value (e.g., 0.14 is fourteen hundredths; $0.14 =14 cents)

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Mathematics — Grade 4 (cont.)

12. Add and subtract fractions less than 1 with denominators of 2 through 12 and 100, where the denominators are equal or when one denominator is a multiple of the other (e.g., ⅓ + ⅙ = ⅜); add and subtract decimals through hundredths
13. Multiply fractions by whole numbers; multiply and divide decimals up to two decimal places by a one-digit whole number (e.g., 0.42 ÷ 3 = 0.14)

Measurement

Units of Measure

14. Convert from one unit of measure to a larger or smaller unit of measure (e.g., meters to centimeters, hours to minutes, feet to inches, ounces to pounds)
15. Know and use formulas to find perimeter and area of squares and rectangles (e.g., given a rectangle has an area of 10 square inches and one of the sides is 2 inches, find the missing dimension)
16. Measure using common tools (e.g., ruler, meter stick, thermometer) and select appropriate units of measure

Geometry

Lines and Shapes

17. Identify and draw perpendicular, parallel, and intersecting lines and relate angles formed by these lines to right angles (e.g., square corners, 90°)
18. Identify basic two- and three-dimensional geometric shapes and solids (e.g., equilateral and right triangles, rectangular prisms and pyramids) and use their relationships to solve problems
19. Move a shape by flipping, sliding, or rotating it; identify symmetry in shapes

Data and Probability

Represent and Solve Problems

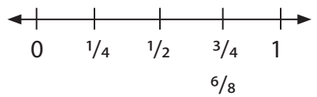
20. Order a list of numbers, find the median and the range of values
21. Solve problems using data presented in tables and bar graphs

Glossary — Grade 4

- **Angle** – a figure formed by two rays that meet at a common endpoint

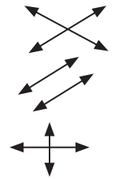
- **Area** – the number of square units that fit inside and cover the interior of the figure with whole number side lengths
- **Equilateral Triangle** – a triangle with all sides the same length
- **Equivalent Fractions** – expressions of the form $^{a}/_{b}$, where $b \neq 0$, that name the same number (and so, are represented by the same point on the number line)

Example: $^{3}/_{4} = {}^{6}/_{8}$



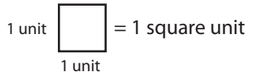
Glossary — Grade 4 (cont.)

- **Factors** – positive whole numbers that divide a given number with no remainder (e.g., factors of 12 are 1, 2, 3, 4, 6, 12)
- **Lines** -
  - **Intersect** – lines intersect if they have a point in common
  - **Parallel** - lines that never meet
  - **Perpendicular** – two lines that intersect and form right angles

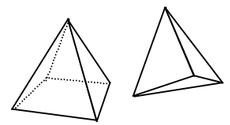


- **Line Symmetry** – the characteristic of a figure when it can be folded along a line so the two halves match exactly

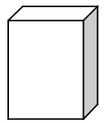
- **Perimeter** – the distance around the outside (boundary) of a shape
  Example: Find the area and perimeter of the rectangle



- **Place Value** - the amount represented by the position of a digit in a number (e.g., in 234, 3 is in the tens position and represents 3 tens)
- **Prime Number** – a whole number that has exactly two factors (whole number divisors), 1 and itself (e.g., 2, 3, 5, 7)
- **Median** – the middle value for an ordered list of data, half the data occur above the median and half the data occur below the median
  Examples:
  a) For five families with 1, 2, 2, 3, and 5 children, the median number of children is 2
  b) For six families with 1, 2, 2, 3, 3, and 5 children, the median number of children is 2.5
- **Mixed Number** – a whole number plus a fraction (e.g., 3 ½ is a mixed number)
- **Multiples of a Number** – Multiplying a given whole number by another whole number (e.g., multiples of 4 would be 4, 8, 12, 16,…. because 4 × 1 = 4, 4 × 2 = 8 4 x 3 = 12, and so on)
- **Pyramid** – a solid figure whose faces are triangles that meet at a common vertex, with a polygon base (e.g., triangle, rectangle)



- **Range** – the difference between the least value and the greatest value in a list of numbers (e.g., for six families with 1, 2, 2, 3, 4, and 5 children, the range is 4, since 5 - 1 = 4)
- **Rectangular Prism** – a solid figure with six faces (sides) that are all rectangles; represented by a cereal box



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