

## Mathematics

## Tips and Activities for Parents

- Practice counting money and making change. For example, ask your child questions like: "I have two quarters and two dimes. How much money do I have?" or "I have some coins in my pockets that equal 90 cents. What combinations of coins could be in my pocket?" Practice writing the value of money using the cent sign (¢) and in decimal form using the dollar sign (\$).
- A grocery store is filled with geometric shapes. Ask your child to find items shaped like circles, rectangles or cones, or shapes that stack well and those that take up lots of space.
- Measure things around the house together. Ask your child to measure the height of the table or width of a door. Set out a ruler, yardstick or scale and ask your child to measure or weigh something using the correct tool.
- Ask your child to draw a timeline that puts the events of his or her day in order.

## Internet Resources for Second Grade Math

Math Facts can be a timed drill or you can select practice mode without the timer. Elementary Math Grade 2 - 180 Days of Daily Math Questions.  
[www.internet4classrooms.com/skills\\_2nd.htm](http://www.internet4classrooms.com/skills_2nd.htm)

Students can practice addition (numbers to 50) · addition (numbers to 100) · subtraction (numbers to 12) · subtraction (2 digit numbers) · multiplication (numbers to 12).  
[www.kidport.com/grade2/Math/MathIndex.htm](http://www.kidport.com/grade2/Math/MathIndex.htm)

A comprehensive, award-winning site makes math practice a joy! [www.ixl.com](http://www.ixl.com)

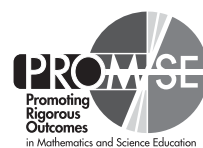
Games you can play online, interactive tutorials, fun math websites and more. Free Math Worksheets. [www.homeschoolmath.net/worksheets/](http://www.homeschoolmath.net/worksheets/)

Free math worksheets to print for preschool through fifth grade and a great math site for parents. Three Digit Multiplication - multiplication drill sheet.  
[www.tlsbooks.com/mathworksheets.htm](http://www.tlsbooks.com/mathworksheets.htm)

Visit "Mathematics Counts & Science Matters" at [www.promse.msu.edu](http://www.promse.msu.edu)

Local Partner: SMART Consortium [www.smartconsortium.org](http://www.smartconsortium.org)

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"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. The content of this guide is based on grade-level recommendations from the National Council of Teachers of Mathematics, the National Mathematics Panel, and PROM/SE: Promoting Rigorous Outcomes in Mathematics and Science Education.

These recommendations may be more advanced than state guidelines. Mathematics Counts & Science Matters is developed by Michigan State University's PROM/SE (Promoting Rigorous Outcomes in Mathematics and Science Education).

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■ Second graders expand their study of addition and subtraction of whole numbers and begin to learn concepts of multiplication and division. Based on national curriculum recommendations and reflecting Ohio Academic Content Standards, the following describes some of the central mathematical skills and understandings that students should acquire by the end of second grade.

## ■ Number and Operations

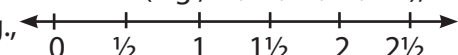
## Represent Numbers and Place Value

1. Count orally by 1s, 10s and 100s starting at any number, by 3s and 4s starting at 0, and by 2s, 5s, and 10s starting at any number
2. Read and write numbers to 1000 and compare and order them using the symbols  $>$  (is greater than) and  $<$  (is less than)
3. Write numbers through 999 using place values (e.g.,  $127 = 1 \text{ hundred} + 2 \text{ tens} + 7 \text{ ones}$ )

## Addition and Subtraction

4. Find the distance between numbers on the number line (e.g., How far is 79 from 26?) and missing values in open sentences (e.g.,  $42 + \square = 57$ )
5. Add and subtract two numbers through 99
6. Solve problems that involve addition and subtraction using numbers through 99

## Understanding Multiplication, Division, and Fractions

7. Represent multiplication of whole numbers by counting equal groups of numbers (e.g.,  $3 \times 5$  is 3 groups of 5 objects:  $3 \times 5 = 5 + 5 + 5 = 15$  objects)
8. Understand that division "undoes" multiplication and use fact families for multiplication and division by whole numbers less than 6 (e.g.,  $2 \times 3 = 6$ ,  $6 \div 2 = 3$ ,  $6 \div 3 = 2$  is a fact family)
9. Represent and solve multiplication and division problems using objects, words, and pictures
10. Know multiplication facts up to  $5 \times 5$
11. Recognize, name, and write commonly used fractions (e.g.,  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{2}{3}$ ,  $\frac{1}{4}$ ,  $\frac{2}{4}$ ,  $\frac{3}{4}$ ), and represent unit fractions with denominators 12 or less (e.g.,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{1}{8}$ ,  $\frac{1}{10}$ ), and place 0 and halves on the number line (e.g., 

## ■ Measurement – Length, Area, Time, and Money

12. Measure lengths in meters, centimeters, inches, feet, and yards to the nearest whole unit and record lengths using abbreviations: cm, m, in, ft, yd

(continued on inside)

# Mathematics — Grade 2 (cont.)

## ■ Measurement – Length, Area, Time, and Money (cont.)

13. Find the perimeter of shapes and find the area of a rectangle with whole number side lengths by counting unit lengths for perimeter and unit squares for area
14. Tell and write time from the clock face in 5-minute intervals and from digital clocks to the minute (e.g., 9:15 as nine-fifteen) and interpret time as minutes before the hour and minutes after the hour (e.g., 8:50 as eight-fifty and ten to nine)
15. Read and write amounts of money using decimal notations (e.g., \$1.15)
16. Add and subtract money in mixed units (e.g., \$2.50 + 60 cents and \$5.75 - \$3)




## ■ Geometry – Shape and Space

17. Identify, describe, and compare familiar two-dimensional and three-dimensional shapes (e.g., triangles, rectangles, squares, circles, semi-circles, spheres, and rectangular prisms)
18. Classify familiar two-and three-dimensional objects (e.g., square, rectangle, rhombus, cube, pyramid, rectangular prism, cone, cylinder, and sphere) by common attributes such as shape, size, roundness, or number of corners and explain which attributes are being used for classification

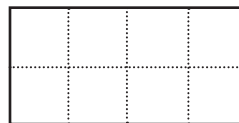
## Glossary — Grade 2

■ **Attributes** – words that describe an object; characteristics such as size (e.g., length, width, weight, capacity), time, shape, etc.

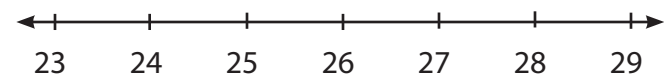
■ **Area (of Rectangle)** – the number of square units that fit inside and cover the interior of a rectangle

Example:  = 1 square unit

The rectangle has an area of 8 square units.




■ **Number Line** - a line used to represent numbers (as points) according to their value, numbers to the right increase in value and numbers to the left decrease in value (e.g., 25 is to the right of 24, so it is greater than 24)



## Glossary Grade 2 (cont.)

■ **Perimeter** – the number of unit lengths needed to go around a shape

Example: The rectangle has a perimeter of 12 units

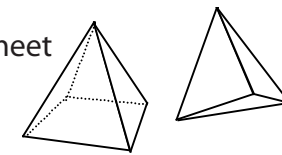
1 unit  = 1 square unit  
1 unit



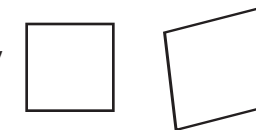
Area = 8 square units  
Perimeter = 12 units

■ **Place Value** – the value of the position of a digit in a number (e.g., in 634, the 3 is in the tens place because it represents 3 tens or 30)

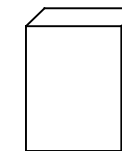
■ **Pyramid** – a solid figure whose faces are triangles that meet at a common vertex, with a polygon base (e.g., triangle, rectangle)



■ **Rhombus** – a closed figure made of four line segments, equal in length, connected at endpoints



■ **Rectangular Prism** – a solid figure with six faces (sides) that are all rectangles (i.e., a cereal box)



■ **Sphere** – a three-dimensional figure represented by a ball; all points on a sphere are an equal distance from a center point



■ **Whole Numbers** – numbers belonging to the set (0, 1, 2, 3, 4, 5 ...)