This guide provides a summary of what your child will learn by the end of second grade in mathematics in the state of Kansas. This guide will also give some examples of the second grade mathematics so you can assist your child. To view the standards in their entirety, please go to:

http://community.ksde.org/Default.aspx?tabid=5276

The Mathematics Standards are divided into two sections. The first section is the same for every grade level from Prekindergarten to 12th Grade and is described below. The Standards for Mathematical Practice address *how* mathematics is to be taught and *how* the students are to engage with the mathematics. The second section outlines the content at each grade level.

Standards for Mathematical Practice   2nd

1. Making sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning.

Your child will be taught skills that will encourage critical thinking and problem solving. Some examples include:

➢ Teachers will ask students if answers "make sense" and will expect students to find more than one way to a solution.
➢ Students will be expected to read a word problem and create an equation to match that word problem, even 2-step problems.
➢ Students will explore similarities and differences between different types of strategies to solve problems.
➢ Teachers will begin to expect students to use multiple math tools & be able to explain which ones are more appropriate for situations.
➢ Students will explore the structure of mathematics. They will see how addition and subtraction are related. $33 + \_\_\_ = 52$ can also be seen as $52 - 33 = \_\_\_\_\_$.
➢ Students will use the properties of operations by decomposing numbers. They see that $27 + 45$ can be decomposed into place values and added: $(20 + 40) + (7 + 5) = 60 + 12 = 72$.

Content Standards for Mathematics   2nd

The specific skills and content your child will be taught come from the content standards. The domains are listed with <u>some</u> examples of the mathematics at the 2nd grade level.

Operations and Algebraic Thinking:
➢ Add and subtract within 20 using mental strategies. (Ex: Doubles; Doubles +1: Make a Ten)
➢ Solve one- and two-step word problems with a symbol to represent the unknown.
➢ Set the foundation for multiplication by exploring rectangular arrays.

Number and Operations in Base Ten:
➢ Work with three-digit numbers and determine hundreds, tens, and ones.
➢ Understand that 235 can be 2 hundreds, 3 tens and 5 ones, but it can also be 1 hundred, 13 tens and 5 ones OR 23 tens and 5 ones OR 2 hundreds, 2 tens, and 15 ones. (This understanding will help with computation in later grades.)
➢ Add & subtract within 100 using strategies based on place value and properties of operations.

Measurement and Data:
➢ Measure and estimate lengths using inches, feet, centimeters and meters.
➢ Tell & write time from analog & digital clocks to the nearest five minutes, using a.m. & p.m.

Geometry:
➢ Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
➢ Partition circles and rectangles into halves, thirds, and fourths.

Activities for 2nd Graders

2nd grade students are expected to be fluent with their addition and subtraction facts by the end of 2nd grade. This learning should be based on relationships and strategies. Strategies lead to better fluency and retention. You can help you child more fully develop fact fluency by using the following strategies:

- ❖ Encourage finding tens when adding numbers. Example: $8 + 5 = ?$. Take 2 from the 5 and put it with 8 to make 10. Then 10 with the remaining 3 makes a total of 13.
- ❖ Finding doubles is a strategy that many students find useful. Example: $6 + 7 = ?$. Find the "hidden double" of $6 + 6 = 12$ and then just add the one more from the 7 to get 13.

Two-Step Word Problems

2nd grade students will move from solving one-step problems to two-step problems. You can assist your child by talking about math problems in daily life.

- ❖ For the family dinner this weekend, I am buying 12 cupcakes. Aunt Joan is buying 12 cupcakes. 28 people coming to the dinner. Are there enough cupcakes?
- ❖ There are 8 pencils in the kitchen drawer and 7 pencils in the desk drawer. If I give you and your brother 4 pencils to take to school, how many pencils will we have left?
- ❖ There were some eggs in the carton this morning. I used 4 of them to make scrambled eggs and someone made a hard-boiled egg. There are 3 left. How many were in the carton when I started this morning?

Encourage mental math and strategy work when driving in the car or at the dinner table.

- ❖ **Add 10 or 100 – Quick!** – Think of a number or spot a number outside the car. Announce the number and have your child tell you what it would be if 10 more or 100 more were added. Switch roles and let your child give you the starting numbers.
- ❖ **What Change Do I Have?** – With the increased use of debit cards, students don't have many chances to interact with money. Think about having a change jar so you can periodically pull out a handful of change for your child to count out. Once they are familiar with counting the change given, ask what the total would be if you added another coin and have them try to figure it out mentally.

Geometry Vocabulary

Understanding the vocabulary for shapes becomes more essential in 2nd grade. Locate shapes in the real world and have your child identify the different attributes of that shape.

Things to keep in mind:
- ✓ *Squares* are rectangles. They are just a special kind of rectangle. All sides are equal and it has four right angles.
- ✓ The math term for corner is *vertex*. More than one vertex would be *vertices*.
- ✓ *Two-dimensional* shapes or figures are also called *plane* shapes or figures.
- ✓ *Three-dimensional* shapes or figures are also called *solid* shapes or figures.