

## How Can I Help My Pre-K- Grade 2 Student With Mathematics?

### 1) What are the Maryland College-and-Career-Ready Standards?

Maryland's College- and Career-Ready Standards (MDCCR Standards) form the foundation for Maryland's new state curriculum framework. These standards incorporate the Common Core State Standards.

<http://mdk12.org/instruction/curriculum/mathematics/index.html>

### 2) Why are the MD College- and- Career- Ready Standards important for my student?

The MDCCR Standards are important because they were designed to ensure that all students are ready for success after high school. The MSCCR Standards establish clear, consistent guidelines for what every student should know and be able to do in mathematics and English language arts from kindergarten through 12th grade. Maryland has created and implemented standards also for Pre-K students.

For additional information about how and why the standards were designed to assure student success, watch this 3-minute video presentation: [www.youtube.com/watch?v=FSsIWliDjIA](http://www.youtube.com/watch?v=FSsIWliDjIA).

### 3) What is the mathematics content my student is expected to know and be able to do?

The Maryland College-and-Career-Ready Standards were developed to provide all students with the focused, coherent, and challenging mathematics content they are expected to know and be able to do by the end of every grade level or high school course. In previous years, the content expectations for each grade/course were more extensive and did not allow all students enough time to learn the mathematics. In contrast, the MD-College-and-Career-Ready Standards identify the most critical content at each grade/course level; build upon the learning and understanding from previous years to help prepare students for new learning; and thus, give students additional time to learn the content provided for each grade.

A few resources that you might find helpful are outlined below.

- Your student's teacher is your most valuable resource. The first step in helping your student is to speak with your student's teacher to discuss the content and when the content will be taught during the school year.
- Local school systems often provide resources to assist parents. Access your local Board of Education website for parent guides and information on mathematics content and resources.
- "Parent Roadmaps to the Common Core Standards in Mathematic," developed by the Council of the Great City Schools, provide parents with the major mathematics topics that should be taught in each grade/course level, as well as strategies to help parents support their student's learning. These Parent Roadmaps also present three-year snapshots which show how selected standards progress from year to year so that students will be college- and career-ready upon their graduation from high school <http://www.cgcs.org/Page/244>.

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- The public website for the Maryland State Department of Education (MSDE) includes a variety of parent resources. The icon for the MSDE Blackboard website can be located at <https://msde.blackboard.com/webapps/portal/frameset.jsp>. Once this page is open, go to the top right corner and locate the words PARENT RESOURCES. Click to open.
- The National Parent Teacher Association (PTA) has published “PTA Parents’ Guides to Student Success.” These guides, can be accessed at, <http://www.pta.org/parents/content.cfm?ItemNumber=2583>, provide information on the mathematics content from kindergarten through high school that students need to learn at each grade/course level. The guides also suggest ways that parents can help their students in mathematics.
- Check with your local Board of Education and PTA Council websites for more information for parents.

### 4) Why can't we just teach students the way we learned?

If you don't recognize the mathematics in your student's homework, think about how the world has changed since you were in school. The mathematics looks different because the world is different. Advances in science, technology, information processing and communication, combined with the changing work place; make it necessary for all students to learn more mathematics. Business and industry demand workers who can:

- solve real world problems
- explain their thinking to others
- identify and analyze trends from data, and
- use modern technology.

In their mathematics classes, students will learn and practice the mathematics for their grade using the four strategies listed above. You will see a shift from pages of individual problems to seeing single and multiple step real life problems that students often solve individually, with a partner or in a small group. Students will be encouraged to think through and discuss the problem and solution with others. Students will often be writing to explain how they solved a problem using precise vocabulary and steps that were used to solve the problem. Often students will solve problems using data and technology as part of the problem solving process or as a reference. Students are encouraged to use the mathematics they know and apply it to the next level of skill development or problem solving. Students still need to find the right answers and use mathematically correct and efficient procedures.

If teachers are using strategies you are unfamiliar with, first ask your student’s teachers for help. You can also visit the two websites from Carroll County Public Schools and Montgomery Public Schools for strategies teachers may be using.

K-5 <http://video.carrollk12.org/ElementaryMath/ParentalResources>

K-5 (<http://www.montgomeryschoolsmd.org/curriculum/2.0/parent-newsletters.aspx>)

In addition, this website shows videos of many different mathematics lessons. They are organized by the topic of the content. <https://learnzillion.com>

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Additional suggestions for helping your student learn today's mathematics.

- **Be Positive About Mathematics.** If you tell your student mathematics was hard for you to do or you did not like mathematics, this may influence them to think that mathematics will be too hard for them to learn too. Encourage your student to have a positive attitude and enjoy mathematics. This website provides multiple resources and tips for helping your student learn today's mathematics. It is from the National Council of Teachers of Mathematics <http://www.nctm.org/resources/content.aspx?id=2876>
- **Value Mistakes-** view mistakes as a learning process, not a penalty. We all learn from our mistakes, help your student identify their own errors. This way they can correct their own mistakes and learn where they were incorrect in their thinking.
- **Involve your student in the mathematics you use on a daily bases.** Use tasks such as, cooking, shopping, home repairs or projects to your student how mathematics is used every day. This URL provides a free copy of the booklet, "Helping Your Child Learn Math". This booklet provides suggestions and activities to use with your student such as Math At Home, Math On The Go, Math at the Grocery store, and more) <http://www2.ed.gov/parents/academic/help/math/index.html>
- **Turn off the TV and play games.** Students can learn a lot of mathematics while playing games. Games such as checkers, chess, dominoes, Yahtzee, other board games, and card games which involve counting, problem solving and strategies. There many games that provide practice and help reinforce specific mathematics contents. Ask your student's teacher for suggestions. Also preview <http://www.nctm.org/resources/content.aspx?id=2876>. This website provides many online activities, games, and lessons for your students. Select the grade level that is appropriate for your student.
- **Have fun with a hundreds chart.** The hundreds chart is a wonderful tool to help your student understand many concepts in mathematics. A few of these concepts are: place value of the number system, identify number patterns, skip count, and add and subtract numbers. There are many activities you can do with your students to help them build this understanding. Here are a few websites with activities and downloadable ideas for using the hundreds chart. Have fun! <http://www.smartfirstgraders.com/hundreds-chart.html>  
<http://letsplaymath.net/2008/09/22/things-to-do-hundred-chart/>  
[http://www.softschools.com/math/hundreds\\_chart/missing\\_numbers\\_game/](http://www.softschools.com/math/hundreds_chart/missing_numbers_game/)

### 5) How do I help my student if they need additional support in mathematics?

Begin with your student's teacher; talk to them to develop a plan for additional support. You may also ask the teacher for log in and password information for intervention and enrichment modules found on the MSDE Blackboard website. <https://msde.blackboard.com/webapps/portal/frameset.jsp>

### 6) How can I help my student with their mathematics homework? Grades 1 and 2:

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- Set a regular time for homework.
- Pick a place that is quiet and without distractions.
- Provide supplies and identify resources.
- Go over the directions to find out if your student understands what to do.
- Ask your student if they know where to begin, assist them in getting started, but resist the temptation to do the homework for your student.
- Look over completed assignments.
- Encourage your student to be precise- use correct mathematics symbols, numbers, and vocabulary.
- Watch for frustration and avoid having students work for long periods of time.
- If your student is unsure of what to do, ask questions such as, “How did you find this answer? What do you know about this problem?”
- When solving word problems, ask students, “How would you describe the problem in your own words? What information is given in the problem? Can you draw a picture of the problem? Should you add, subtract multiply, or divide?”
- Encourage your student to when explaining how they solved a problem to identify and explain the steps used to solve the problem.
- When explaining why, have your student tell what they know about mathematics that makes the answer correct.
- Talk to the teacher about any concerns.
- Your most valuable resource is your student’s teacher.

### 7) How do I help my student learn basic facts?

#### **Suggestions for PreK and Kindergarten Students:**

Students in the early grades are getting ready for fact fluency as they work on essential skills with numbers. Below are a few of those essential skills from the MD College and Career- Ready Standards. To view the full set of standards, visit

<http://mdk12.org/instruction/curriculum/mathematics/index.html>

#### **Suggestions for PreK Students**

- Verbally Counting to 10 by ones
  - Encourage your students to count as you do daily tasks such as setting the table, counting toys, counting steps (going up and down stairs, steps from the car to the grocery store, etc.
  - Sing counting songs and find books that involve counting. Ask your student to tell you what number will come next as you sing or read.
  - Give your student a number (from 1-10) and ask them what number comes next? What number comes before?
- Recognize and match written numerals to the same number of objects in a group.
- Recognize the last number counted names the total number in a group.

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- Have students count a group of objects found in your home and help them understand that last number tells the total number of objects in the group. . Mathematics the written numeral to the group.
- Show students a written numeral and have them make a group of objects to match the written numeral.

### Suggestions for Kindergarten Students

- Count to 100 by tens and by ones
  - Verbally count by tens when riding in the car or count steps when walking
  - Look for literature books that involve counting by tens or by ones
  - Use materials to make groups of tens and count them.
  - Use a hundreds chart to count and find the patterns for counting by tens or by ones
  - <http://letsplaymath.net/2008/09/22/things-to-do-hundred-chart/>
- When counting objects, say the number name in order, pairing each object with one and only one number name and each number name with one object
  - Have students count groups of objects found in your home.
  - Give students a number and have them make a group of objects, found in your home, to match the number given.
- Have students make a group of objects from a number given, for example 5. Have students ‘decompose’ or break down those total number of objects into two smaller groups. So 5 total objects can be decomposed to groups of 2 and 3 or 1 and 4 or 5 and 0. Repeat with other numbers.
- Give students small objects found in your home (buttons, paper clips, small blocks etc) Make up simple addition and subtraction story problems for them to act out with the objects.(up to 10) Students can also draw a picture of the story problem and write the numbers that match each set.
- Reference the MD College and Career Ready Standards or resources for kindergarten in the question number one.

### Suggestions for Students Grades 1 and 2:

Before students begin to memorize the basic facts, they need to understand the meaning of addition and subtraction. First, look at the classwork and homework that is coming home. Use that as a guide to create other problems or activities that are similar to those your teacher has created. If needed, ask your student’s teacher for additional suggestions and materials to help your student.

When your student is learning their basic facts, it is important to remember there are two things your student needs to do in order to recall the basic facts from memory. First, your student needs to purposefully be able to match the answer to the fact. Next, your student needs to practice the known facts multiple times in multiple ways to recall the facts quickly and efficiently. Students begin learning the facts with different types of strategies. This URL provides a list of the types of mental mathematics strategies many teachers use to help students learn the basic facts.

<http://hanlonmath.com/pdfFiles/244StrategiesforFactsBH.pdf>.

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A word of caution, many times students are expected to learn the facts using flash cards and multiple pages of problems. These type of activities simply ask students to recall facts they have not learned and do not help them learn the facts. These are appropriate to use once students have demonstrated they can recall the facts accurately. There are many online resources that are appropriate once students learn the facts.

These activities are examples of other ways to help your student learn the facts in addition to using the mental mathematics strategies found in the URL mentioned above.

- Practice the facts by playing games with number cubes (dice) or cards. You could play card games such as War, by having the student draw two cards and add the numbers to determine the winner who has the highest number. A variation for this game would be to roll two dice (number cubes) write down the two numbers rolled and add them for the answer.
- Use dominoes, have your student add the two sets of numbers on the domino place them together. You can also have students use the dominoes to play a memory game. Select 4-5 pairs of dominoes that show the same total amount. Turn them upside down, in rows and columns. Have your student turn over two dominoes at a time. If the pair matches, remove that pair from the rest. Play until all the pairs are matched up.
- Look for daily opportunities to do mental mathematics with your students. This website requires parents to set up an account. Students first take a short assessment to find out which facts they know. (not timed) They are then able to learn the fact using visuals and the fact, practice using it in a word problem. Good site for learning the facts. One good way to assess your student is to use a blank addition fact table. Have the student write the fact for every combination they know. You can use those results to work on the facts they do not know.
- The URL for a blank addition table:
  - <https://www.teachervision.com/addition/graphic-organizers/44544.html>
  - <http://www.nzmaths.co.nz/basic-facts-learning-objects>
- The resources listed under question 1 will also provide suggestions for working with your students to learn their basic facts.

### 8.) How can I help my student write in mathematics?

Teachers are using writing in mathematics class to help students reflect on their learning. As students put their thoughts onto paper using words, symbols, numbers, and drawings it helps them make sense of the mathematics they are learning and deepen their own understanding. Teachers also use student's writing to assess their understanding and can often identify misunderstandings or areas of confusion. Writing in mathematics class starts with students verbally talking with their peers and working out problems with partners. The mathematics class today is filled with discussions and conversations about the mathematics work they are doing and problems they are solving.

When you are working with your student at home, you could ask your student to draw a picture of the problem they are solving. Then ask them to label the drawing or write words or phrases to tell what they

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did first, second, third, so on. For young learners, have students draw pictures of the mathematics they are doing and tell you what the pictures represent.

If students need more structure, fold a sheet of paper into four sections. Label each section and have students show the steps they used/thought about as they solved the problem. It is also important to encourage your student to learn and use mathematics vocabulary. Request a list of mathematics vocabulary the teacher is using so you can reinforce these words at home through conversations and when students are doing homework.