Dear Parents,

Summer at its best is all about a change in pace: A reprieve from the over-scheduled weeks of the school year. There is time for kids to go to a pool or the beach, explore the woods, have fun at camp, enjoy stretches of play time with friends, and simply hang out! Wow, to think that they might even have the chance to say “I’m bored!” sounds like music to my ears. It is a wonderful time for kids to read and to continue growing as readers. Likewise, it is an opportune time for children to keep exploring numbers and thinking about math in the world around them.

While reinforcing math skills during the summer, parents must be careful not to do more harm than good by overemphasizing rote drill work. It simply isn’t true that to be good at math means to be fast at computation. Some of the world’s greatest thinkers, scientists and mathematicians have not been fast at arithmetic; however, they became famous for their higher-level thinking skills. Certainly it is important that children learn to add, subtract, multiply and divide efficiently and quickly and that they learn their basic facts without having to figure them out or count them on their fingers, but computational facility is only part of a comprehensive math foundation. Children need time to develop an understanding of mathematical concepts and opportunities to think and reason, to solve problems in a variety of contexts. Instead of sending kids off to do hours of drill work on their own, children can practice their math facts in a variety of interesting contexts and families can play fun games that develop mathematical thinking.

Here are some general goals to keep in mind over the summer.

--**To maintain your children’s number sense and ability to think flexibly when working with numbers**, talk to your kids about numbers. Are they able to take them apart and put them back together? For example, can they find 7 different ways to make the number 6? For older students, can they come up with mental strategies for a multi-digit multiplication problem? The more they do it, the easier it becomes!

--**Practice their “math facts”:** If your children have already memorized their “math facts,” they should continue to practice them over the summer so they don’t forget them but practice should be fun! There is no better and more fun way for children to learn and reinforce their basic math facts than by playing board games and other games. Play blackjack (21) or cribbage, or have your child be the scorekeeper or the banker while you play board games.

--**Talk to your child about math and his or her strategies for solving problems**. Games are most effective when you are there playing with your child. Ask open-ended questions (e.g., “How did you know?”) that encourage your child to verbalize his or her thinking. When your child is stuck, suggest strategies that they have been working on in school (“Could you use a double to help?” “Are there friendly numbers that could help?”) Not sure of the strategies? Consult the attached list of common strategies.

--**Make it a goal to play a math-related game together every week**- UNO, Top-It, Othello, Mancala, Blokus, Pentago, and Connect Four are some examples. For more ideas consult the list in the box on the right. Go with your child to a toy store and pick out some new games to play this summer. There are also plenty of math apps (A partial list of Apps designed to reinforce skills is attached.)

--**Play “Guess My Number” with your children**, basically the 20-question game with numbers. Think of a number and tell them the range and then let them ask yes or no questions to get clues. Talk about which questions best help narrow down the numbers (“Is it odd?” vs. “Is it 3?”). You will be surprised how quickly you can give them a range of numbers in the millions.

--**Take out your old wooden blocks**. Think your kids are too old? They are not! Dig them out and watch your kids discover again the joy of building with blocks while developing their spatial skills. If you don’t have the classic blocks, consider buying a set of Kapla blocks or Architectoblocks that both can be used in a variety of ways.

--**Try to incorporate “math talk” in your day-to-day conversations**. Count your steps when you are going for a walk, determine in advance the change you’ll get at a store, estimate the number of people in a group, or notice or find shapes and angles in one of your summer outings.

--**Let your children help with money**- have them count the money in their piggybanks or your wallet. Let them count out how much to give to pay for items in a store, let them estimate your change and then check whether you have received the correct amount. If you have older students, let them help determine the basic tip to leave after a meal in a restaurant.

--**Cook together and have your child do the measuring**. How many fourths are in a half cup? What if we doubled the recipe? Which is more, a third of a cup or a fourth of a cup?

--**Read books about math**. There is plenty of wonderful math literature and more books are being published every day. Go to the library and check some out. One of my favorites is “Counting on Frank” by Rod Clement. (A list of books is attached.)

**Going into First Grade**

--Play games and talk about math in the real world. Go grocery shopping together, count change, bake and cook, or do any of the daily activities we all do that involve mathematical reasoning and reinforce number sense.

--Count with your child whenever possible. Practice counting up and practice counting down. Count small groups of items and play games that reinforce counting, which includes everything from Chutes and Ladders and dominoes to Parcheesi.

--Have your child practice estimating. Show them small groups of items and ask them to estimate how many are in the group. Then count them and check your estimates.

**Going into second grade:**

--Play games and talk about math in the real world. Go grocery shopping together, count change, bake and cook, or do any of the daily activities we all do that involve mathematical reasoning and reinforce number sense.

--Reinforce addition and subtraction facts for the numbers 1 through 10. The MOST effective way to do this is through games, not flash cards or workbooks. The games work best when kids and grown-ups are playing together. And don’t try to lose: your child will beat you soon enough! Have fun together.

--Ask your children to explain how they came up with the answer. It is great practice to have them verbalize strategies that they used to figure out an addition or subtraction problem.

--Practice estimating to develop measurement sense: Try estimating the number of windows in your house- then count and see. How about pairs of shoes? Can you make an “educated guess”? Do you have personal benchmarks to help you decide when something is about an inch or a foot long? How many pounds is that watermelon? How heavy is your neighbor’s dog?

**Going into third grade:**

--Play games and talk about math in the real world. Go grocery shopping together, count change, bake and cook, or do any of the daily activities we all do that involve mathematical reasoning and reinforce number sense.

--Reinforce addition and subtraction facts for the numbers 1 through 20. The MOST effective way to do this is through games, not flash cards or workbooks. The games work best when kids and grown-ups are playing together. And don’t try to lose: your child will beat you soon enough! Have fun together.

--Reinforce the addition and subtraction strategies they learned in second grade in the context of story problems you can have fun making up.

--Ask your children to explain how they came up with the answer. It is great practice to have them verbalize strategies that they used to figure out an addition or subtraction problem.

--Practice estimating to develop measurement sense: Try estimating the size of the crowd if you go to a concert or stadium together. Do you know how scientists estimate the numbers of migrating animals from airplanes? Do you have personal benchmarks to help you decide when something is about an inch or a foot long? How many pounds is that watermelon? How many cups in a gallon of lemonade?

**Going into fourth grade:**

--Play games and talk about math in the real world. Go grocery shopping together, count change, bake and cook, or do any of the daily activities we all do that involve mathematical reasoning and reinforce number sense.

--If necessary, reinforce basic addition and subtraction facts. The MOST effective way to do this is through games, not flash cards or workbooks. The games work best when kids and grown-ups are playing together.

--Reinforce the addition and subtraction strategies they learned in third grade in the context of story problems you can have fun making up.

--Ask your children to explain how they came up with their answers. It is great practice to have them verbalize strategies that they used to figure out an addition or subtraction problem.

--Reinforce the basic multiplication facts. Yes, this takes regular practice. ☺

--Practice estimating to develop measurement sense: Try estimating the size of the crowd if you go to a concert or stadium together. Do you know how scientists estimate the numbers of migrating animals from airplanes? Do you have personal benchmarks to help you decide when something is about an inch or a foot long? How many pounds is that watermelon? How many cups in a gallon of lemonade? Compare metric and standard units. How much would you weigh on the moon?

**Going into fifth grade:**

--Play games and talk about math in the real world. Go grocery shopping and compare prices per pound, count change, bake and cook, measure and sew, calculate miles per gallon when you buy gasoline, determine batting averages, compare winning Olympic medal times, or do any of the daily activities we all do that involve mathematical reasoning and reinforce number sense.

--Reinforce basic multiplication facts, ensure your child is comfortable doing multi-digit division and ensure your child is able to subtract multi-digit numbers efficiently.

--Help your child integrate math and language by discussing math! Have fun making up word problems for your child to problem solve.

--Help your child understand all the ways economists, businessmen, physicians, and scientists and many other professionals depend on their math expertise everyday and why math is important for developing their thinking skills.

We hope you will spend the majority of your “math time” this summer focusing on the types of activities outlined above, but we realize many of you would feel more comfortable if we also recommended a workbook. There is a workbook that we can recommend and it is available for each grade level! You can order it easily online. Just go to:<http://www.summerskills.com/summerskillsbooks/math_books>

The beauty of this Summer Skills Sharpener series is that each page offers the students a variety of topics to review. Simply order the workbook that entails a review of the grade your child just completed; e.g., if they have just completed 2nd grade and are rising to 3rd, order the Second Grade Math Review Book.

I hope you and your families have a wonderful summer. If you have any questions about these recommendations, don’t hesitate to contact me by email. (lquinn@csov.org)

Sincerely,

Lauren Quinn

K-5 Math Coordinator