

# Summer Math Learning Packet

## Students Entering Grade 5

Discover mathematics all around you this summer!!! Just as with reading, regular practice over the summer with problem solving, computation, and math facts will maintain and strengthen the mathematical gains you made over the school year.

Attached to this letter, you will find creative mathematics activities to explore at home. The goal is for you to have fun thinking and working collaboratively to communicate mathematical ideas. While you are working, ask how the solution was found and why a particular strategy was chosen.

The Summer Math Learning Packet consists of 2 calendar pages, one for July and one for August, as well as directions for math games to be played at home. Literature and websites are also recommended to explore mathematics in new ways. We encourage you to complete at least 15 math days each month. Keep track of your math in a journal.

Fun math books to read	Fun websites to explore
<u>Counting on Frank</u> by Rod Clement <u>A Grain of Rice</u> by Helena Clare Pittman <u>Sideways Arithmetic from Wayside School</u> by Louis Sachar <u>Divide and Ride</u> by Stuart Murphy <u>Lemonade for Sale</u> by Stuart Murphy	<a href="http://www.funbrain.com">www.funbrain.com</a> <a href="http://www.aplusmath.com">www.aplusmath.com</a> <a href="http://www.pbskids.org">www.pbskids.org</a> <a href="http://www.illuminations.nctm.org">www.illuminations.nctm.org</a> <a href="http://www.setgame.com">www.setgame.com</a> <a href="http://www.multiplication.com">www.multiplication.com</a> <a href="http://www.firstinmath.com">www.firstinmath.com</a>

### Student Accountability

The intention is that your child spends at least 10 minutes a day, 4 to 5 times a week, practicing math. Your child should aim to complete at least 200 minutes of math practice over the course of the summer. When your child has completed the math requirements, please sign and return this paper to the fifth grade teacher with his/her journal

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Parent's signature

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Date

## Fourth Grade Learning Goals

\*In grade four, your child use addition, subtraction, multiplication, and division to solve word problems, including problems involving measurement of volume, mass, and time. Students continue to build their understanding of fractions—creating equal fractions, comparing the size of fractions, adding and subtracting fractions, and multiplying fractions by whole numbers. They also start to understand the relationship between fractions and decimals. Activities in these areas include:

- Adding and subtracting whole numbers up to 1 million quickly and accurately
- Solving multi-step word problems, including problems involving measurement and converting measurements from larger to smaller units
- Multiplying and dividing multi-digit numbers
- Extending understanding of fractions by comparing the size of two fractions with different numerators (top numbers) and different denominators (bottom numbers)
- Creating equal fractions ( $3/4 = 3 \times 2 / 4 \times 2 = 6/8$ )
- Adding and subtracting fractions with the same denominator
- Building fractions from smaller fractions ( $3/8 = 1/8 + 1/8 + 1/8$ )
- Connecting addition and subtraction of whole numbers to multiplying fractions by whole numbers
- Connecting addition of fractions to the concept of angle measurement
- Representing and interpreting data
- Converting fractions with denominators of 10 or 100 into decimals
- Locating decimals on a number line
- Comparing decimals and fractions using the symbols  $>$  (more than),  $=$  (equal to), and  $<$  (less than)

## Looking Ahead to Fifth Grade

\*In grade five, students build their understanding of the place value system by working with decimals up to the hundredths place. Students also add, subtract, and multiply fractions, including fractions with unlike denominators. They continue to expand their geometry and measurement skills, learning the concept of volume and measuring the volume of a solid figure. Activities in these areas include:

- Quickly and accurately multiplying multi-digit whole numbers
- Dividing numbers with up to four digits by two digit numbers
- Using exponents to express powers of 10 (in  $10^2$ , 2 is the exponent)
- Reading, writing, and comparing decimals to the thousandths place
- Adding, subtracting, multiplying, and dividing decimals to the hundredths place
- Writing and interpreting mathematical expressions using symbols such as parentheses. For example, “add 8 and 7, then multiply by 2” can be written as  $2 \times (8 + 7)$ .
- Adding and subtracting fractions with unlike denominators (bottom numbers) by converting them to fractions with matching denominators
- Multiplying fractions by whole numbers and other fractions
- Dividing fractions by whole numbers and whole numbers by fractions
- Analyzing and determining relationships between numerical patterns
- Measuring volume using multiplication and addition

\*Adapted from *Parent Roadmaps* by Council for Great City Schools

# Grade 5

## Summer Math Ideas

**DIRECTIONS:** Do your best to complete as many of these summer math activities as you can! Record your work in your math journal every day. In September, share your Math Journal with your third grade teacher.

### Each journal entry should

- Have the date of the entry
- Have a clear and complete answer
- Be neat and organized

### Math Tools You'll Need:

- Notebook for math journal
- Pencil
- Crayons
- Regular deck of playing cards
- Coins
- Dice

### Here is an example of a "Great" journal entry:

July 5<sup>th</sup>

Today I went outside to play at 9:35 am and came in at 12:05 pm. I was outside for a total of 90 minutes. This can also be written as 1 hour 30

minutes, or  $1\frac{1}{2}$  hours.

### Games To Play (You will need a deck of cards)

#### Multiplication Compare

Deal out all the cards equally between 2 or 3 players. Each player turns over 2 cards and multiplies the numbers together. The person with the higher product wins the pile of cards. If you have the same product repeat the procedure. Winner takes all the cards.

#### Close to 1000

Deal 8 cards to each player.

Use any 6 cards to make two 3-digit numbers.

Try to make the sum close to or exactly 1000.

For example,  $148 + 853 = 1001$ .

Your score is 1 because the difference between 1001 and 1000 is 1.

The lowest score after five rounds wins.

**Other games to play:** Checkers, Othello, Memory, Set, jigsaw puzzles, Parcheesi, Crazy Eights, Connect Four, Legos, etc.

# July 2016 Entering Fifth Grade Mathematics Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
Make a dollar with 50 coins. What coins did you use? How many of each?	Have a scavenger hunt for real-world examples of parallel lines (ex. railroad tracks)	Visit the website <a href="http://www.multiplication.com">www.multiplication.com</a> Choose some activities to have fun practicing multiplication. Record choices.	Read <i><u>Lemonade for Sale</u></i> By Stuart Murphy. Make a graph, by days of the week of the number of dogs you see each day.	Show 4 different ways to make \$1.56 using coins and/or bills.	Play the game <i><u>Close to 1000</u></i> (see directions)	
10	11	12	13	14	15	16
Make a set of flash cards of multiplication facts. Practice your facts with a friend.	Look at the weather in the paper across the nation. Look at the highest temperature and the lowest temperature. What is the difference between them?	Play the <i><u>Product Game</u></i> at <a href="http://www.illuminations.nctm.org">www.illuminations.nctm.org</a>  Record the strategy that you used.	As of today, record the Wins and Losses of the Red Sox this season. Estimate the Wins and Losses at the end of the season. Explain your thinking to an adult.	Write down the names and prices of 5 cars you find in the newspaper. Order the prices from least to greatest. Round the prices to the nearest thousand.		
17	18	19	20	21	22	23
Visit the game room at <a href="http://www.aplusmath.com">www.aplusmath.com</a>  Record what you played.	Go to the website <a href="http://www.setgame.com">www.setgame.com</a> Play and enter to win a prize!	Read <i><u>Divide and Ride</u></i> by Stuart Murphy, How can 13 children be arranged on a park ride that seats 2, 3, 4, 5? How many kids are left waiting?	Play <i><u>Multiplication Compare</u></i> (see directions)	Play a strategy game. What strategy did you use? Would you use it again?		
24	25	26	27	28	29	30
Make a paper airplane and fly it. Measure how far it goes. Try a few times. Record distances in your journal.	PLAY BASEBALL at <a href="http://www.funbrain.com">www.funbrain.com</a>	Find the area of your bedroom floor. What room in your house could have twice the area of your bedroom? Half the area of your room? Check.	Write down the numbers you see on 2 license plates. Create 4 math problems with these numbers.	Read <i><u>A Grain of Rice</u></i> by Helena Pittman. Calculate how many grains of rice she will receive on day 18. How many will she have altogether?		

# August 2016 Entering Fifth Grade Mathematics Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	1	2	3	4	5	6
	What number am I? I am > 3,449 and I am < 3,502. I have a 1 in my ones place and a zero in my tens place. Create your own number riddle.	How many 25s are in 300? How many 20s are in 4,000?	It costs \$1.70 to ride the T. If you ride 2 times a day for the month of July, how much would you spend?	Estimate the following in inches: your height; length of your foot; distance from your elbow to the tip of your little finger. Measure to see how close you are	Find a graph in the newspaper or on the computer. Cut and paste it into your journal. Write 3 statements about the graph.	
7	8	9	10	11	12	13
	Play <b>Close to 1000</b> . (see directions)	Play <b>Concentration</b> at <a href="http://www.illuminations.nctm.org">www.illuminations.nctm.org</a> Choose: <b>fractions, face down</b> . Draw pictures that represent some fractions.	Vowels are worth \$50 each, consonants are worth \$40. Can you make a word worth exactly \$200? \$600?	Measure your face's height & length in inches. Estimate the fraction of your length of face compared to length of your body. Compare yours with 4 friends.	Play <b>Fraction Game</b> at <a href="http://www.illuminations.nctm.org">www.illuminations.nctm.org</a> How many moves did it take to get all the red markers to the right side? Can you beat your score?	
14	15	16	17	18	19	20
	Measure the perimeter of two different windows in your home. Find the differences of the perimeters.	Flip a coin 25 times. Make a tally chart for how many times it lands on heads or tails. Write a fraction for your head and tail data. Try it again. Were the results the same?	Write a word problem whose answer is 154. Have someone solve the problem.	List some capital letters (E, F...) that have one pair of parallel lines. Are there any that have two pair of parallel lines?	Make the largest and smallest numbers you can find using the digits 4, 1, 7, 8, and 2. Find their difference and sum.	
21	22	23	24	25	26	27
	Try a new activity at <a href="http://www.coolmath4kids.com">www.coolmath4kids.com</a> Challenge yourself. What did you choose to do?	Survey 10 friends or relatives to find out their favorite outdoor activity. Graph the results.	Kate's garden is in the shape of a square with a perimeter of 32 feet. What is the area of her garden?	Play the <b>Product Game</b> at <a href="http://www.illuminations.nctm.org">www.illuminations.nctm.org</a> Record the strategy that you used.	Play a game. What strategy did you use? Would you use that strategy again?	
28	29	30	31			
	Visit the website <a href="http://www.mathplayground.com">www.mathplayground.com</a> and play the logic games. How did you do?	Would you rather have your height be made of a stack of nickels or quarters, lined up end to end? How much would you be worth?	<b>YOU DID IT!</b> Please bring your journal to your fifth grade teacher on the first day of school!			