Summer Math Learning Packet
Students Entering Grade 6

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
A Gebra Named Al by Windy Isdell Math Curse by Jon Scieszka Chasing Vermeer by BlueBalliett Counting on Frank by Rod Clement Guinness Book of Records by Time Inc Mathematicians are People Too by Luetta Reimer & Wilbert Reimer	www.funbrain.com www.aplusmath.com www.pbskids.org www.illuminations.nctm.org www.setgame.com www.multiplication.com www.firstinmath.com www.kids.gov/ http://mathforum.org/index.html

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 250 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 sixth grade teacher with his/her journal.

_____
Parent's signature   Date

Grade 5 Learning Goals

*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 10², 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×(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

Looking Ahead to Sixth Grade

*In grade six, your child will learn the concept of rates and ratios and use these tools to solve word problems. Students will work on quickly and accurately dividing multi-digit whole numbers and adding, subtracting, multiplying, and dividing multi-digit decimals. Students will extend their previous work with fractions and decimals to understand the concept of rational numbers—any number that can be made by dividing one integer by another, such as ½, 0.75, or 2. Students will also learn how to write and solve equations—mathematical statements using symbols, such as 20+x = 35—and apply these skills in solving multi-step word problems. Activities in these areas will include:

• Understanding and applying the concepts of ratios and unit rates, and using the correct language to describe them (for example, the ratio of wings to beaks in a flock of birds is 2 to 1, because for every 2 wings there is 1 beak)

• Building on knowledge of multiplication and division to divide fractions by fractions

• Understanding that positive and negative numbers are located on opposite sides of 0 on a number line

• Using pairs of numbers, including negative numbers, as coordinates for locating or placing a point on a graph

• Writing and determining the value of expressions with whole-number exponents (such as 15+3²)

• Identifying and writing equivalent mathematical expressions by applying the properties of operations. For example, recognizing that 2 (3+x) is the same as 6+2x

• Understanding that solving an equation such as 2+x = 12 means answering the question, "What number does x have to be to make this statement true?"

• Representing and analyzing the relationships between independent and dependent variables

• Solving problems involving area and volume

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

Grade 6
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

Here is an example of a "Great" journal entry:
July 23rd
Today's number is 144.
$12 \times 12 = 24 \times 6 = 48 \times 3$

$1440 \div 10 = 12 \div \dfrac{1}{12}$

$143 + 1 = 121 + 23$

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

July 2016 Entering Sixth Grade Mathematics Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 Square the following numbers: 8, 10, 6, 7, 9, 11	**2**
3	**4** What is the perimeter of your room measured in feet and inches? in meters and cm?	**5** Find the sum of the digits of your phone number. What numbers is it divisible by?	**6** Six friends have 4 sandwiches to share. What fraction of a sandwich will each person get?	**7** Express the number 50 in at least 25 different ways. Use all 4 operations and include fractions and decimals.	**8** How many 25s are in 300? How many 20s are in 4,000?	**9**
10	**11** Try a new activity at http://www.coolmath4kids.com Challenge yourself. What did you chose to do?	**12** Predict the number of times a 6 will occur when you roll a die 50 times. Roll the die and record the results- are they the same as your prediction? Why?	**13** Count cricket chirps for 15 sec. Add 39. This will give you the Fahrenheit Temperature outside. Try it on 3 different days. Does it work?	**14** Choose a favorite professional athlete and research his/her annual salary. How much does s/he earn in a month? A day?	**15** Read a book from the suggested "**Great Math books to Read**" What new vocabulary did you use?	**16**
17	**18** Measure and record the heights of each member of your family in inches. What is the difference between the tallest and the shortest persons?	**19** A California Condor has a 114 in. wingspan. How many feet is that?	**20** I am an even, 3 digit palindrome. (ex: 464) The product of the digits is 8. What number am I?	**21** Record the time you go to bed and get up for 1 week. Figure out the total hours & minutes. Find the mean, median, and range.	**22** Try "**Beatcalc**" at http://mathforum.org/index.html	**23**
24	**25** Plan a meal for your family. With an adult, make a list of the ingredients, go shopping, and then follow the recipe.	**26** Try the **Weigh the Wangdoodles** at http://mathplayground.com/	**27** Today's number is 144 Make 144 by: -Multiplying two numbers -Dividing two numbers -Adding odd numbers	**28** A farm has cows and ducks. There are 78 feet and 27 heads. How many of each animal are there? How do you know?	**29** Cut a string 1 meter long. Identify and record 10 items that are this length.	**30**

August 2016 Entering Sixth Grade Mathematics Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	1 am thinking of an odd number. The digits in my number are 4, 3, 2, 6. My hundreds place is less than my thousands place and less than my tens place. What number am I?	2 Make a dollar with 50 coins. What coins did you use? How many of each?	3 Choose a geometry activity at Math Illuminations http://illuminations.nctm.org/activitysearch.aspx	4 Is a 3 gallon pitcher large enough to hold 25 pints of juice? Explain.	5 Play **Sudoku** from the newspaper. How did logic help you to solve the puzzle?	6
7	8 How many blades of grass are in a square yard of your backyard? Use logic, measurement, and problem solving strategies to find the answer.	9 Read a book from the suggested "**Great Math Books to Read**" What new math did you discover?	10 If 210 children and 45 adults are going on a field trip, how many buses do they need? Each bus can seat 50 people. How many empty seats will you have?	11 Design a container for popcorn with one piece of paper. How much popcorn will your container hold?	12 Make a paper airplane and fly it several times. Find the mean average of the distance your plane can fly.	13
14	15 Visit the website **Figure this** and look for a real life math challenge. Http://www.figurethis.org/index.html	16 Play a game like **Chess** or **Monopoly**.	17 If you spend $100.00 a day, how many days will it take to spend a million dollars? How many years is that? What would you buy?	18 Read Guinness Book of Records by Time Inc. What record surprised you the most? Why?	19 I am a number less than 50. When divided by 5, my remainder is 4. Who am I? Is there more than 1 correct answer?	20
21	22 How many minutes in 1 hour? How many seconds in 1 hour? How many minutes in 1 day? How many seconds in 1 day?	23 Jen is 12. Amy is 13. In 25 years, what will be the product of their ages?	24 I have 17 eggs but I want 113. How many more do I need? How many egg cartons (dozen sized) do I need to carry 113 eggs?	25 If you save two cents everyday in the month of July, how much money will you have saved at the end of the month?	26 Barry bought a roll of ribbon to make bows for his gift boxes. There were 132 inches of ribbon on the roll. How many feet of ribbon was that?	27
28	29 The largest prime number less than 30 is _____?	30 Bill and Carol buy a pizza that is cut into 8 equal slices. If Bill eats $\frac{1}{8}$ and Carol eats $\frac{1}{4}$ of the pizza, how many eighths of the pizza is left?	31 **YOU DID IT!** Please bring your journal to your sixth grade teacher on the first day of school!			