Summer Math Learning Packet
Students entering Grade 6

The daily activities in this summer math packet will review math concepts and skills of the grade that has just been completed during the 2014-2015 school year. Just a few minutes each day spent "thinking and talking math" will help reinforce the math that has been learned and begin to bridge the foundation for extending to the concepts that will be developed next year. 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 math practice in this summer packet address the Fairfield Public School Curriculum for Mathematics which incorporates the Common Core Standards addressing these 3 critical areas in grade 5:

1) Developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions)
2) Extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations
3) Developing understanding of volume.

The packet consists of 2 calendar pages, one for June/July and one for August, as well as directions for math games to be played at home. Literature, worksheets, APPs 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.

Educational and Fun APPS and Websites to Practice Math
Student Accountability
I spent at least 10 minutes a day, 4 to 5 times a week, practicing math. I completed at least 250 – 300 minutes of math practice over the course of the summer. I recorded my minutes on the tracking sheet. I returned the recording sheet to my 6th grade math teacher. I also showed my teacher my journal where I kept track of my mathematical thinking.

_____   _____   _____
Print Name   Student Signature   Date

Websites:	Great Math Books to Read:
Here are websites that you can access at the **Fairfield Public Library** if you do not have a computer at home**.** You can record your activity on the "Create Your Own Summer Math Calendar!" sheet provided. http://www.ixl.com/ http://www.figurethis.org/index.html http://nrich.maths.org/frontpage http://www.khanacademy.org/ http://mathforum.org/index.html http://www.coolmath4kids.com/ http://www.figurethis.org/index.html http://www.thinkingblocks.com/ http://mathplayground.com/ http://illuminations.nctm.org/activitysearch.aspx	A Gebra Named Al by Windy Isdell Math Curse by Jon Scieszka Chasing Vermeer by BlueBalliett Sir Cumference & the Dragon of Pi by Cindy Neuschwander Sir Cumference & the First Roundtable by Cindy Neuschwander Sir Cumference & the Great Knight of Angleland by Cindy Neuschwander Sir Cumference & the Sword in the Cone by Cindy Neuschwander Number Devil: A Mathematical Adventure by Hans Magnus Enzensberger Counting on Frank by Rod Clement Guinness Book of Records by Time Inc Mathematicians are People Too by Luetta Reimer & Wilbert Reimer

APPS to Practice Math!
This is a great, fun way to get practice with math skills on a smartphone or iPad. Many of these Apps are free or inexpensive. There are lots of other apps out there, but these are some of our favorites.

APPS	APPS
Nine Gaps	iCut Deluxe
Khan Academy	Math Doodles
Math Zombie	Flash to Pass
Math Bingo	Sumdog
Math Hunt	Sushi Monster,
Symmetry Shuffle	Slice It!
Kakooma	Ratio rumble
Deep sea duel	Chicken coop fractions
Pick a path	Zoom math
Lobster diver	Super 7
Math matrix	Pizza shop and slide 1000
Middle School Math HD	

Worksheets to Practice Math
http://www.commoncoresheets.com/

6th Grade Summer Work Calendar
June/July 2015

28	29	30	1	2	3	4
	With partner, put 5 cards face up. Turn a 6th card, to be a Target Card. Each player uses the cards to make the Target Card #. All 5 cards must be used only once. Use +, - , x, and/or ÷.	Use four 4's to create problems that will equal 1-12. Remember to use the correct order of operations to solve your problems: Parentheses, Exponents, Multiply or Divide, Add or Subtract.	286,489 is an odd number. How many times greater is the 8 in the ten thousands place than the 8 in the tens place? Explain your thinking	Six friends have 4 sandwiches to share. What fraction of a sandwich which each person get?	Determine the sum and difference: $2\frac{1}{4} + 5\frac{5}{8}$ $3\frac{1}{2} - 2\frac{1}{3}$	
5	6 Express the number 50 in at least 25 different ways. Use all 4 operations and include fractions and decimals.	7 Write an expression for: *Add 2 and 4 and multiply the sum by 3. Next, add 5 to that product and double the result.*	8 Try a new activity at **http://www.coolmath4kids.com/** Challenge yourself. What did you chose to do?	9 On Saturday 3/4 of a 5th grade class went to see a new movie. If 1/2 of the class went to the afternoon session, what fraction of the class went to the evening session?	10 Count cricket chirps for 15 sec. Add 39. This will give you the F. temp outside. Try it on 3 different days. Does it work?	11
12	13 Choose a favorite professional athlete and research his/her annual salary. How much does s/he earn in a month? A day?	14 A rectangle is twice as long as it is wide. Its width is 5.5 cm. Find the area of the rectangle.	15 The sum of two mixed numbers with unlike denominators is $5\frac{3}{5}$. What might the two mixed numbers be? Show as many different solutions as you can.	16 A California Condor has a 114 inch wingspan. How many feet is that?	17 You have $2\frac{5}{8}$ pizzas to share equally with 3 people. How much pizza will each person get?	18
19	20 Each day, Monday through Friday, a baker uses 1 ¼ sacks of flour when baking cakes. Will the baker use more than or less than 5 sacks of flour from Monday through Friday?	21 Place parentheses in the following equation to make it true. 6 + 6 ÷ 6 × 6 – 6 = 0	22 Deal 3 cards to make a 3- digit number. Even numbers are whole numbers. Odd numbers are decimals. Repeat this. Add the 2 #s. Turn over 3 new cards per turn. Continue to add the # to last score. Game to 300.	23 Tom built a backyard pen for his new puppy. The length of the pen was $6\frac{1}{4}$ meters and the width was 4 meters. What is the area of the pen?	24 Multiply two fractions together to get the number 1. What do you notice?	25
26	27 Write a story for this problem: 2 ÷ **1/3.**	28 0.75 is the answer. What could the question possibly be? Challenge yourself to think of more questions.	29 Can you use 1/8 x 2/5 to solve the problem? There is 2/5 of a pizza left. If Jamie eats another 1/8 of the original whole pizza, what fraction of the original pizza will be left over? Explain	30 Read Guinness Book of Records by Time Inc. What record surprised you the most? Why?	31 Choose a geometry activity at **Math Illuminations** **http://illuminations.nctm.org/activitysearch.aspx**	

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6th Grade Summer Work Calendar
August 2015

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2	3 Is a 3 gallon pitcher large enough to hold 25 pints of juice? Explain	4 Play **Suduko** from the newspaper. How did logic help you to solve the puzzle?	5 How many blades of grass are in a square yard of your backyard? Use logic, measurement, and problem solving strategies to find the answer.	6 Read a book from the suggested "**Great Math Books to Read**" What new math did you discover?	7 Write a word problem for the equations 1/2 x 2/3 = X Solve it!	8
9	10 There are 3 pizzas. Each child will get 1/4 of a pizza. How many children will get pizza?	11 Find the sum and difference between two decimals. Compare the two decimals using >, =, and < symbols.	12 Visit the website **Figure this** and look for a real life math challenge. **http://www.figurethis.org/index.html**	13 Find a fraction or decimal in the newspaper. What did it relate to?	14 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?	15
16	17 Have fun with addition magic squares: http://www.k-5mathteachingresources.com/privacy-policy.html	18 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?	19 Evaluate the following numerical expression. 2×(5+3×2+4) Can the parentheses in this expression be removed without changing the value of the expression?	20 Jen is 12. Amy is 13. In 25 years, what will be the product of their ages?	21 Leo & Mia are comparing the product of 60×225 to the product of 30×225. Mia says she can compare these products without multiplying the numbers. Explain how she might do this.	22
23	24 A box 2 centimeters high, 3 centimeters wide, and 5 centimeters long can hold 40 grams of clay. A second box has twice the height, three times the width, and the same length as the first box. How many grams of clay can it hold?	25 Find the sum of the digits of your phone number. What numbers is it divisible by?	26 If you buy 3 books at $3.95 each, how much change would you get from $20.00?	27 Determine the product and quotient: $10.95 \div 1.5$ 2.1×5.9	29 **YOU DID IT!** Please bring your journal to your sixth grade teacher on the first day of school!	30

Date	Website (Give Name)	Activity	Content Focus	Book Name (Give Name)	Minutes Worked	Parent Initial
7/5/14	That Quiz	Exponents	Learning rules of exponents	----	15 minutes	PLR

Incoming 6th Grade Summer Work Packet (Math-6 and Transition to Pre-Algebra)

Date	Website (Give Name)	Activity	Content Focus	Book Name (Give Name)	Minutes Worked	Parent Initial
8/5/14	That Quiz	Exponents	Learning rules of exponents	----	15 minutes	PLR

Incoming 6th Grade Summer Work Packet (Math-6 and Transition to Pre-Algebra)

Grade 6 Answer Key
Answers will vary for many of the activities depending on the choices students make. Here are the answers for activities with specific solutions.
June 29
Parentheses may be used to group calculations and to indicate the order in which calculations are to be performed. Players must write out their solutions.

     Sample hand: Cards: 1, 3, 7, 1, 8 Target Card: 1

     One possible solution: $[(3 - 1) + 7] - (8 \div 1) = 1$

The first player to reach a solution says "Target!" and then explains his/her solution. If the solution is correct, the player receives 1 point for that round. If the player cannot explain the solution or the solution is not correct, the player receives a -1 for that round.
After 10 rounds the winner is the player with the most points.

June 30
Order of operations:
The rules of which calculation comes first in an expression.
Do everything inside parentheses first, ( )
Then do exponents, like x^2
Then do multiplication and division from left to right
Lastly do addition and subtraction from left to right
Examples:

     $1 = (4 \times 4) \div (4 \times 4)$

     $1 = 44 \div 44$

July 1
The 8 in the ten thousands place is a thousand times greater than the 8 in the tens place. $80 \times 1{,}000 = 80{,}000$.

July 2
Each friend will have 2/3 of a sandwich.

July 3
$$2\frac{1}{4} + 5\frac{5}{8} = 2\frac{2}{8} + 5\frac{5}{8} = 7\frac{7}{8}$$

$$3\frac{1}{2} - 2\frac{1}{3} = 3\frac{3}{6} - 2\frac{2}{6} = 1\frac{1}{6}$$

July 6
Example:

     $(5 \times 5) + (50 - 25)$

     Each example does not need to include all of the operation and fraction and decimal. Include fractions and decimals in some of your examples.

July 7
One solution:

     $(5+3(2+4))+(5+3(2+4))$.

July 9
¼ of the class went to the evening session.

July 14
The area of the rectangle would be 5.5cm x 11cm = 60.5 cm squared.

July 15
One solution:
    2 2/10 + 3 2/5 = 5 3/5

July 16
The wingspan of the California Condor is 9 ½ feet.

July 17
Each person will have 7/8 of a pizza.

July 20
The baker will use more than 5 sacks of flour.

July 21
(6 + 6 ÷ 6) x (6 – 6) = 0

July 22
Example for first step: Player 1 draws a 9, 4, and 3 and writes it on her paper as 4.93 or 4.39.
Example for second step: Player 1 draws a 6, 2, and 7. She writes it on her paper as 62.7 or 26.7
Example for third step: Player 1 adds 4.93+ 62.70 = 67.63
Continue to add the number they make to their last score. Play until one player reaches 300.

July 23
The area of the pen for the puppy would be 6 1/4 meters x 4 meters = 25 meters squared.

July 24
Example:
2/3 x 3/2 = 1

July 28
Janet had a rope that was 2 meters long. She cut it into pieces that were **1⁄3** of a meter long. How many pieces of rope did she cut?
2 ÷ **1⁄3** Janet had a rope that was 2 meters long. She cut it into pieces that were **1⁄3** of a meter long. How many pieces of rope did she cut?

Janet was able to cut 6 pieces of rope. To solve this problem I gave represented the 2 meter rope with green. The red represented **1⁄3** meter. I needed 6 red rods to match the length of two green rods. 2 ÷ 1/3 = 6 or 6 x **1⁄3** = 2

July 29
I went to the store and bought a lollipop for 25 cents and gave the clerk a dollar.
My change would be .75 of a dollar.

August 3
There are 8 pints in a gallon. So in 3 gallons there are 24 pints so the pitcher can not hold 25 pints.

August 7
Suzie is baking some cookies. The recipe calls for 2/3 cup of sugar. She would like to cut the recipe in half. How much sugar will she need?

August 10
Twelve children will get pizza.

August 11
Example:
1.2 – 0.7 = 0.5
1.2 + 0.7 = 1.9
1.9 > 0.5

August 14
It would take 10,000 days to spend 1,000,000 dollars. It would take over 28 years.

August 18
Answers 49, 44, 39, 34, 29, 24, 19, 14, and 9.

August 19
Before multiplying the first 2, complete the operations inside the parentheses using order of operations: 2×(5+3×2+4)=2×(5+6+4)=2×15=30
You cannot remove the parenthesis and get the same value.

August 20
The product of their ages in 25 years will be 1,406 (37 x 38).

August 21
Since 60 is twice 30, the product 60×225 is twice the product 30×225. We can write this as an equation:
60×225=(2×30)×225=2×(30×225).

August 24
The first box is 2 centimeters high, 3 centimeters wide, and 5 centimeters long so it has volume 2cm×3cm×5cm=30 cubic centimeters and it holds 40 grams of clay.

The second box is 4 centimeters high, 9 centimeters wide, and 5 centimeters long so its volume is 4cm×9cm×5cm=180 cubic centimeters.

Since the volume of the second box is 180÷30=6 times bigger, it can hold 6 times as much clay. So the second box can hold 6×40=240 grams of clay.

August 26
You would receive $8.15 in change from $20.00.

August 27
$10.95 \div 1.5 = 7.3$
$2.1 \times 5.9 = 12.39$