Summer Math Learning Packet

Students Entering Grade 5

The daily activities in this summer math packet will review math concepts and skills of the grade that has just been completed during the 2013-2014 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 new Massachusetts Curriculum Framework for Mathematics which incorporates the Common Core Standards addressing these 3 critical areas in grade 4:
(1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends
(2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers
(3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

The 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, 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.

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.

_____ _____
Parent’s signature Date

Grade 5
Summer Math Ideas

Math Tools You'll Need:

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

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 second 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 5th
> Today I looked at the weather section of the newspaper and recorded the predicted high temperature for the next 5 days: 82, 88, 90, 76, 81. I rearranged the data from the least to greatest number, then found 82 to be the middle value, which is the median temperature.

Cool Math Books to Read:

Counting on Frank by Rod Clement
A Grain of Rice by Helena Clare Pittman
Sideways Arithmetic from Wayside School by Louis Sachar
***Divide and* Ride** by Stuart Murphy
Lemonade for Sale by Stuart Murphy

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

1. **Multiplication Compare**
Remove all the face cards from a deck of cards. The ace will equal 1. Deal out the cards equally between 2 to 3 players. Each player turns over 4 cards and multiplies a 2-digit number by a two-digit number. Use the symbols <, >, or = to compare the products. The person with the highest product wins 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 ex. You combine 148 and 853 to make 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: Monopoly, Othello, Battleship, Connect Four, Mastermind, Mancala, Legos, K'Nex, Simon, Yahtzee

Worksheets to Practice Math

http://www.gregtangmath.com/
http://www.commoncoresheets.com/

July 2014 Entering Fifth Grade Mathematics Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Play the game ***Close to 1000.*** (see directions)	2 Write three facts about the number 28. Is this number prime or composite? How do you know? Round this number to the nearest 10.	3 A lawn water sprinkler rotates 65 degrees and pauses. It then rotates 25 more degrees. What is the total degree rotation of the sprinkler? To cover a full 360 degrees, how many more degrees will it move?	4 Visit the website www.multiplication.com Choose some activities to have fun practicing multiplication. Record choices.	5
6	**7** Solve the riddle: I have 5 in the tenths place I have 7 in the thousandths place I have 4 in the ones place I have 2 in the hundredths place. What decimal am I? Write your own riddle.	**8** Go to http://www.gregtangmath.com/ And choose some worksheets to complete.	**9** With a partner take turns scooping coins from a cup. Write the total in dollars and cents using decimal notation. Compare totals using <, >, or =. Take ten turns.	**10** Skip count by 5's starting at 1. What patterns do you noticed? Explain why you think these patterns are happening	**11** Play the ***Product Game*** at **www.illuminations.nctm.org** Record the strategy that you used.	**12**
13	**14** Identify, record and classify angles: acute (less than 90°) obtuse (greater than 90°), right (90°) in everyday things (buildings, bridges, furniture…)	**15** 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.	**16** 15 friends want to order pizza for dinner. They predict that each person will eat 1/3 of a pizza. How many pizzas should they order? What if there were 9 friends?	**17** Go to the website www.setgame.com Play and enter to win a prize!	**18** The sum of two mixed numbers is 5. What might the two mixed numbers be? Show as many different solutions as you can. Explain your strategy.	19
20	**21** Play ***Multiplication Compare.*** (see directions)	**22** Play a strategy game. What strategy did you use? Would you use it again?	**23** Make a paper airplane and fly it. Measure how far it goes. Try a few times. Record distances in your journal. Is it more accurate to use kilometers, meters or centimeters to measure?	**24** PLAY BASEBALL at **www.funbrain.com** Challenge yourself	**25** Find the area of your bedroom floor. What room in your house could have about twice the area of your bedroom or about half the area of your room? Check.	**26**
27	**28** Write down the numbers you see on 2 license plates. Create 4 math problems with these numbers using all 4 operations (+, -, x, ÷)	**29** Read ***A Grain of Rice*** by Helena Pittman. Calculate how many grains of rice she will receive on day 18. How many will she have altogether?	**30** Tom and Ben ordered a pizza for lunch. They each ate 1/3 of the pizza. How much pizza was eaten? How much pizza was left?	31 Visit the website **www.mathplayground.com** and play the logic games. How did you do?		

August 2014 Entering Fifth Grade Mathematics Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 Draw a design using symmetry. What makes your design symmetrical?	**2**
3	**4** Measure 10 objects to the nearest ¼, ½, or1/8 inch. Put the data on a line plot. How many object measured 1/4 inch? 1/2 inch? Add the objects together end to end. What is the total length?	**5** The difference between two mixed numbers is 31/4. What might the two mixed numbers be? Show as many different solutions as you can. Explain your strategy.	**6** **Play Close to 1000**. (see directions)	**7** Play ***Concentration*** at www.**illuminations.nctm.org** Choose: ***fractions, face down.*** Draw pictures that represent some fractions.	**8** Vowels are worth $50 each, consonants are worth $40. Can you make a word worth exactly $200? $600?	9
10	**11** I earn $5 per hour babysitting and $4 per hour for weeding the garden. Last week I did 7 hours babysitting and 6 hours weeding. How much more money do I need to buy a game that costs $80.00?	**12** Play ***Fraction Game*** at **www.illuminations.nctm.org** How many moves did it take to get all the red markers to the right side? Can you beat your score?	**13** Measure the perimeter of two different sized windows in your home. Find the difference of the perimeters.	**14** A cake recipe calls for you to use 3/4 cup of milk, 1/4 cup of oil, and 2/4 cup of water. How much liquid was needed to make the cake? Is this more or less than a pint? How do you know?	**15** Write a word problem whose answer is 154. Have someone solve the problem.	**16**
17	**18** List some capital letters (H, F…) that have one pair of parallel lines. Are there any that have two pair of parallel lines or three?	**19** Make the largest and smallest numbers you can find using the digits 4, 1, 7, 8, and 2. Find their difference and sum.	**20** Try a new activity at **www.coolmath4kids.com** Challenge yourself. What did you choose to do?	**21** What factors can you use in this equation, __x 5 = __, to make a product that is an odd number between 30 and 60? Show all possible solutions. Explain your strategy.	**22** Use 5 playing cards to make the largest 5-digit number possible. Represent the number in numeral, word and expanded forms. Repeat with 5 more cards.	**23**
24	**25** Visit the game room at **www.aplusmath.com** Record what you played	**26** Have a scavenger hunt for real-world examples of parallel lines (ex. railroad tracks)	27 Play a game. What strategy did you use? Would you use that strategy again?	28 A regular pentagon measures 2 1/8 cm on one side. What is the perimeter of the pentagon? .	29 **YOU DID IT!** Please bring your journal to your fifth grade teacher on the first day of school!	30

Educational and Fun APPS and Websites to Practice Math

Please take some time to do these activities and record your choices on the "Create Your Own Summer Math Calendar!" sheet provided.

Websites

Here are websites that you can access at the **Cambridge Public Library** if you do not have a computer at home

http://www.funbrain.com/
http://www.aplusmath.com/
http://pbskids.org/cyberchase/math-games/
http://illuminations.nctm.org/ActivitySearch.aspx
http://www.gregtangmath.com/
http://www.coolmath4kids.com/
http://bedtimemath.org
http://www.playkidsgames.com./
http://www.coolmath.com./
http://www.figurethis.org./index.html
http://resources.oswego.org/games/mathmagician/cathymath.html

APPS to Practice Math!

Try handing your smartphone or iPad to your child while you are driving or watching TV and let them practice their math on a free or inexpensive app.

APPS for 3 - 5	APPS for all Grades
Everyday Mathematics, Beat the Computer, Multiplication	Fast Math
Everyday Mathematics, Divisibility Dash	Fast Math Challenge HD
Everyday Mathematics, Equivalent Fractions	Fraction App by Tap to Learn
Juicy Math – Multiplication and Division	Kakooma
Motion Math HD	Math Matrix HD
Pizza Fractions: Basic Conversions	Quick Math Game
Pizza Fractions: Comparing Simple Fractions	PopMath
Times Tables	iEstimation
Tony's Fraction's Pizza Shop	Pick-a-Path
Pearl Diver 3 - 8	Sumdog
	Conundra Math
	Cloud Math

Create Your Own Summer Math Calendar!
Grade _____

If the activities suggested don't seem to "fit your child" or you have your own websites/literature/math practice you would like to do you can create your own math calendar. Feel free to substitute your own activities that better suit your needs or learning style. All we ask is that you document your created activities below. Remember: the goal is to complete 15 activities each month. You can certainly use this sheet to record more!

#	Date Completed	Description of Math Activity
1		
2		
3		
4		
5		
6		
7		

8		
9		
10		
11		
12		
13		
14		
15		

Students' name: _____

Parent's Signature: _____

Grade 5 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.

July 2
28 is a composite number. Possible answers for three facts: an even number; a perfect number as the sum of it's proper factors (besides 28) equal to 28; the ones place is 4 times the size of the tens place.
When rounded to the nearest ten, it is 30.

A prime number is a whole number greater than zero that has exactly two different factors, one and itself. For example, 5 is a prime number because its only two factors are 1 and 5. A composite number is a whole number greater than zero that has more than two different factors. For example, 8 is a composite number because its factors are 1, 2, 4, and 8.

1 is neither prime nor composite. It is not prime because it does not have exactly two factors. It is not composite because it does not have more than 2 factors. 1 is a *special* number.

July 3
The sprinkler rotated 90 degrees. The sprinkler needs to rotate 270 degrees to cover the full 360 degrees.

July 7
4.527

July 9
Examples:
$0.58 > $0.26
$1.13 < $1.24

July 10
6, 11, 16, 21…
The pattern is an even number followed by an odd number. This pattern is happening because an even plus an odd number is odd (6 + 5 = 11), and an odd plus an odd is an even number (11 + 5 = 16)

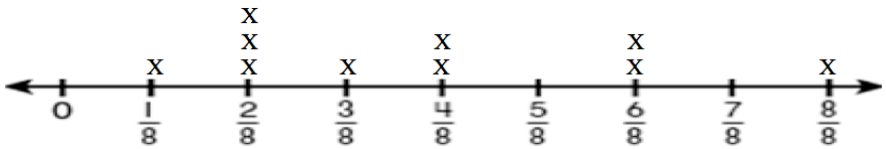
July 16
5 pizzas for 15 friends 15 x 1/3 = 5
3 pizzas for 9 friends 9 x 1/3 = 3

July 18
Examples:
2 1/2 + 2 1/2 = 5
1 3/4 + 3 1/4 = 5
1 1/4 + 3 3/4 = 5

July 30
1/3 + 1/3 = 2/3 of the pizza was eaten
1/3 of the pizza was left

August 1
A design is symmetrical if a line can be drawn such that the design can be folded along the line into matching parts.

August 4
Example:



August 5
Examples:
5 ¾ - 2 2/4 = 3 ¼
9 ¾ - 6 ¾ = 3 ¼
4 2/4 – ¼ = 3 ¼

August 11
7 hours of babysitting times 5 dollars per hour 7 x 5 = 35 dollars
6 hours of weeding times 4 dollars per hour 6 x 4 = 24 dollars

$24 + $35 = $59
$80 - $59 = $21

You need $21 more dollars to buy the game.

August 14
3/4 + ¼ + 2/4 = 6/4 = 1 2/4
1 2/4 cups of liquid
This is less than a pint because there are 2 cups in a pint.

August 18
E, F, H, I, M, N, Z
E has 3 parallel lines

August 19
The largest number is 87,421.
The smallest is 12,478
Their sum is 99,999.
Their difference is 74,943.

August 21
7 x 5 = 35
9 x 5 = 45
11 x 5 = 55

August 22
Example:
Numeral: 86,532
Word Form: eighty six thousand five hundred thirty two
Expanded Form: 86,532 = 80,000 + 6,000 + 500+30+2

August 28
A pentagon has 5 sides.
2 1/8 x 5 = 10 5/8 cm