Fairfield Public Schools

Mathematics Packet

for

Students entering Fourth Grade

Dear Parent or Guardian and Third Grade Student,

Congratulations on successfully completing Third Grade! In order to help you maintain all the great strategies, skills and concepts you learned this year and to be ready for Fourth grade, we hope you complete the attached summer packet. The packet consists of 2 calendar pages, one for July and one for August, as well as two pages of Optional Weekly Activities. It also includes directions for math games to be played at home, cool math books we recommend and a link to the Fairfield Public Schools K-5 Wikispace, (http://fairfieldpublicschoolsk5math.wikispaces.com), for more game ideas, websites and apps.

We'd like you to try to spend at least 10 minutes a day, 4 – 5 days a week this summer working on the attached problems. Just a few minutes each day spent "thinking and talking math" will help reinforce the math that you have learned and begin to prepare you for all the new concepts you will learn in Fourth Grade. The goal of this packet is to keep you fresh while still having fun, working collaboratively to communicate your mathematical thinking. Remember to discuss how you approached a problem, what strategies you used and why, and how you know your solution makes sense.

The math practice in this summer packet address the new Connecticut Core Standards for Mathematics which incorporates the Common Core Standards addressing these 4 critical areas in grade 3:

(1) developing understanding of multiplication and division and strategies for multiplication and division within 100
(2) developing understanding of fractions, especially unit fractions (fractions with numerator 1)
(3) developing understanding of the structure of rectangular arrays and of area
(4) describing and analyzing two-dimensional shapes

When you have completed the packet, please sign the contract below and return to your new teacher in the Fall. Most importantly, have a safe and happy vacation!

_____
DATE

I, _____, completed at least 200 minutes of math practice this summer.

_____ _____
STUDENT SIGNATURE PARENT/GUARDIAN SIGNATURE

Grade 4 Summer Math Ideas

Cool Math Books to Read:

The Best of Times by Greg Tang
Fraction Fun by David Adler
The $1.00 Word Riddle Book by Marilyn Burns
Math for All Seasons by Greg Tang
Pigs will be Pigs: Fun with Math and Money by Amy Axelro

Games To Play

1. **Multiplication War**
Use a deck of cards, face cards equal 10, aces equal 1. 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.

2. **Close to 1,000**
Use a deck of cards, with the face cards removed. Treat the ace as the number 1. Deal 8 cards to each player. Use any 6 of your cards to make two 3-digit numbers. Try to get a sum that is close to or equal to 1,000. Write these two numbers on a piece of paper. Your score is the difference between your number and 1,000.
Example: Your eight cards are **1, 5, 4, 3, 1, 8, 3, 8**
You can combine 148 + 853= 1,001 Your score is 1 since the difference between 1,001 and 1,000 is 1. Discard the 6 used cards and pick 6 new cards. Whoever has the lowest total score after 5 rounds wins the game.

3. The following games may be found on the Fairfield K-5 Math Wikispace website (http://fairfieldpublicschoolsk5math.wikispaces.com):
Cover the Counters, Salute the General, Race to Zero, Target 300, Guess my Rule and Beat the Teach. On the Wikispace, go to Grade 3 Skills Practice, and open the Math Fluency Game Packet.

Other games to play: Monopoly, Othello, Battleship, Connect Four, Mancala, Checkers, Set, jigsaw puzzles, Parcheesi, Crazy Eights, Legos, K'Nex.

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

July Entering Fourth Grade Mathematics Calendar

Monday	Tuesday	Wednesday	Thursday	Friday
Glen, Harry and Kim each have a different favorite sport among tennis, baseball and soccer. Glen does not like baseball or soccer. Harry does not like baseball. Name the favorite sport of each person.	I am a number between 20 and 30. When you divide me into 6 equal groups, there is an even number in each group and 2 are left over. What number am I? Write your own division riddle.	Read Fraction Fun by David Adler. Which is larger, 2/3 or 3/4? How do you know? Prove it.	Play a game at Hooda Math. http://www.hoodamath.com	**Family Math Activity**: Play the game **Close to 1,000** (see directions)
Vanessa had 120 stamps. First she gave her sister half of the stamps and then she used three to mail letters. How many stamps does Vanessa have left?	A comic book costs 0.47¢. The store owner reversed the two digits. How much did he overcharge the customer?	Ron has 64 marbles. He gives half of them to Don. Don gives half of those marbles to Tom. How many marbles did Don give to Tom?	Read The Best of Times by Greg Tang. Make a set of flash cards and practice multiplication facts.	**Family Math Activity**: Play **Monopoly** Did you use a strategy? What was it?
I have exactly ten coins whose value is $1.00. If three of the coins are quarters, what are the remaining coins?	What time did the sun rise? What time did the sun set? How many hours between the sunrise and sunset? Choose another activity you do and record the start and end time. Find the elapsed time.	Play the **Product Game** at http://illuminations.nctm.org Record the strategy that you used.	Figure out your age in months. How many months old are you?	**Family Math Activity**: Play **Salute the General**. Ask, "How do you know?" as you play. Justify your thinking!
Write a story problem that can be solved using the number sentence 9 x 3 = _____	Arrange the fractions in order, beginning with the least. Explain your answer with a picture. 1/5, 1/7, 1/3	Jack is thinking of a number. It is less than 20 and more than 16. When you count by 3's you say the number. What number is Jack thinking of?	Read Pigs will be Pigs: Fun with Math and Money by Amy Axelrod. Get a menu from a restaurant and add up what it would cost for your family to eat there.	**Family Math Activity:** Play **Race to Zero**. Did you use a particular strategy to help you get to 0?

August Entering Fourth Grade Mathematics Calendar

Monday	Tuesday	Wednesday	Thursday	Friday
Draw a picture of a quadrilateral. Draw a picture of a rhombus. How are they alike? How are they different?	Play **Hidden Picture** (choose which operation) www.aplusmath.com	A room has 6 tables. Each table has either 4 or 5 chairs. There are 28 chairs in the room. How many tables have 5 chairs?	Estimate how long it will take you to do 100 jumping jacks. Did it take more or less than 5 minutes? Record your time and compare with a friend.	**Family Math Activity**: Play **Target 300.**
Carl made a tower with 4 blocks. The red block is not on the bottom. The blue block is not on the top. The green block is under the red block. The yellow block is on top of the blue block and under the green block. The _____ block is on top.	Roll 2 dice and multiply to find the product. Record the product. Do this 25 times. Create a bar graph with the results. What do you notice?	Find a newspaper and cut 5 articles or pictures out. Use a ruler to measure the length and width of each article or picture. Find the area, then organize them by area from least to greatest.	Draw a 6 inch number line that begins with 0 and ends with 1. Roll a die. Divide your number line into this number of equal segments. Label the segments. Explain your thinking.	**Family Math Activity**: Play **Mancala** or **Checkers**. What strategy did you use to play?
Play a new game at Chili Math. http://www.chilimath.com	Select ten items from a grocery flyer and find the total cost of the items. Calculate how much change you would receive from a one hundred dollar bill.	A farmer has chickens and cows. What combination of animals could total 24 legs? Is there more than one combination?	When rounding to the nearest hundred, what is the smallest whole number that will round to 500? The largest? How many different whole numbers will round to 500?	**Family Math Activity**: Play **Guess My Rule.**
I am a 2-digit number less than 50. If you put me in groups of 5, there are 2 left over. The sum of my digits is 9. What number am I?	Read, ***Math for All Seasons*** by Greg Tang. Make up your own math riddle.	Mary, Tom, Joan and Bill were bowling. Mary did not go last. Joan bowled after Tom but before Bill. Joan did not bowl right after Tom. Mary was the _____ bowler.	Rebecca has 4 coins: a penny, a nickel, a dime and a quarter. How many different amounts of money can she make using one or more of the coins?	**Family Math Activity**: Play **Beat the Teach**.

Optional Weekly Activities

Activity One: A Family Outing

Your parents have asked you to research and compare the cost of different family outings so that you can recommend one that will be fun, but doesn't cost too much. Research the costs involved in all the members of your immediate family visiting the following places on a Saturday afternoon: an ice-skating rink, a museum, an amusement park, the zoo, or a movie theater. You may use the newspaper or the Internet to get your information. Then present your recommendation to your parents. Make sure you include a breakdown of the entrance costs for your family for each of the places you researched, and be sure to explain why this outing would make the best choice!

Activity Two: Designing a Town Map

For this project you will create a map of an imaginary town that includes different kinds of lines, angles and shapes. Your map must include the following:

- The town name
- A map scale
- At least two sets of streets that are parallel
- At least two sets of streets that are perpendicular
- At least two streets that intersect another to form a right angle
- Eight different 2-dimensional shapes to represent buildings or local attractions (e.g. park, movie theater, pool)
- Names for each street/building/local attraction

Bonus:
Write out three sets of clear directions to get from one location to another in your town.

Activity Three: Design a Math Game

You are a board game designer! You are creating a game for your classmates to play. Your game can focus on any mathematical concepts you have learned (e.g. geometry, number sense, addition, subtraction, multiplication or division). Make sure that you provide clear directions so players will understand how to play your game. Make an answer key to go with your game (if needed). Write a brief description explaining how this game can help students improve their math skills and understandings.

Activity Four: Tallest Buildings of the World

In this project you will research some of the world's tallest buildings and the population of the cities where they are located. Round all measurements to the nearest whole number. Use the library or internet to research the names of 4-5 of the tallest buildings in the world and mark their locations on a map. Record the year each building was constructed and three other interesting facts about it. Compare and order the populations of the cities where each building is located. Does the city with the tallest building have the largest population? Create a bar graph to compare the height of the buildings. Be sure to include a title and labels!

Optional Weekly Activities

Activity Five: A Class Pet

Your teacher is considering getting a class pet and has asked you to research how much it would cost to feed a hamster, a snake or a leopard gecko per year. Display your data about the costs to feed each pet in a bar graph. Be sure to include a title and labels! Write a recommendation to your teacher based on your data. Write a paragraph explaining how you collected your data and the math you used in completing the project.

Activity Six: Planning a Birthday Party

Your mom and dad said that you can help plan your birthday party! YAY! You are to pick the theme of the party and make a list of all the items that you will need: tablecloth, goody bags, goody bag items, cups, plates, forks, balloons, and of course, the cake. You may use the Internet for your research or look at fliers or catalogs. You might even want to visit Party City or other places to find out how much it would cost to have a party if you invited ten friends. Share the list and the expenses with your parents.

Activity Seven: Split the Bill

You visit a new restaurant for dinner with three of your friends. After a delicious meal, the waiter hands you the check so that you can split the bill equally with your friends. For the project: decide on the type of restaurant you will visit. Create a restaurant menu that shows the price for five different drinks, entrees, side dishes and desserts. Create a guest check that shows what each person ordered, the cost of each item and the total cost of the meal. Split the bill equally with your friends. How much money does each person need to pay? Explain your thinking. Think of a creative way to share your work!

Activity Eight: Create a Math Storybook

In this project you can choose to create a math storybook for the local library or the school library. Requirements: Choose a math topic and decide on a title for your book (e.g. A Day without Measurements, The Land of Quadrilaterals, Fraction Frenzy etc.) Create your main characters and supporting characters. Write a draft copy of an original math story. When you are ready to publish: design a cover that includes the title, author and an illustration. Write a blurb on the back cover that explains how your book will help the reader learn more about math, and suggest what grade level it is best suited to. Type or neatly print your story. Include at least one illustration in your story.