

Fairfield Public Schools



Mathematics Packet

for

Students entering Fifth Grade



Dear Parent or Guardian and Fourth Grade Student,

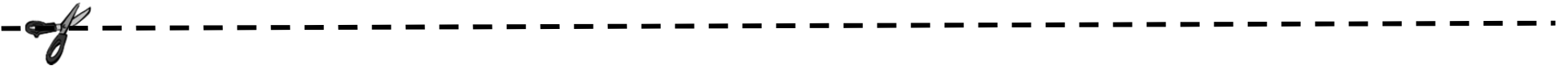
Congratulations on successfully completing Fourth Grade! In order to help you maintain all the great strategies, skills and concepts you learned this year and to be ready for Fifth grade, we hope you complete the attached summer packet. The packet consists of 2 calendar pages, one for July and one for 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://fairfieldpublicschools5math.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 Fifth 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 addresses the new Connecticut Core Standards for Mathematics which incorporates the Common Core Standards addressing these 3 critical areas in grade 4:

1. developing an understanding and proficiency with whole number operations and extend this understanding to multi-digit whole number multiplication and division including the use of efficient procedures.
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.

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 5 Math Ideas

Cool Math Books to Read:

A Place for Zero (Charlesbridge Math Adventures)

by Angeline Sparagna LoPresti

Sir Cumference and the First Round Table by Cindy Neuschwander

Sir Cumference and the Great Knight of Angleland by Cindy Neuschwander

Fraction Fun by David Adler

Math Curse by Jon Scieszka

How Much Is a Million? By David M. Schwartz

Anno's Mysterious Multiplying Jar by Masaichiro Anno

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 Double War

Remove all the face cards and 10 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. If two or more of the products are the same, it's war. The players with equal products each lay three more cards face down, then four cards face up multiplying another 2-digit by 2-digit number. The player with the highest product wins all the cards in the hand. (This game can be played with more than one deck.)

2. 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!

3. Hit The Target

Groups of two to five players

Ace worth 1 or 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

How to Play: Each group of 2 - 5 players selects a target number from 1- 30. One of the players will turn five cards from the deck face up and the object is for each player to make a number sentence using all five cards with any operations to reach the target number.

The first player to find a winning combination keeps the cards and chooses the next target number. If no combination is found in about a minute, flip over another card and try to make a combination using six cards.

4. More games may be found on the Fairfield K-5 Math Wikispace website (<http://fairfieldpublicschools5math.wikispaces.com>):

On the Wikispace, go to Grade 4 Skills Practice, click on Basic Facts and open the Math Fun Facts Fluency Packet.

Other games to play: Monopoly, Othello, Battleship, Connect Four, Mastermind, Mancala, Legos, K'Nex, Simon, Yahtzee, puzzles, Parcheesi, Crazy Eights

Worksheets to Practice Math:

<http://www.gregtangmath.com/>

<http://www.commoncoresheets.com/>

July Entering Fifth Grade Mathematics Calendar

Monday	Tuesday	Wednesday	Thursday	Friday
<p>Katie and her mother are buying mini chocolate bars to make s'mores for their camping trip. The candy comes in two different sized packages: an 8-ounce package costs \$1.45 and a 12-ounce package costs \$1.95. What is the least expensive way to buy 11½ pounds of the mini chocolate bars?</p>	<p>Tara and Jax each had a bagel for breakfast. Tara ate ¼ of her bagel. Jax ate 3/8th of his bagel. Jax thinks he ate more. Do you agree? How do you know?</p>	<p>A lawn water sprinkler rotates 65 degrees and pauses. It then goes back 25 degrees and pauses again. What is the total degree rotation of the sprinkler? To cover a full 360 degrees, how many more degrees will it move?</p>	<p>Make this equation true:</p> $\begin{array}{r} 50 _ 6 \\ - _ 48 _ \\ \hline 16 _ 8 \end{array}$	<p>Family Math Activity</p> <p>Play the game <u>Close to 1000</u>. (see directions)</p>
<p>Solve the riddle: I am a whole number between 1 and 100. If you multiply me by 3, my product is less than 300 but greater than 290. The digit in the one's place is an odd number. The sum of all the digits is 18. What number am I?</p>	<p>Mr. White wants to redo his bathroom floor. His bathroom is 5 ft. by 10 ft. If Mr. White uses 6 inch square tiles, how many will he need?</p>	<p>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. Find the total of your amounts. Who scooped the most?</p>	<p>What number could you put in the blank to make the expression true?</p> <p>$(4 \times 10) + 8 = 12 \times \underline{\quad}$</p>	<p>Family Math Activity</p> <p>Play <u>Multiplication Double War</u>. (see directions)</p>
<p>Place eight quarters in a row. Replace every other coin with a dime. Replace every 3rd coin with a nickel. Replace every 4th coin with a penny. What is the value of the eight coins now? How much more or less money do you have than when you started?</p>	<p>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.</p>	<p>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?</p>	<p>Marvin works in the summer for his dad's lawn service, 5 days a week for 4 weeks. His dad offers to pay him \$125 a week. Instead, Marvin offers to work for \$0.01 the first day, \$0.02 the second day, \$0.04 the third day, \$0.08 the fourth day, and so on. Should Marvin's dad accept his offer? Explain.</p>	<p>Family Math Activity</p> <p>Play <u>Hit the Target</u> (see directions)</p>
<p>Create a symmetrical design using the following:</p> <ul style="list-style-type: none"> • 90° angle' • 45° angle • a set of parallel line segments • a set of perpendicular line segments • an obtuse angle 	<p>Abby had 36 jelly beans to share. She gave 1/3 to her brother. Then she gave ½ of what was left to her sister. She kept the rest. How many jelly beans did Abby get to keep? Who had the most jelly beans?</p>	<p>Play the <u>Product Game</u>. Go to http://illuminations.nctm.org/Activity.aspx?id=4213</p>	<p>Play the Factor Game.</p> <p>Go to http://illuminations.nctm.org/Activity.as</p>	<p>Family Math Activity</p> <p>Your choice! Choose any of the games from the list of suggestions above.</p>

August Entering Fifth Grade Mathematics Calendar

Monday	Tuesday	Wednesday	Thursday	Friday														
<p>You have two minutes. Write down all the multiplication and division facts you know. GO! How many facts did you know? What did you notice about the facts you know? What facts are missing? Choose 5 facts to add to what you know.</p>	<p>Read <i>Anno's Mysterious Multiplying Jar</i>. How many jars are there in the end of the story. How do you know? Did you notice a pattern?</p>	<p>The sum of two mixed numbers is $5\frac{3}{4}$. What might the two mixed numbers be? Show as many different solutions as you can. Explain your strategy.</p>	<p>Fill in the squares to give the correct answer to the problem. All of the digits in the addends are the same.</p> $\begin{array}{r} \square \square \\ + \square \square \\ \hline 1 \square 8 \end{array}$	<p>Family Math Activity</p> <p>Play <i>Hit the Target</i> (see directions)</p>														
<p>Measure 10 objects to the nearest $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{1}{8}$ inch. Put the data on a line plot. How many objects measured $\frac{1}{4}$ inch? $\frac{1}{2}$ inch? Add the objects together end to end. What is the total length?</p>	<p>The difference between two mixed numbers is $3\frac{1}{4}$. What might the two mixed numbers be? Show as many different solutions as you can. Explain your strategy.</p>	<p>Jessica bought a T-shirt and had her name put on it. The shirt cost \$9.96. Each letter cost 50 cents extra. How much did the T-shirt cost Jessica? How much would the shirt cost you?</p>	<p>A rabbit and a frog jump up a flight of 36 steps. The rabbit jumps 3 steps at a time while the frog can only go 2 steps at a time. They both reach the top at the same time but they also land on other common steps together. What are all the other steps they both land on? How did you solve it?</p>	<p>Family Math Activity</p> <p>Play <i>Salute the General (multiplication version)</i>. Go to http://fairfieldpublicschools.k5math.wikispaces.com On the Wikispaces, go to Grade 4 Skills Practice, click on Basic Facts and open the Math Fun Facts Fluency Packet.</p>														
<p>$14 \times 7 = 98$</p> <p>True or False? How do you know?</p>	<p>I spent $\frac{2}{3}$ of my money at the dollar store. Then I went to the craft store and spent $\frac{1}{3}$ of what was left. When I left the craft store, I had \$4.00. How much money did I have before I went shopping?</p>	<p>Measure the perimeter of two different sized windows in your home. Find the difference of the perimeters.</p>	<p>A cake recipe calls for you to use $\frac{3}{4}$ cup of milk, $\frac{1}{4}$ cup of oil, and $\frac{2}{4}$ cup of water. How much liquid was needed to make the cake? Is this more or less than a pint? How do you know?</p>	<p>Family Math Activity</p> <p>Play <i>Beat the Teach</i>. Go to http://fairfieldpublicschools.k5math.wikispaces.com On the Wikispaces, go to Grade 4 Skills Practice, click on Basic Facts and open the Math Fun Facts Fluency Packet.</p>														
<p>Complete the table. What's the rule?</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>A</td> <td>B</td> </tr> <tr> <td>4</td> <td>9</td> </tr> <tr> <td>2</td> <td>5</td> </tr> <tr> <td>3</td> <td></td> </tr> <tr> <td>7</td> <td>15</td> </tr> <tr> <td>5</td> <td></td> </tr> <tr> <td></td> <td>21</td> </tr> </table>	A	B	4	9	2	5	3		7	15	5			21	<p>What are all the factors can you use in this equation, $\square \times 5 = \square$, to make a product that is an odd number between 30 and 60? Show all possible solutions. Explain your strategy. What do you notice? Can you test your noticings with products larger than 60?</p>	<p>Amy has 3 times as many rainbow loom bracelets as Michael. Theo has twice as many as Michael. The sum of all of the bracelets is 30. How many bracelets does each friend have? How do you know?</p>	<p>$\frac{1}{3}$ of 12 > $\frac{1}{2}$ of 10</p> <p>True or False? How do you know?</p>	<p>Family Math Activity</p> <p>Your choice! Choose any of the games from the list</p> <p>of suggestions above.</p>
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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.