



Beecher Road School

Summer Math Packet

For

Students Entering Fifth Grade



Dear Fifth Grader,

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. It also includes directions for math games to be played at home as well as cool math books we recommend. We'd like you to try to spend at least ten minutes each day this summer, 4 - 5 days a week, working on the attached problems, reading some of the suggested math books, visiting the websites, or practicing your math facts.

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 for you to have fun while you keep your math skills and concepts fresh. Remember to communicate your mathematical thinking by discussing how you approached a problem, what strategies you used and why, and how you know your solution makes sense.

When you have completed the packet, please sign your name on the slip at the bottom of this paper and ask your parent to sign it, too. Please return the slip to your fifth grade teacher in August.

Have a safe and happy summer vacation!



Date

I, _____, spent at least 200 minutes working on math activities this summer.

Student Signature

Parent Signature



Grade 5 **SUMMER** Math Ideas

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

Books About Perseverance and Mindset:

The Girl Who Never Made Mistakes by Mark Pett and Gary Rubinstein

Making a Splash by Carol E. Reiley

The Most Magnificent Thing by Ashley Spires

Giraffes Can't Dance by Giles Andreae

Your Fantastic Elastic Brain by JoAnn Deak

Games To Play:

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

1. Multiplication Double War: Remove all the face cards and 10s 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 two-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 example, you can 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. Use a deck of playing cards. Aces are worth 1 or 11, Jacks are worth 12, Queens are worth 13, Kings are worth 14.

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.

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

**Entering 5th Grade
July 2018**

<p>The school bought 467 pieces of purple construction paper and 234 pieces of orange construction paper. The students used 345 pieces of construction paper. How many pieces of construction paper are left?</p>	<p>Tara and Jax each had a bagel for breakfast. Tara ate $\frac{1}{4}$ of her bagel. Jax ate $\frac{3}{8}$th 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: Play the game Close to 1000. (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? $(4 \times 10) + 8 = 12 \times \underline{\hspace{1cm}}$</p>	<p>Family Math Activity: Play Multiplication Double War. (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 $\frac{1}{3}$ of a pizza. How many pizzas should they order? What if there were 9 friends?</p>	<p>Mark and Tom live next door to each other and are best friends. They love to play Wii each afternoon after school. Mark just got his Wii and has 8 video games. Tom has 56 video games! How many times more video games does Tom have than Mark?</p>	<p>Family Math Activity: Play Hit the Target (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 $\frac{1}{3}$ to her brother. Then she gave $\frac{1}{2}$ 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>Mark was arranging his photos in a photo album to share with his friends. The album had 15 pages and there were 8 photos on each page. How many photos did he take on his vacation?</p>	<p>Which is greater? 0.5 or 0.05 How do you know?</p>	<p>Family Math Activity: Your choice! Choose any of the games from the list of suggestions above.</p>

**Entering 5th Grade
August 2018**

<p>You have two minutes. Write down all the multiplication and division facts you know. <i>GO!</i> 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 <u>Anno's Mysterious Multiplying Jar</u>. 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> $\begin{array}{r} _ _ _ _ \\ + _ _ _ _ \\ \hline 1 _ _ _ 8 \end{array}$	<p>Family Math Activity: Play <u>Hit the Target</u> (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: Play <u>Multiplication Double War</u>. (see directions)</p>												
<p>$14 \times 7 = 98$ True or False? How do you know?</p>	<p>Mary loves to walk outside. On Monday, she walked 6.25 miles. On Tuesday she walked 5.75 miles. On Wednesday she walked 3.65 miles. On Friday, she walked more than she did on Tuesday but less than she did on Monday. What could the possible distance be that she walked on Friday?</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 : Play <u>Close to 1000</u> (see directions)</p>												
<p>Complete the table. What's the rule?</p> <table border="1" data-bbox="163 1144 327 1479"> <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> </table>	A	B	4	9	2	5	3		7	15	5		<p>What are all the factors can you use in this equation, $\times 5 =$, 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 True or False? How do you know?</p>	<p>Family Math Activity: Your choice! Choose any of the games from the list 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 map
- 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.