

Summer Mathematics Enrichment Packet For Student Entering Grade 4



You have learned so much in math this year! This packet is a compilation of important mathematical concepts and skills that you are expected to know prior to moving to the next level and exposure to new items for the upcoming year. These examples focus on both mathematical skills and problem solving. Be prepared to explain the reasoning behind your answers. Use a notebook to show all your work.

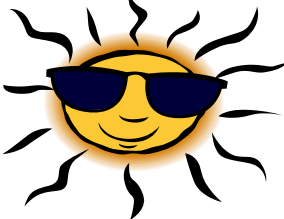
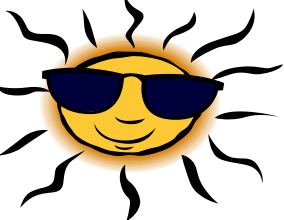
Have a happy and safe summer!

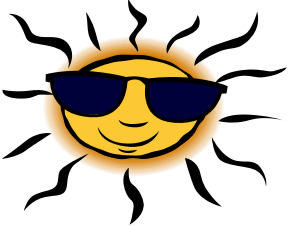
Some indicators that students leaving *Grade 3* should be able to perform include, but are not limited to:

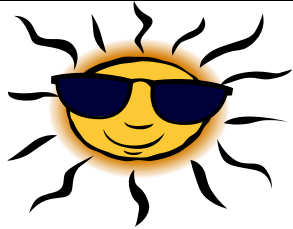
- Represent and solve problems involving multiplication and division
- Understand properties of multiplication and the relationship between multiplication and division
- **Fluently multiply and divide within 100**
- Solve problems involving the four operations and identify patterns in arithmetic
- Develop understanding of fractions as numbers
- **Represent fraction models and show fractions on a number line**
- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- Represent and interpret data
- Understand concepts of area and relate area to multiplication and to addition
- Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures
- Reason with shapes and their attributes

Throughout the summer continue to practice for fluency of all basic fact operations and think mathematically!

Most answers require individual student experiences. Therefore, only a few sample answers will be provided.

Week 1				
What time was it when you woke up this morning? What time was it 2 hours and 20 minutes before the time you woke up? What time will it be 47 minutes after you woke up?	List at least 7 different combinations of bills and coins that would add up to \$25.63.	Marcus has \$100.00. He spent \$23.45 on a pair of shoes, \$12.36 on a new shirt, and \$15.61 on a hat. How much money does Marcus have left?	Create an addition and a subtraction problem where 192 is the difference and 192 is also the sum. Ask a friend to solve the problems.	Arrange the digits 2, 8, 7, and 4 to make the largest number. Then, round that number to nearest thousands.
Week 2				
Your friend wrote this number: 4, <u>5</u> 86. What is the place value of the underlined digit? What number is 2,000 more than the given number?	Look through a magazine and find pictures that contain right, acute, and or obtuse angles. Cut them out and place them into your journal. Label the appropriate angles correctly.	If you double your age. How old would you be? How old would you be if you triple your age?	Look around a room in your house. Where do you see parallel lines? Perpendicular lines? Explain each object that contains these types of lines.	
Week 3				
Write and solve a story problem for $487 - 364 = \underline{\quad}$.	Grab some coins in your left hand, count the coins. Grab some coins in your right hand, count the coins. What is the difference of the coin values you grabbed? What is the sum?		You are asked to help stack books at the library. There are 8 shelves on a bookcase that you must stack. Each shelf holds 9 books. What is the total number of books that can be stacked on the 8 shelves?	Read a math book from the attached list of books.

Week 4				
<p>Draw a figure with more than one line of symmetry.</p>	<p>Use the correct symbol to compare. (<, >, or =)</p> <p>1) $246 + 43$ <input type="checkbox"/> $187 + 102$</p> <p>2) $367 - 123$ <input type="checkbox"/> $298 + 98$</p> <p>Create 3 more statements and ask a family member to solve.</p>	<p>You have \$10. You bought an ice cream cone for you and your brother and received \$5.14 in change. How much did an ice cream cone cost? Draw an illustration to represent how you determined your answer.</p>	<p>Visit your local take-out restaurant with a parent. Plan a meal for your family using the take-out menu. First, estimate the cost. Then, record the actual cost. What is the difference between your estimate and actual cost?</p>	
Week 5				
<p>Read a math book from the attached list of books.</p>	<p>Survey at least 10 friends or family members to determine their favorite pizza toppings. Use the data from the survey to create a pictograph. Include all characteristics of a pictograph.</p>	<p>Look at the previous day's directions. Using the data from your survey. Choose the top four toppings and create a bar graph. Then, create 5 questions in order to analyze the data (include the answers).</p>	<p>Select a day and create a schedule of activities for that day. Begin by recording the time you wake up to the time you go to bed. Compute the elapsed time between each activity. Share your schedule with your parent/guardian.</p>	<p>Choose 5 activities from the schedule you made on the previous day. Make a clock face to show the end time for each of the selected activities.</p>

Week 6				
<p>Ask a family member to take you to the grocery store. In the vegetable section, select five different items. First, estimate the weight of each item and record your estimation. Next, weigh each item and record. Last, compare the actual weights and the estimates.</p>	<p>Look around your house for objects that are symmetrical. Draw the objects. Explain to a family member why those objects are symmetrical. Next, with a family member, look around your neighborhood for objects that are symmetrical. Draw those objects.</p>		<p>Estimate the length and width of a table in your home. Then select a unit of measurement. Using your unit of measurement, find the perimeter of the table.</p>	<p>Draw a picture of a pizza that you would love to eat. Cut the pizza so that each member in your family gets an equal share. In your math journal, write the fractional amount of pizza each family member will receive.</p>
Week 7				
<p>A family member wrote:</p> $183 = 124 + \square$ <p>What should go in the box?</p>	<p>Draw a number line beginning with 0. Place only the following numbers on your number line: $4\frac{1}{2}$, 2, 3.5, and $6\frac{7}{8}$. How did you decide where to place the numbers?</p>	<p>Draw a picture to model 48 as a product.</p>	<p>The baker arranged an array of cupcakes in each pan. Each pan started out with the same number of cupcakes each day. If the baker had a total of 100 cupcakes, how could he have arranged them in 5 pans?</p>	<p>Mary's rectangle has the area of 36 sq. units. Jeanine has a rectangle with the perimeter of 30 units. The two rectangles have different lengths and widths. Could they both have the same area? Show your work to prove your answer.</p>
Week 8				
<p>Read a math book from the list.</p>	<p>Joe listed the first 10 multiples for the number 3. Luis listed the first 10 multiples for the number 4. What same numbers did both boys write? How could you describe the numbers that are the same on both boys' list?</p>	<p>Draw a model of a ruler that is 4 inches long. Label all whole numbers, halves, quarters, and eighths.</p>	<p>Write an equivalent fraction for the whole number 4. Draw a picture to explain your answer.</p>	<p>Explain how you could use multiplication to help you solve this problem:</p> $56 \div \underline{\quad} = 8$

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Suggested Math Reading for Intermediate Grades

Title	Author
1. If You Made a Million	David M. Schwartz
2. Is a Blue Whale the Biggest Thing There Is? (Size)	Robert E. Wells
3. Math for All Seasons	Greg Tang
4. The Go-Around Dollar	Barbara Johnston Adams
5. The Cat in Numberland	Ivar Ekeland
6. Cook-A-Doodle-Do! (Capacity)	Susan Stevens Crummel
7. The Grapes of Math	Greg Tang
8. Math Potatoes: Mind-Stretching Brain Food	Greg Tang
9. The Story of Clocks and Calendars	Betsy Maestro
10. Full House: An Invitation to Fractions	Dayle Ann Dodds
11. A Cloak for the Dreamer (Shapes)	Aileen Friedman
12. A Fly on the Ceiling (Ordered Pairs)	Julie Glass
13. Cubes, Cones, Cylinders, and Spheres	Tana Hoban
14. Grandfather Tang's Story (Spatial/Shapes)	Ann Tompert
15. Sir Cumference and the Dragon of Pi (Circles)	Cindy Neuschwander
16. Sir Cumference and the Great Knight of Angleland (Angles)	Cindy Neuschwander
17. The Adventures of Penrose	Theoni Pappas
18. Three Pigs, One Wolf, and Seven Magic Squares (Tangrams/Shapes)	Grace Maccarone
19. What's Your Angle, Pythagoras? (Angles)	Julie Ellis
20. X Marks the Spot! (Ordered Pairs)	Lucille Recht Penner
21. Less than Zero	Stuart J. Murphy