Summer Math Learning Packet

Students Entering Grade 4

Discover mathematics all around you this summer!!! Just as with reading, regular practice over the summer with problem solving, computation, and math facts will maintain and strengthen the mathematical gains you made over the school year.

Attached to this letter, you will find creative mathematics activities to explore at home. 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 Summer Math Learning 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 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.

Fun math books to read	Fun websites to explore
The $1.00 Word Riddle Book by Marilyn Burns Fraction Fun by David Adler The Best of Times by Greg Tang Pigs Will be Pigs: Fun with Math and Money by Amy Axelrod	www.funbrain.com www.aplusmath.com www.pbskids.org https://illuminations.nctm.org/ www.setgame.com www.multiplication.com Investigations Math Games Investigations Math Words and Ideas Math At Home- The Learning Center Math Playground Virtual Manipulatives More Virtual Manipulatives Which one does not Belong

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 fourth grade teacher with his/her journal.

_____

Parent's signature Date

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Some of these activities have been adapted from materials developed by Cambridge and Brookline Public Schools

Third Grade Learning Goals

*In grade three, students continue to build their concept of numbers, developing an understanding of fractions as numbers. They learn the concepts behind multiplication and division and apply problem-solving skills and strategies for multiplying and dividing numbers up through 100 to solve word problems. Students also make connections between the concept of the area of a rectangle and multiplication and addition of whole numbers. Activities in these areas will include:

- Understanding and explaining what it means to multiply or divide numbers
- Multiplying all one-digit numbers from memory (knowing their times table)
- Multiplying one-digit numbers by multiples of 10 (such as 20, 30, 40)
- Solving two-step word problems using addition, subtraction, multiplication, and division
- Understanding the concept of area
- Relating the measurement of area to multiplication and division
- Understanding fractions as numbers
- Understanding and identifying a fraction as a number on a number line
- Comparing the size of two fractions
- Expressing whole numbers as fractions and identifying fractions that are equal to whole numbers (for example, recognizing that $^{3}/_{1}$ and 3 are the same number)
- Measuring weights and volumes and solving word problems involving these measurements
- Representing and interpreting data

Looking Ahead to Fourth Grade

*In grade four, your child use addition, subtraction, multiplication, and division to solve word problems, including problems involving measurement of volume, mass, and time. Students continue to build their understanding of fractions—creating equal fractions, comparing the size of fractions, adding and subtracting fractions, and multiplying fractions by whole numbers. They also start to understand the relationship between fractions and decimals. Activities in these areas include:

- Adding and subtracting whole numbers up to 1 million quickly and accurately
- Solving multi-step word problems, including problems involving measurement and converting measurements from larger to smaller units
- Multiplying and dividing multi-digit numbers
- Extending understanding of fractions by comparing the size of two fractions with different numerators (top numbers) and different denominators (bottom numbers)
- Creating equal fractions ($3\ /_{4} = 3x^{2}/_{4}x2 = 6\ /_{8}$)
- Adding and subtracting fractions with the same denominator
- Building fractions from smaller fractions ($^{3}/_{8} = {}^{1}/_{8}$+1/8+1/8)
- Connecting addition and subtraction of whole numbers to multiplying fractions by whole numbers
- Connecting addition of fractions to the concept of angle measurement
- Representing and interpreting data
- Converting fractions with denominators of 10 or 100 into decimals
- Locating decimals on a number line
- Comparing decimals and fractions using the symbols > (more than), = (equal to), and < (less than)

*****Adapted from *Parent Roadmaps* by Council for Great City Schools

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Grade 4

Summer Math Ideas

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 fourth grade teacher.

Each journal entry should

- Have the date of the entry
- Have a clear and complete answer
- Be neat and organized

Math Tools You'll Need:

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

Here is an example of a "Great" journal entry:

July 5th

Today I went outside to play at 9:35 am and came in at 12:05 pm. I was outside for a total of 90 minutes. This can also be written as 1 hour 30 minutes, or $1\frac{1}{2}$ hours.

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

Multiplication Compare

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.

Other games to play: Checkers, Othello, Memory, Set, jigsaw puzzles, Parcheesi, Crazy Eights, Connect Four, Legos, etc.

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July 2022 Entering Fourth Grade Mathematics Calendar

Day 1 If Mia painted 400 finger nails, how many people did she see?	**Day 2** Read ***Fraction Fun*** by David Adler. Which is larger, 2/3 or 3/4? How do you know? Prove it.	**Day 3** Try a new game at www.funbrain.com Challenge yourself.	**Day 4** How many different ways can you make $3.25? How many quarters do you have if you have $2.25 entirely in quarters?	**Day 5** Practice math facts in a fun way at the website www.multiplication.com What games did you play?
Day 6 Ask family and friends what their favorite summer activity is. Use a tally chart to collect your data. Make a graph of your choice to show the results.	**Day 7** Play a game. What strategy did you use? Would you use the same strategy again?	**Day 8** Play the ***Product Game*** at www.illuminations.nctm.org Record the strategy that you used.	**Day 9** Draw a design that has symmetry.	**Day 10** 325 + ____ = 375 500 = 475 + ____ ___ + 300 = 625 475 + 550 = ____ 275 + ___ = 550
Day 11 Write a story problem that can be solved using the number sentence 9 x 3 = _____.	**Day 12** What cars are parked on your street? Create a table of the make of cars parked on our street (ex. Honda, Ford…)	**Day 13** Read ***The Best of Times*** By Greg Tang. Make a set of flash cards and practice the multiplication facts.	**Day 14** Play ***Chairs*** at www.illuminations.nctm.org If you have 9 tables, what's the greatest number of people you can seat in a line?	**Day 15** Play a strategy game. What strategy did you use? Would you use it again?
Day 16 How many different ways can you make $1.00 using quarters, nickels, and dimes?	**Day 17** If a movie actually began at 7:05 and finished at 8:45, how much time elapsed?	**Day 18** Figure out your age in months. Figure out your age in days.	**Day 19** Roll 2 dice and multiply to find the product. Record the products. Do this 20 times. Create a bar graph with the results. What do you notice?	**Day 20** 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.
Day 21 60 ÷ 5 = ___ 55 ÷ ___ = 5 50 ÷ 5 = ___ 45 ÷ ___ =5 35 ÷ 5 = ___ What's your strategy?	**Day 22** Show 4 different ways to make $1.56 using coins and/or bills.	**Day 23** What number do you add to 74 to get 100? What are 2 numbers you can add to 245 to get 300? 245 + ___ + ___ = 300	**Day 24** Find 4 numbers larger than 1,000 in a newspaper. Put them in order from least to greatest. What is the difference between the smallest and the largest?	**Day 25** Play ***Concentration*** at www.illuminations.nctm.org Choose cards: ***fractions*** games: ***face down***. Draw pictures that represent some fractions.

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August 2022 Entering Fourth Grade Mathematics Calendar

Day 1 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.	Day 2 Play a game. What strategy did you use? Would you use the same strategy again?	Day 3 Write multiplication and division combinations for 6, 7, and 42. Write a word problem to go with these equations.	Day 4 How many hours did you sleep last night? Bedime:_____ Wake time:_____	Day 5 Write a word problem whose answer is12. Have someone solve the problem. Choose another answer and make up a problem.
Day 6 Write a schedule for tomorrow that includes the hours and minutes of your activities.	Day 7 A farmer has chickens and cows. What combination of animals could total 24 legs? Is there more than one combination?	Day 8 Solve. 6x6 7x7 8x8 9x9 What patterns do you notice?	Day 9 Use the flash cards that you made, and practice your multiplication facts.	Day 10 Family fun! Go on a road trip. Write down the miles on the odometer when you leave. Write down the miles when you get home. How many miles did you travel?
Day 11 Gather 3 store receipts. Find the total amount that was spent.	Day 12 Read ***The $1.00 Word Riddle Book*** by Marilyn Burns. What is your name worth? What is the most expensive word you can make?	Day 13 You went shopping with a $5 bill and spent $2.40 Is your change more or less than 40 dimes? Prove your answer.	Day 14 Plan a meal for your family. With an adult, make a list of ingredients, go shopping, and then follow the recipes.	Day 15 What time is it now? What time will it be in $6\frac{1}{2}$ hours? What time was it 15 minutes ago?
Day 16 Which Red Sox player has the highest Batting Average? Who has the lowest? What is the difference?	Day 17 25x2 25x4 25x6 25x8 What is your strategy?	Day 18 Do you think zero is an odd or even number (or maybe neither)? Why? Think of reasons to back up your answer.	Day 19 What number am I? I am less than 25x10 and greater than 22x10. I am a multiple of 5. I am odd. The sum of my digits is 10.	Day 20 **YOU DID IT!** Please bring your journal to your fourth grade teacher on the first day of school!

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