



# Summer Math Challenge

You ask your child to read over the summer... have them practice math skills, too!

Can you imagine how far behind students would be if they stopped attending math class at the end of March? If a student doesn't practice his or her math skills during the summer, it has the same effect on math achievement. Researchers have found that the lack of math skill practice over the long summer months results in an average loss of 2.6 months of study when measured from year to year.

The math teachers will challenge students to continue to practice math skills over the summer, and will recognize every student who demonstrates that they have participated in math-related activities over the summer. For example, if your child spends just 9 minutes a day, he or she will have completed 10 hours of math! Practice can include playing multiplication games online to keep fluent with math facts, or can incorporate real-life use of math such as helping to plan parts of a family vacation or estimating costs of back-to-school supplies and clothes.



## How to get started?

Check out the activities below and document what your child completed on the chart found at the end of this document and sign it. Have your child hand in the chart to his/her math teacher during the first week of the 2019-2020 school year.

**Students:** What can you do? Well, listed below are links to resources and activities that can help you get started! Don't forget that there are many other ways to use math in real life over the summer. These are just a few suggestions. Feel free to make up your own ideas! Just remember to keep track of what you do. There's a chart on the next page to help you.

***Have a great summer... and don't forget – math is everywhere! So practice, and turn in your log – you'll be recognized on the Math Wall of Fame in the school cafeteria.***



## Summer Math Challenge Log

Student's First and Last Name: \_\_\_\_\_

2019-2020 Grade Level:      K      1      2      3      4      5

Date	Type of Activity	Specific Activity Description	Amount of Time	Student Initial	Parent Initial
<i>Example:</i> 7/3	<i>Multiplication fact practice</i>	<i>Online game: Multiplication Grand Prix</i>	<i>30 minutes</i>	<i>JK</i>	<i>KAH</i>

\*If more space is needed, Please add paper to continue your log ☺

Total time in minutes \_\_\_\_\_ Time in hours \_\_\_\_\_

Parent Name: \_\_\_\_\_ Signature \_\_\_\_\_

*I verify that my child has completed the number of hours doing math activities as stated above.*



## Math Summer Suggestions

### Online Option:

- **Moby Max**- All students have an account! If you are a new student or need your login information again, contact the school. Once logged in, click on the Fact Fluency icon or Math Icon to begin working!

### Fact Fluency

- Fact fluency is one of the first casualties of the long summer vacation. **By the end of these grade levels, students should show fluency (quick recall) in these standards by the end of the school year:**
  - **K**- MAFS.K.OA.1.5 –*Fluently* add and subtract within 5.
  - **1**- MAFS.1.OA.3.6- Add and subtract within 20, demonstrating *fluency* for addition and subtraction within 10.
  - **2**- MAFS.2.OA.2.2- *Fluently* add and subtract within 20 using mental strategies. By the end of 2<sup>nd</sup> grade, know from memory all sums of two one-digit numbers.
  - **3**- MAFS.3.OA.3.7- *Fluently* multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that  $8 \times 5 = 40$ , one knows  $40 \div 5 = 8$ ). By the end of Grade 3, know from memory all products of two one-digit numbers.
  - **4**- MAFS.4.NBT.2.4- Fluently add and subtract multi digit numbers (up to 1,000,000 using standard algorithm.
  - **5**- MAFS.5.NBT.2.5- Fluently multiply multi-digit whole numbers using the standard algorithm.

*\*\*\*Keep in mind that the previous year's fluency standard does not go away. These are considered prerequisites for the next grade level. Past grade level standards should continually be practiced to maintain mastery.*



## Fact Fluency Games

- Flash Cards
- Triangle Flash Cards for  $+$ ,  $-$ ,  $\times$ ,  $\div$
- Multiplication.com has some great games to play by alone or against other kids online!
- You can print out Mad Minutes to see how much you know at Super Teacher Worksheets, and you can find worksheets covering fractions, decimals, and more at Education.com.



## Other Online Games:

- [Arcademic Skill Builders](#) is a great resource to refresh all math operation areas. Play arcade games to review basic operations, fractions, decimals, and working with money!
- Go to the [Math Playground](#) to practice skills like measuring angles, working with fractions, and creating congruent or similar shapes using transformations
- For fun logic games, try out [Math Maven's Mysteries!](#)
- [Math Hunt](#): fun with math in science, social studies, and finance.



## Traditional Games:

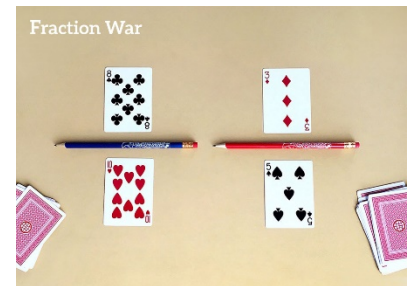
- **Board Games:** There are great games you can play to pass a rainy day and practice your math, too! You probably already have many of them at home.
- **Basic Operations**
  - Monopoly
  - Life
  - Payday
- **Patterns and Geometry**
  - Sequence
  - Blokus
  - Geoshapes
  - Quirkle
- **Coordinate Graphing**
  - Battleship
- **Logical Reasoning**
  - Clue
  - SoDoKu
  - Stratego
- **Probability**
  - Deal or No Deal?
- **Strategy Games**
  - Othello
  - Mancala
  - Connect 4
  - Chess and Checkers





## Cards and Dice

- War- Use playing cards. Throw down two cards. The person who finds the product (addition and subtraction can work too) of the two cards first keeps the pair.
- Fraction War
  - Remove jokers, face cards, and aces from the deck. Split the deck evenly between two players, and make sure the cards are face down. Both players turn over the top two cards in their piles. The first card is the numerator; it goes above the pencil. The second card is the denominator; it goes below the pencil. The player who has the larger fraction gets to keep all four cards. (If the players turn over equivalent fractions, a "fraction war" ensues. This means a new round of cards is played, and whoever has the larger fraction in the new set of cards gets to keep all eight cards.) The player who acquires all the cards is the winner.
- **Search for Math Games with a deck of cards and you will find many more!**
- Add some dice – and have more fun! Here's a great website with 4 great games you have probably already played in school. Search [Marilyn Burns' Favorite Dice Games](#).



## Real World Activities:

- **Take a Vacation!**
  - Before you take off on that family trip, help your parents and get in on the planning! Here are a few examples of where math can be used when taking that family trip:
    - What's your car's fuel efficiency? Add to find out the total cost to fill up the tank throughout your trip; divide to calculate the miles driven per gallon of gas; multiply to determine the cost of a fill-up based on your expected travel distance... is it time to purchase a hybrid vehicle?
    - How fast did you get there? Use the car's trip odometer to find out how many miles you've driven, and determine your average speed.
    - Calculate the Change: When you stop somewhere to buy something, like a drink, give the cash to your child, and ask him/her how much change he/she should expect back. When he/she gets the change, ask him/her to count to make sure it is right.
    - Count Cars by Colors or Types: along the road, ask kids to count the cars they see, they can even keep track of cars by color or by type, such as trucks, sedan, SUV. If kids are up to it, you can ask them to make a chart of it, and compare to see which color/type of cars are seen the most.





- Magic Number of the Day: at the beginning of each day, pick a magic number of the day, then everyone will look for signs with that magic number and call out. The person finds the most magic numbers win for the day. You can decide on a prize each day, like a sticker, a special treat at night.
- Telling Time: Before you start the trip, either by car or by airplane, watch your clock or watch and learn the time. Then tell kids how long it is going to take, and ask them to calculate the time you may arrive the destination. For younger kids, you must be careful to tell them it is an estimate, and explain the meaning of estimation to them, so they are not going to keep asking if the estimated time is up but you are still not there yet.

- **Gardening**

- How big is that garden? How much fencing is needed to keep out the rabbits? How much fertilizer do you need to keep the garden (or yard) growing?
- How much mulch do you need to order if you want to put it down 3" thick in your flower beds?
- What is the weight of that prize-winning tomato or pumpkin? How many peppers are on the pepper plant? If you need to keep your bean plants 3 inches apart, how many plants will grow on a 12 foot row? How many seeds should you plant?
- Go to the supermarket or farmer's market and find out the cost of fresh vegetables you can grow at home. How much money will you save if you grow it yourself?

- **Sports**

- Take in a summer baseball game – either at the ballpark or on TV. Baseball is a natural place to see math in action – from a pitcher's ERA to a hitter's on-base percentage. Record the events of the game using a scorecard. To find out all about how to keep score, go to Patrick McGovern's fantastic website: [The Baseball Scorecard](#). Then, [calculate some statistics](#) about your favorite players! If you really like baseball, run your own team! Check out Fantasy Baseball and Math! (You can also play fantasy football and soccer, too!)



- **Shopping**

- Estimate the total bill based on prices of what you are purchasing.
- How much does that bunch of bananas weigh? How much will it cost?
- What is the unit price of your favorite box of cereal? What is the unit of measurement, and how much is the total cost of that box?

- **Cooking**

- Measure all of the ingredients (especially the liquids in the glass measuring cups).
- Challenge yourself to double the recipe or cut the recipe in half – fractions are everywhere!



- **Back to School**

- You've gotten that list of school supplies! How much will that cost! Use online sites like Amazon, Target, Walmart, etc. to calculate the cost. Are there any sales going on? How much will it save?
- New shoes? At what cost? What are the best deals? Have any coupons?



## Suggested Books

Title	Author	Title	Author
<i>The Phantom Tollbooth</i>	Juster, Norton	<i>Ten Times Better</i>	Richard Michelson
<i>Math Curse</i>	Scieszka, Jon	<i>A Remainder of One</i>	Elinor J. Pinczes
<i>G Is for Googol: A Math Alphabet Book</i>	Schwartz, David M.	<i>One Hundred Hungry Ants</i>	Elinor J. Pinczes
<i>Brown Paper School Book: Math for Smarty Pants</i>	Burns, Marilyn	<i>The King's Chess Board</i>	David Birch
<i>This Book Is about Time</i>	Burns, Marilyn	<i>Counting on Frank</i>	Rod Clement
<i>Math for Kids and Other People, Too!</i>	Pappas, Theoni	<i>Two Ways to Count to Ten: A Liberian Folktale</i>	Ruby Dee
<i>Janice Van Cleave's Math for Every Kid: Easy Activities That Make Learning Math Fun</i> and <i>Janice Van Cleave's Geometry for Every Kid: Easy Activities That Make Learning Geometry Fun</i>	Van Cleave, Janice Pratt	<i>Bean Thirteen</i>	Matthew McElligot
		<i>Divide and Ride</i>	Stuart Murphy
		<i>The Great Divide</i>	Dayle Ann Dodds