

# 2018 Summer Math Assignment

Dear Parents:

Through the years many parents have asked what can be done over the summer to maintain skills and develop mathematical thinking. This summer, we will be using a calendar to help your child retain his/her skills and to provide valuable practice over the summer. You should feel free to discuss the work with your child. Math discussions are an important way for students to remember and retain concepts. Students may enjoy working with peers or parents as they practice. Again, this calendar is simply an opportunity for your child to maintain skills.

A few things to note:

- Our goal is to have students experience doing math over the summer.
- Teachers hope that everyone attempts the calendar.
- Calendars will not be graded.
- There is no penalty for not doing the calendar.
- Students may get help from sibling, parent, etc.
- If a student doesn't know how to do a certain problem, it's OK to skip it and move on to another problem.
- It is OK to use extra paper if more space is needed to work out the problems.

## **Incoming 7<sup>th</sup> & 8<sup>th</sup> Graders:**

**Would you rather do your summer work on the computer?  
Work on Khan Academy!**

In the middle school we use a web-based program called Khan Academy to help students with math problems. All of our current Winston middle school students are familiar with the program. Students can do either the calendar problems, the recommendations from Kahn Academy or both.

### **Recommended Khan Academy by class:**

- **7<sup>th</sup> Grade:** Arithmetic, Basic Geometry, 6<sup>th</sup> Grade, or 5<sup>th</sup> Grade Missions, 7<sup>th</sup> Grade Mission Foundations (get ready for next year!)
- **8<sup>th</sup> Grade:** Pre-algebra, Arithmetic, Basic Geometry, 7<sup>th</sup> Grade, or 6<sup>th</sup> Grade Missions, 8<sup>th</sup> Grade Mission Foundations (get ready for next year!)

**See the next page for some ideas of activities you can do every day with your child!**

# 2018 Summer Math Assignment

## Sharing Math in Everyday Life

- **Budget:** Share the budget (household, food, clothing, phone, vacation, etc.) with your child.
- **Banking:** Explain and share interest rates with your child.
- **Grocery Shopping**
  - Have your child estimate the total bill.
  - Share any money-saving techniques with your child (coupons, percent discounts, etc.).
  - Have your child compare unit prices to find the better deal.
- **Purchasing Gasoline:** Have your child predict the cost of gasoline and how far you can travel on one full tank based on your car's mileage.
- **Going on Vacation**
  - **Car:** Before the vacation, ask your child to predict how long the drive will take based on an average speed of 60 miles per hour (no more "are we there yet!").
  - **Airplane, Bus, Train:** Have your student practice elapsed time (time of arrival versus time of departure).
  - **Going out to Eat:** Have your child help figure out the tip.
- **Baking:** Have your child follow a recipe (dividing a recipe in half practices fraction operations).
- **Construction Project:** Have your child help you plan and measure prior to construction.
- **Sports:** Share sport statistics with our child (shooting percentages, golf scores, baseball averages, etc.)

Thank you for your support. We are looking forward to an exciting and enriching year with your child.

Sincerely,

The Winston Middle School Math Teachers

# July 2018 Entering Eighth Grade Mathematics Calendar

| Sunday | Monday   | Tuesday  | Wednesday  | Thursday   | Friday   | Saturday |
|--------|--|--|--|--|--|----------|
|        | There are three choices of jellybeans: grape, cherry and orange. If the probability of getting a grape is $\frac{3}{10}$ and the probability of getting cherry is $\frac{1}{5}$ , what is the probability of getting orange? | Twice a number $(n)$ minus nine is ninety-five. Find the number $(n)$ .  | 33.3% is the answer. What could the question possibly be? Challenge yourself to think of more questions.   | A menu has these options for sandwiches: 3 types of bread, 4 meat choices, 5 topping choices. How many possible sandwiches can be made? Can you create a different menu with the same outcome? | Solve:<br>$45 + (-9) =$<br>$(-105) + (-15) =$  |          |
|        | Look up a math topic and read about the history. Who discovered it? How was it used? Ex. pi, gallons, metric....   | Joe has an 80:1 scale-drawing of the floor plan of his house. On the floor plan, the dimensions of his rectangular living room are 1 7/8 inches by 2 1/2 inches. What is the area of living room in square feet? | Write an expression for the sequence of operations. Add 3 to X, subtract the result from 1, then double what you have.                           | Visit the website <a href="http://nlvm.usu.edu/en/nav/category_q_3_t_2.html">http://nlvm.usu.edu/en/nav/category_q_3_t_2.html</a> Challenge yourself with fun activities! List them.           | If the product of 6 integers is negative, at most how many of the integers can be negative?                    |          |
|        | Games Unlimited buys video games for \$10. The store increases the price 300%. What is the price of the video game?  | Which is a better price? Why?<br>a. 15oz. for \$1.79<br>b. 12 oz. for \$1.49   | Using a grocery store receipt, figure what percentage of the bill was spent on vegetables, meat, drinks, junk food ...                           | Can a triangle have more than one obtuse angle? Will three sides of any length create a triangle?  | Describe situations in which opposite quantities combine to make 0.  |          |
|        | The pages of a book are numbered consecutively from 1 to 275. How many times is the digit 8 used in numbering the pages?   | Add: $2 + (-3) =$<br>$(-2) + (-3) =$<br>$(-2) + 3 =$   | A circle has a circumference of 28π centimeters (cm). What is the area, in cm, of this circle? Show all work necessary to justify your response. | Mia's cell phone plan: \$15 a month plus free texts plus \$0.20 per minute of call time. Mia made 30 minutes of calls this month, and 110 texts. How much does she have to pay?                | In the following equation, <b>a</b> and <b>b</b> are both integers, find their value:<br>$a(3x - 8) = b - 18x$ |          |

# August 2018 Entering Eighth Grade Mathematics Calendar

| Sunday  | Monday  | Tuesday   | Wednesday   | Thursday   | Friday   | Saturday |
|---|---|---|---|--|--|----------|
|   | Two adjacent angles are complementary. True or false?   | Make a paper airplane and fly it several times. Find the mean, median, and mode of the distance your plane can fly.   | May 1 <sup>st</sup> Jay's mom gives him 1 cent. Each day, she pays double the amount she paid the day before. How much money did Mike earn in total by May 15?  | Choose a favorite professional athlete and research his/her annual salary. How much does s/he earn in a month? A day?                                  | Choose an activity at <b>Math Illuminations</b><br><a href="http://illuminations.nctm.org">http://illuminations.nctm.org</a><br>Record what you did. |          |
| Using a receipt, find the mean, median, and mode of the prices of the items on the receipt from a store (grocery, clothing ...)                           | Solve:<br>$3w + 2 = 20$<br>Can you write a real world problem that this equation represents?    | Joe has a bag containing 8 red sweets, 9 yellow ones and 10 green. He takes out a sweet and eats it, then, he takes out a second sweet. What is the probability that both the sweets are red? | Visit the website:<br><a href="http://nrich.maths.org">Nrich.maths.org</a><br>Play a game.  | Play a strategy game. Ex. Monopoly, Parcheesi, Mancala, Connect Four ...<br>What strategy did you use?   |  |          |
| Look up a famous math person and read about him/her. What did s/he discovered? How was it used? Ex. Fibonacci, Pythagoras ...                             | Play <b>Sudoku</b> from the newspaper or online.<br>How did logic help you to solve the puzzle? | Visit the website <b>Figure this</b> and look for a real life math challenge.<br><a href="http://figurethis.nctm.org/">http://figurethis.nctm.org/</a>  | George's weekly pay rate is \$455 per week. He receives a 20% raise. What's his new weekly wage rate?   | $m\angle A = 13^\circ$ and $m\angle B = 77^\circ$<br>Are the angles complementary?   |  |          |
| Visit the website:<br><a href="http://nrich.maths.org/5864">http://nrich.maths.org/5864</a><br>and play Connect Three with positive & negative integers.. | Calculate:<br>$7 \times 8 =$<br>$(-7) \times 8 =$<br>$(-7) \times (-8) =$                       | Find the area of a circle if the diameter is 20 feet.   | Dave buys 2 pineapples and some bananas. One pineapple is \$2.99. Bananas are \$0.67 per lb. He wants to spend less than \$10.00. Write an inequality that represents the number of pounds of bananas, <b>b</b> , he can buy. | Dan's salary is \$70 less than Sam's, whose weekly salary is \$50 more than Jen's. If Jen earns \$280 per week, how much money does Dan earn per week? |  |          |