



# Clover School District Summer Math Learning Packet



*Students entering Grade 6*

These summer math activities will enable your child to review math concepts and reinforce skills learned this year. Just a few minutes each day spent “thinking and talking math” will help reinforce the math that has been learned and begin to bridge the foundation for extending to the concepts that will be developed next year. The goal is for your child to have fun thinking and working collaboratively to communicate mathematical ideas. While your child is working, ask him how the solution was found and why a particular strategy was chosen.

## **The math practice in this summer packet addresses 3 critical areas in grade 5:**

1. developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions)
2. extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations
3. developing understanding of volume.

The packet consists of 2 calendar pages, one for June and one for July. There are problems included for each day of the week, excluding weekends. Literature, APPs and websites are also recommended to explore mathematics in new ways. We encourage your child to complete at least 15 math days each month. We hope your child will spend at least 10 minutes a day, 4 to 5 times a week, practicing math. Create a goal with your child to help him stay strong in math over the summer. For example, my child will aim to complete at least 250 minutes of math practice over the course of the summer and keep track of his learning in a math journal.

**If the activities suggested do not seem to “fit your child” or you have your own websites/literature/math practice you would like to do, then feel free to substitute your own activities that better suit your child’s needs or learning style. Examples: practice multiplication facts using flashcards, count money, etc.**

Student mathematicians - keep your mathematics skills sharp and have a safe and enjoyable summer. ☺





# Grade 6 Students Summer Math Ideas

## Math Tools You Will Need:

Notebook for math journal Pencil Deck of cards
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## 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 August, share your Math Journal with your sixth grade teacher.

## Each journal entry should:

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

## Here is an example of a “Great” journal entry:

June 1, 2019 Today I looked at the weather section of the newspaper and recorded the predicted high temperature for the next 5 days: 82, 88, 90, 76, 81. I rearranged the data from the least to greatest number, then found 82 to be the middle value, which is the median temperature.
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## Worksheets to Practice Math:

<http://www.gregtangmath.com/resources>  
<http://www.commoncoresheets.com/>

## Math Books to Read:

A Gebra Named Al by Windy Isdell  
Math Curse by Jon Scieszka  
Chasing Vermeer by Blue Balliett  
Sir Cumference & the Dragon of Pi by Cindy Neuschwander  
Sir Cumference & the First Roundtable by Cindy Neuschwander  
Sir Cumference & the Great Knight of Angleland by Cindy Neuschwander  
Sir Cumference & the Sword in the Cone by Cindy Neuschwander  
Number Devil: A Mathematical Adventure by Hans Magnus Enzensberger  
Guinness Book of Records by Time Inc.  
Mathematicians are People Too by Luetta Reimer & Wilbert Reimer

## Websites:

<http://www.aplusmath.com/>  
<http://www.gregtangmath.com/>  
<http://www.playkidsgames.com/>  
<http://www.figurethis.org./index.html>  
<http://xtramath.org/>  
<http://www.ixl.com/>  
<http://nrich.maths.org/frontpage>  
<http://learnzillion.com>  
<http://www.khanacademy.org/>  
<http://mathforum.org/index.html>  
<http://www.thinkingblocks.com/>  
<http://mathplayground.com/>  
<http://illuminations.nctm.org/Search.aspx?view=search&gr=6-8>  
<https://www.sumdog.com>  
<https://mathfacts.com>  
<https://www.desmos.com>  
<http://www.knowledgeadventure.com/subject/math-games/>  
<http://www.thirteen.org/get-the-math/>  
[www.openmiddle.com](http://www.openmiddle.com)  
[www.illustrativemathematics.org](http://www.illustrativemathematics.org)  
<http://solveme.edc.org/>

## APPS:

Grades 6-8	All Grades
<ul style="list-style-type: none"> <li>• Everyday Mathematics, Beat the Computer, Multiplication</li> <li>• Everyday Mathematics, Divisibility Dash</li> <li>• Everyday Mathematics, Equivalent Fractions</li> <li>• Fill the Cup</li> <li>• Pizza Fractions 1</li> <li>• Operation Math</li> <li>• Tony's Fraction's Pizza Shop</li> <li>• Pearl Diver HD</li> <li>• Lobster Diver HD</li> <li>• Factor Samurai – multiplication and division</li> <li>• Ninja Chicken</li> <li>• Fraction App by tap to Learn</li> <li>• Dare to Share Fairly</li> <li>• Long Division Touch</li> <li>• Math Ninja HD</li> <li>• Quick Math</li> <li>• Wuzzit Trouble</li> <li>• Sushi Monster</li> <li>• Deep Sea Duel</li> <li>• Super 7</li> <li>• Pizza shop and slide 1000</li> <li>• Chicken coop fractions</li> <li>• Math vs zombies</li> </ul>	<ul style="list-style-type: none"> <li>• KENKEN</li> <li>• Kakooma</li> <li>• Quick Math – Arithmetic &amp; Times Tables</li> <li>• Pick-a-Path</li> <li>• Sumdog</li> <li>• Conundra Math</li> <li>• Thinking Blocks</li> <li>• Fast Facts Addition, Subtraction</li> <li>• Fast Facts Multiplication, Division</li> <li>• Learn Zillion</li> <li>• Khan Academy</li> <li>• Symmetry shuffle</li> <li>• Math matrix</li> <li>• Ratio rumble</li> <li>• Math doodles</li> <li>• Flash to Pass</li> <li>• Slice It!</li> <li>• 2048</li> <li>• Mathmateer</li> <li>• Buzzmath</li> </ul>

# June 2019 Entering Sixth Grade Mathematics Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>We encourage your child to</p> <ul style="list-style-type: none"> <li>complete at least 15 math days each month,</li> <li>spend at least 10 minutes a day, 4 to 5 times a week, practicing math,</li> <li>use a math journal to record his work, and</li> <li>create a goal to help him stay strong in math over the summer.</li> </ul>						1
2	3 Express the number 50 in at least 5 different ways. Use all 4 operations and include fractions and decimals.	4 Write an expression for: <i>Add 2 and 4 and multiply the sum by 3. Next, add 5 to that product and double the result.</i>	5 Try a new activity at <a href="http://www.grengmath.com/">http://www.grengmath.com/</a> for at least 10 minutes.  Challenge yourself. What did you chose to do?	6 On Saturday 3/4 of a 5th grade class went to see a new movie. If 1/2 of the class went to the afternoon session, what fraction of the class went to the evening session?	7 Count cricket chirps for 15 seconds. Add 39. This will give you the °F temperature outside. Try it on 3 different days. Does it work?	8
9	10 Choose a favorite professional athlete and research his/her annual salary. How much does he/she earn in a month? A day?	11 A rectangle is twice as long as it is wide. Its width is $5\frac{1}{2}$ cm. Find the area of the rectangle.	12 The sum of two mixed numbers with unlike denominators is $5\frac{3}{5}$ . What might the two mixed numbers be? Show as many different solutions as you can.	13 A California Condor has a 114 inch wingspan. How many feet is that?	14 You have 2 pizzas to share equally with 3 people. How much pizza will each person get?	15
16	17 Monday through Friday a baker uses $1\frac{1}{4}$ sacks of flour each day when baking cakes. Will the baker use more than or less than 5 sacks of flour from Monday through Friday? Explain your thinking.	18 Place parentheses in the following equation to make it true. $6 \times 6 \div 6 \times 6 - 6 = 0$	19 Deal 3 cards to make a 3-digit number. Even numbers are whole numbers. Odd numbers are decimal numbers. Repeat this. Add the 2 numbers. Turn over 3 new cards per turn. Continue to add the number to your last score. Play the game to reach 300.	20 Tom built a backyard pen for his new puppy. The length of the pen was $6\frac{1}{4}$ meters and the width was 4 meters. What is the area of the pen?	21 Multiply two fractions together to get the number 1. What do you notice?	22
23	24 Write a story for this problem $2 \div \frac{1}{3}$ .	25 Can you use $\frac{1}{2} \times \frac{1}{4}$ to solve the problem: There is $\frac{1}{2}$ of a pizza left. If Jamie eats $\frac{1}{4}$ of the remaining pizza, what fraction of the original pizza will he have eaten? Explain.	26 With a partner, place 5 cards face up. Turn a 6th card, to be a Target Card. Each player uses the cards to make the Target Card number. All 5 cards must be used only once. Use +, -, , x, and/or ÷.	27 Use four 4's to create problems that will equal 1-12. Remember to use the correct order of operations to solve your problems: Parentheses, Exponents, Multiply or Divide, Add or Subtract.	28 286,489 is an odd number. How many times greater is the 8 in the ten thousands place than the 8 in the tens place? Explain your thinking.	29
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# July 2019 Entering Sixth Grade Mathematics Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p><b>We encourage your child to</b></p> <ul style="list-style-type: none"> <li>• complete at least 15 math days each month,</li> <li>• spend at least 10 minutes a day, 4 to 5 times a week, practicing math,</li> <li>• use a math journal to record his work, and</li> <li>• create a goal to help him stay strong in math over the summer.</li> </ul>						
	<p>1 Is a 3 gallon pitcher large enough to hold 25 pints of juice? Explain.</p>	<p>2 Play <b>Sudoku</b> from the newspaper or an electronic device.</p> <p>How did logic help you to solve the puzzle?</p>	<p>3 How many blades of grass are in a square yard of your backyard? Use logic, measurement, and problem solving strategies to find the answer.</p>	<p>4 Read a book from the suggested "Math Books to Read".</p> <p>What new math did you discover?</p>	<p>5 Write a word problem for the equation below. <math>1/2 \times 2/3 = X</math></p> <p>Solve it!</p>	6
7	<p>8 There are 3 pizzas. Each child will get 1/4 of a pizza. How many children will get pizza?</p>	<p>9 Find the sum and difference between two decimals.</p> <p>Compare the two decimals using &gt;, =, and &lt; symbols.</p>	<p>10 Visit the website "<b>Figure this!</b>" and look for a real life math challenge.</p> <p><a href="http://www.figurethis.org/index.html">www.figurethis.org/index.html</a></p>	<p>11 Find a fraction or decimal in the newspaper. What did it relate to?</p>	<p>12 If you spend \$100.00 a day, how many days will it take to spend a million dollars? How many years is that? What would you buy?</p>	13
14	<p>15 Spend at least 10 minutes having fun with the Thinking Blocks APP or website.</p> <p><a href="http://www.thinkingblocks.com">www.thinkingblocks.com</a></p>	<p>16 I am a number less than 50. When divided by 5, my remainder is 4. Who am I? Is there more than 1 correct answer?</p>	<p>17 Evaluate the following numerical expression. <math>2 \times (5 + 3 \times 2 + 4)</math></p> <p>Can the parentheses in this expression be removed without changing the value of the expression?</p>	<p>18 Jen is 12. Amy is 13. In 25 years, what will be the product of their ages?</p>	<p>19 Leo &amp; Mia are comparing the product of <math>60 \times 225</math> to the product of <math>30 \times 225</math>. Mia says she can compare these products without multiplying the numbers. Explain how she might do this.</p>	20
21	<p>22 A box 2 centimeters high, 3 centimeters wide, and 5 centimeters long can hold 40 grams of clay. A second box has twice the height, three times the width, and the same length as the first box. How many grams of clay can it hold?</p>	<p>23 Find the sum of the digits of your phone number. What numbers is it divisible by?</p>	<p>24 If you buy 3 books at \$3.95 each, how much change would you get from \$20.00?</p>	<p>25 I am an even, 3 digit palindrome. (ex: 464) The product of the digits is 8. What number am I?</p>	<p>26 Measure different objects in your house to the nearest <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, and <math>\frac{1}{8}</math> of an inch then display your data on a line plot.</p>	27
28	<p>29 .75 is the answer. What could the question possibly be? Challenge yourself to think of more questions.</p>	<p>30 Evan bought 6 roses for his mother. <math>\frac{2}{3}</math> of them were red. How many red roses were there? Prove your answer.</p>	<p>31 <b>YOU DID IT!</b> Please bring your journal to your sixth grade teacher on the first day of school!</p>			

**Grade 6 Answer Key**  
**Answers will vary for many of the activities depending on the choices students make.**  
**Below are the answers for activities with specific solutions.**

**June 3**

Example:  $(5 \times 5) + (50 - 25)$

Each example does not need to include all of the operations, fractions and decimals. Include fractions and decimals in some of your examples.

**June 4**

One solution:  $(5+3(2+4))+(5+3(2+4))$ .

**June 6**

$\frac{1}{4}$  of the class went to the evening session.

**June 11**

The area of the rectangle would be  $5.5\text{cm} \times 11\text{cm} = 60.5 \text{ cm squared}$ .

**June 12**

One solution:  $2 \frac{2}{10} + 3 \frac{2}{5} = 5 \frac{3}{5}$

**June 13**

The wingspan of the California condor is 9.5 feet or  $9 \frac{1}{2}$  feet.

**June 14**

Each person will have  $\frac{2}{3}$  of a pizza.

**June 17**

The baker will use more than 1 sack of flour.  $1 \text{ bag divided by } \frac{1}{4} \text{ bag per day} = 4 \text{ days}$ .

**June 18**

$6 \times (6 \div 6) \times (6 - 6) = 0$

**June 19**

Example for first step: Player 1 draws a 9, 4, and 3 and writes it on her paper as 4.93 or 4.39.

Example for second step: Player 1 draws a 6, 2, and 7. She writes it on her paper as 62.7 or 26.7

Example for third step: Player 1 adds  $4.93 + 62.70 = 67.63$

Continue to add the number they make to their last score. Play until one player reaches 300.

**June 20**

The area of the puppy's pen would be  $6\frac{1}{4} \text{ meters} \times 4 \text{ meters} = 25 \text{ meters squared}$ .

**June 21**

Example:  $\frac{2}{3} \times \frac{3}{2} = 1$

**June 24**

Example: Janet had a rope that was 2 meters long. She cut it into pieces that were  $\frac{1}{3}$  of a meter long. How many pieces of rope did she cut?



Janet was able to cut the 2 meter rope into 6 pieces of rope. To solve this problem, I represented the 2 meter rope using two larger bars. The smaller bars represented  $\frac{1}{3}$  of the original sized bar. I needed 6 smaller bars to match the length of two larger bars.  
 $2 \div \frac{1}{3} = 6$  or  $6 \times \frac{1}{3} = 2$

**June 25**

Yes.  $\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$ . Jamie ate  $\frac{1}{8}$  of the original pizza.

**June 26**

Parentheses may be used to group calculations and to indicate the order in which calculations are to be performed. Players must write out their solutions.

Sample hand: Cards: 1, 3, 7, 1, 8

Target Card: 1

One possible solution:  $[(3 - 1) + 7] - (8 \div 1) = 1$

The first player to reach a solution says "Target!" and then explains his/her solution. If the solution is correct, the player receives 1 point for that round. If the player cannot explain the solution or the solution is not correct, the player receives a -1 for that round. After 10 rounds the winner is the player with the most points.

**June 27**

Order of operations: The rules of which calculation comes first in an expression. Do everything inside parentheses first, ( ). Then do exponents, like  $x^2$ . Then do multiplication and division from left to right. Lastly do addition and subtraction from left to right.



Use the word PEMDAS or the sentence "Please Excuse My Dear Aunt Sally" to remember the order of operations.

Examples:

$1 = (4 \times 4) \div (4 \times 4)$

$1 = 44 \div 44$

**June 28**

The 8 in the ten thousands place is a thousand times greater than the 8 in the tens place.  $80 \times 1,000 = 80,000$ .

**July 1**

There are 8 pints in a gallon. So in 3 gallons there are 24 pints so the pitcher cannot hold 25 pints.

**July 5**

Suzie is baking some cookies. The recipe calls for  $\frac{2}{3}$  cup of sugar. She would like to cut the recipe in half. How much sugar will she need?

**July 8**

Twelve children will get pizza.

**July 9**

Example:

$$1.2 - 0.7 = 0.5$$

$$1.2 + 0.7 = 1.9$$

$$1.9 > 0.5$$

**July 12**

It would take 10,000 days to spend 1,000,000 dollars. It would take over 27 years.

**July 16**

Answers 49, 44, 39, 34, 29, 24, 19, 14, and 9.

**July 17**

Before multiplying the first 2, complete the operations inside the parentheses using order of operations:  $2 \times (5 + 3 \times 2 + 4) = 2 \times (5 + 6 + 4) = 2 \times 15 = 30$ . You cannot remove the parentheses and get the same value.

**July 18**

The product of their ages in 25 years will be 1,406 ( $37 \times 38$ ).

**July 19**

Since 60 is twice 30, the product  $60 \times 225$  is twice the product  $30 \times 225$ . We can write this as an equation:  $60 \times 225 = (2 \times 30) \times 225 = 2 \times (30 \times 225)$ .

**July 22**

The first box is 2 centimeters high, 3 centimeters wide, and 5 centimeters long so it has volume  $2\text{cm} \times 3\text{cm} \times 5\text{cm} = 30$  cubic centimeters and it holds 40 grams of clay. The second box is 4 centimeters high, 9 centimeters wide, and 5 centimeters long so its volume is  $4\text{cm} \times 9\text{cm} \times 5\text{cm} = 180$  cubic centimeters. Since the volume of the second box is  $180 \div 30 = 6$  times bigger, it can hold 6 times as much clay. So the second box can hold  $6 \times 40 = 240$

grams of clay.

**July 24**

You would receive \$8.15 in change from \$20.00.

**July 25**

222

**July 29**

I went to the store and bought a lollipop for 25 cents and gave the clerk a dollar. My change would be \$0.75.

**July 30**

Examples:

- ❖ Using a visual, a student divides the 6 roses into 3 groups and counts how many are in 2 of the 3 groups.



- ❖ A student can use an equation to solve.

$$\frac{2}{3} \times 6 = \frac{12}{3} = 4 \text{ red roses}$$