



Lower School Summer Math

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PreKindergarten and Kindergarten



Children are natural-born mathematicians and summer provides time for activities that build spatial awareness and pattern recognition. Whether noticing and creating patterns or sorting like objects, exploration and discovery, children develop number sense.

[Ideas for Summer Math](#)

First Grade

Students in first grade continue to build number sense and math readiness skills. Summer is a great time for children to practice 1:1 correspondence when counting objects, matching quantities with numerals, combining/separating groups of like objects, and interpreting data in graphs.

[Ideas for Summer Math](#)

Second Grade

Students should continue practicing addition and subtraction facts in order to ensure/maintain mastery and fluency.

RETURNING STUDENTS are to complete either the even or odd questions within each unit of the math review workbook provided by their first grade teachers. **These workbooks are to be returned to their new homeroom teachers on the first day of school.**

This math review workbook will be mailed to **NEW STUDENTS**. Either the even or odd questions within each unit of the math workbooks are to be completed. These workbooks are to be returned to second grade homeroom teachers **on the first day of school.**

For information regarding summer enrichment, visit [Highlander Summer](#).

Third Grade

Students should continue practicing multiplication and division facts in order to ensure/maintain mastery and fluency.

RETURNING STUDENTS are to complete either the even or odd questions within each unit of the math review workbook provided by their second grade teachers. **These workbooks are to be returned to their new homeroom teachers on the first day of school.**

This math review workbook will be mailed to **NEW STUDENTS**. Either the even or odd questions within each unit of the math workbooks are to be completed. These workbooks are to be returned to third grade homeroom teachers **on the first day of school.**

For information regarding summer enrichment, visit [Highlander Summer](#).

Fourth Grade - Returning Students

Returning Students in **Math 4** are to continue with **Freckle**, an online math practice program, in order to retain current understandings and maximize gains. Login information will not change over the summer. *Between June 8 and July 22, rising 4th grade students are to complete their work in Freckle.*

[Freckle Access Directions](#)

Students placed in **Accelerated Math 4** are expected to complete the Canvas course of skills, concepts, and practice problems that will be skipped due to the accelerated placement. An invitation with expectations and summer contact information will be emailed to families. The completion of this Canvas course supersedes Freckle.

For information regarding summer enrichment, visit [Highlander Summer](#).

Fourth Grade - New Students

Rising 4th graders new to Lake Highland who will be in Math 4 are to work in **Freckle**, an online math practice program, in order to retain current understandings and maximize gains. Login information will be emailed.

Between June 8 and July 22, rising 4th grade students are to complete their work in Freckle.

[Freckle Access Directions](#)

Students placed in **Accelerated Math 4** will receive an invitation to a Canvas course designed to provide instruction and practice in the skills and concepts skipped due to the acceleration. An invitation with expectations and summer contact information will be emailed to families.

For information regarding summer enrichment, visit [Highlander Summer](#).

Fifth Grade - Returning Students

Returning Students in **Math 5** are to continue with Freckle, the online math practice program, in order to retain current understandings and maximize gains. Login information will not change over the summer. *Between June 8 and July 22, rising 5th grade students are to complete their work in Freckle.*

[Freckle Access Directions](#)

Students in **Accelerated Math 5** who were not in Accelerated Math 4 are expected to also complete a Canvas course of skills, concepts, and practice problems that will be skipped due to the accelerated placement. An invitation with expectations and summer contact information will be emailed to families.

The completion of this Canvas course supersedes Freckle.

For information regarding summer enrichment, visit [Highlander Summer](#).

Fifth Grade - New Students

Rising 5th graders new to Lake Highland who will be in Math 5 are to work in **Freckle**, an online math practice program, in order to retain current understandings and maximize gains. Login information will be emailed.

Between June 8 and July 22, rising 5th grade students are to complete their work in Freckle.

[Freckle Access Directions](#)

Students placed in **Accelerated Math 5** will receive an invitation to a Canvas course designed to provide instruction and practice in the skills and concepts skipped due to the acceleration. This invitation will include expectations and summer contact information.

For information regarding summer enrichment, visit [Highlander Summer](#).

Sixth Grade - Returning Students

Returning Students in Math 6 are to work in Math XL, an online math practice program, in order to retain current understandings and maximize gains, Login information will not change over the summer. ***Between June 8 and July 22, rising 6th grade students are to complete their work in Math XL.***

MathXL Access Directions

ALTERNATE SUMMER MATH ASSIGNMENT: Rising 6th graders may also opt to explore a math topic in depth or apply math skills and strategies to an authentic (real world) scenario. This option will satisfy two (2) of the assignments required for Math XL. Students may select one of the items from the following slides or propose an original idea. Proposals must be received and approved by June 30 in order to be considered for the summer option.

Students in Accelerated Math 6 who were not in Accelerated Math 5 are expected to complete a Canvas course of skills, concepts, and practice problems that will be skipped due to the accelerated placement. An invitation with expectations and summer contact information will be emailed to families.

The completion of this Canvas course supersedes Math XL.

For information regarding summer enrichment, visit [Highlander Summer](#).

Alternate Assignment - 6th Grade

Connecting concepts to real-life situations or naturally occurring patterns allows students to see beyond theory and appreciate the practicality and necessity of mathematics. Returning 6th graders have the option of replacing two (2) Math XL assignments with one of these activities. Choose from creating number combinations, discovering patterns from Fibonacci or Pascal, or planning a family vacation. The completed activities are due on the first day of school.

If you are interested in taking advantage of this opportunity or have any questions, please contact Dr. Susan Keogh at skeogh@lhps.org.

[Option One: The 1492 Problem - Using Numbers and Symbols Flexibly](#)

[Option Two: Finding Fibonacci](#)

[Option Three: Pascal's Triangle](#)

[Option Four: Plan a Family Vacation](#)

Sixth Grade - New Students

Rising 6th graders new to Lake Highland who will be in Math 6 are to work in **Math XL**, an online math practice program, in order to retain current understandings and maximize gains. Login information will be emailed.

Between June 8 and July 22, rising 6th grade students are to complete their work in Math XL.

[Math XL Access Directions](#)

Students placed in **Accelerated Math 6** will receive an invitation to a Canvas course designed to provide instruction and practice in the skills and concepts skipped due to the acceleration. This invitation will include expectations and summer contact information.

ALTERNATE SUMMER MATH ASSIGNMENT:

Rising 6th graders may also opt to explore a math topic in depth or apply math skills and strategies to an authentic (real world) scenario. This is purely optional. Students may select one of the items from [here](#).

For information regarding summer enrichment, visit [Highlander Summer](#).

Sixth Grade: Alternate Assignment #1

The 1492 Problem - Using Numbers and Symbols Flexibly

Your task is to use only the digits 1, 2, 4, and 9 to write expressions for each value from 1 to 100. For example, $1+4+9+2=16$ or $1 \times 4 \times 9 \times 2=72$. You can use the four basic operations of addition, subtraction, multiplication, and division as well as exponents, square roots, and factorials. What do these terms mean?

An exponent is a superscript-digit stating the number of times its base should be a factor in an expression. For example, $4^2=4 \times 4$ or 16. $3^4=3 \times 3 \times 3 \times 3$ or 81.

Square roots, such as $\sqrt{25}$, equal a factor that, when multiplied by itself, equal the number under the radical. In this example, 25 is under the radical and, since $5 \times 5=25$, the square root of 25 is 5.

Factorial is a specialized multiplication operation in which a number is multiplied by all of the natural numbers less than the original number. For example, $4!=4 \times 3 \times 2 \times 1$ or 24.

Remember to use the proper order of operations. Within an expression, values and operations within parentheses must be simplified first. Exponents follow, then multiplication and division are performed left to right and, finally, addition and subtraction are completed left to right.

[CLICK HERE FOR 1492 PROBLEM TEMPLATE](#)

Adapted from Jo Boaler, et al. *Mindset Mathematics, Grade 5*. John Wiley & Sons, Inc. 2018.

Sixth Grade: Alternate Assignment #2

Finding Fibonacci

The Fibonacci pattern, introduced by Leonardo of Pisa more than 800 years ago, is a well-known number sequence that is often seen in nature. Examples within nature include the spiral of a nautilus shell, the organization of sunflower seeds within the flower's center, and the pattern of a pine cone structure. The numerical sequence begins with 1 and 1 and the following numbers are the sum of the previous two. The sequence begins with 1, 1, 2, 3, 5, 8, and 13 since $1+1=2$, $1+2=3$, $2+3=5$, $3+5=8$, and $5+8=13$. This sequence is never-ending or infinite.

Your first task is to print the attachment and discover the numerical sequence within the sketch. Label the picture to describe how the number pattern is illustrated. On a separate piece of graph paper, extend this spiral at least two more steps.

Next, extend the Fibonacci sequence to include at least twenty sums ($5+8=13$ is considered one sum).

Finally, find at least three examples of the Fibonacci sequence within nature. You may copy these from a book, magazine, or internet source or you may photograph an authentic example that you have discovered. Remember to cite (name) sources that are not your own photographs.

[CLICK HERE FOR EXAMPLES](#)

Sixth Grade: Alternate Assignment #3

Pascal's Triangle

Pascal's triangle is a well-known pattern of numbers organized within the framework of a triangle. The top of the triangle contains one block and the second row is made up of two blocks; each row contains one more block than the previous one above. The blocks are also arranged so that they are centered under the top block. Each number is the sum of the two numbers above it.

Your tasks follow:

- Using the example of Pascal's Triangle attached, complete the blank boxes.
- Other than the sums, what are some other patterns you have discovered?
- Do you see a pattern when you find the sum of each row? If so, describe this pattern.
- Do you see other patterns within the triangle? If so, describe these.
- Change the number in the top block from 1 to a number of your choice. Complete at least 10 rows. Do the patterns that you identified above continue?

[CLICK HERE FOR PASCAL'S TRIANGLE](#)

Adapted from Jo Boaler, et al. *Mindset Mathematics, Grade 5*. John Wiley & Sons, Inc. 2018.

Sixth Grade: Alternate Assignment #4

Plan a Family Vacation

Everyone looks forward to vacation and it is your turn to plan your family's travels. With a budget of \$9000, you are to research and organize a seven-day, six-night vacation outside of Florida. You may begin by selecting two or three possible destinations; your research on travel, food, lodging, and entertainment may determine which destination is feasible. Allowing two (2) days for travel, you will plan an itinerary for the remaining five (5) days.

Your task is to choose your destination and, based on research, record the most accurate costs of the entire trip. These costs include:

- Travel – costs of flight(s), car rentals, gas, any shared rides
- Lodging – include sales, tourist, and city taxes. Are any meals provided at no cost with your accommodations?
- Food – the cost of all meals during your trip (remember taxes and tips).
- Entertainment-this includes the entrance/admission fees for theme parks, museums, or special events.
- Other costs – these may include souvenirs or unplanned venues.

Your final project should include the following Google slides:

- Slide 1: Introduction
 - o Identify your destination and travel dates
 - o Include a map that pinpoints the location of this place
 - o Daily itinerary
- Slide 2: Flight Information
 - o State the airports and airlines
 - o Include the cost for one person as well as for your entire group
- Slide 3: Rental Car Fees
 - o State how the total cost will be calculated (watch for hidden fees)
 - o Include vehicle type (make sure it is large enough for all of your travelers!)
 - o Based on your itinerary, how many miles might you drive and what do you expect to spend on gas?
- Slide 4: Hotel Information
 - o Include a picture and address of the hotel
 - o Are there extra benefits (complimentary breakfast)?
 - o Parking fees, if any
- Slides 5 -9: Daily events
 - o What are the plans for meals? Include sample menus from each restaurant selected. State the budget for each meal.
 - o What sites will you visit and why did you choose these attractions?
 - o What are the entrance/ticket prices for one person as well as the group. Note prices according to age.
 - o What, if any, parking fees will you incur?
- Slide 10: Reflection
 - o What did you learn while planning this trip?

Additional Resources for All Grades

MATH	
ABCYa Math	A website/app that provides educational games and activities. The games on the website are organized into grade levels and categories.
Cool Math 4 Kids	Coolmath4Kids is an amusement park of games, lessons and more, designed to teach math and make it FUN.
KenKen	Math games and puzzles for learning and fun.
Khan Academy Kids	Inspire a lifetime of learning and discovery with our fun educational program for children ages two to seven.
ST Math	Puzzles and activities to develop math minds.
Math Playground	Math games, problem solving, logic games and number puzzles kids love to play.
Boddle Math	A math game that delivers practice and assessment based on students' needs.