



Math Summer Camp

Weekly Schedule, Content, and Reading/Video

Weekly Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-9:50	Arithmetic or Algebra or Trigonometry Calculus or Analysis	Arithmetic or Algebra or Trigonometry Calculus or Analysis	Arithmetic or Algebra or Trigonometry Calculus or Analysis	Arithmetic or Algebra or Trigonometry Calculus or Analysis	Arithmetic or Algebra or Trigonometry Calculus or Analysis
10:00-10:50	Geometry or Topology	Geometry or Topology	Geometry or Topology	Geometry or Topology	Geometry or Topology
11:00-11:50	Probability or Statistics or Financial Math	Probability or Statistics or Financial Math	Probability or Statistics or Financial Math	Probability or Statistics or Financial Math	Probability or Statistics or Financial Math
12:00-12:50	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
1:00-1:50	Number Theory Linear Equation or Differential Equation	Number Theory Linear Equation or Differential Equation	Number Theory Linear Equation or Differential Equation	Number Theory Linear Equation or Differential Equation	Number Theory Linear Equation or Differential Equation
2:00-2:50	Recreational History or Logic or Set or Art or Memorization	Recreational History or Logic or Set or Art or Memorization	Recreational History or Logic or Set or Art or Memorization	Recreational History or Logic or Set or Art or Memorization	Recreational History or Logic or Set or Art or Memorization

Content

Recreational mathematics

From [magic squares](#) to the [Mandelbrot set](#), numbers have been a source of amusement and delight for millions of people throughout the ages. Many important branches of "serious" mathematics have their roots in what was once a mere puzzle and/or game.

History and biography

The history of mathematics is inextricably intertwined with the subject itself. This is perfectly natural: mathematics has an internal organic structure, deriving new theorems from those that have come before. As each new generation of mathematicians builds upon the achievements of our ancestors, the subject itself expands and grows new layers, like an onion.

Arithmetic, Algebra, Trigonometry and Calculus

[Arithmetic](#) is the study of quantity.

Algebra is the study of variable

Trigonometry is the study of the unit circle.

Calculus is the study of change

Math Languages: Set and Logic

A [set](#) can be thought of as a collection of distinct things united by some common feature.

Mathematical logic, also known as **symbolic logic**, was developed when people finally realized that the tools of mathematics can be used to study the structure of logic itself.

Geometry and Topology

[Geometry](#) deals with spatial relationships, using fundamental qualities or [axioms](#).

Topology deals with the properties of a figure that do not change when the figure is continuously deformed.

Applied Mathematics: Differential Equations, Linear Equations and Probability and Statistics:

Differential Equations:

Linear Equations:

Probability: The mathematical theory of **random** phenomena.

Statistics: The science of making effective use of numerical **data** from experiments or from populations of individuals. Statistics includes the collection, analysis of such data, also the presentation of data.

Reading and Video

Math Phobia, Dr. Pavlov Rameau. STEM 2012. PowerPoint.

Probability and God, Dr. Pavlov Rameau. STEM 2013. PowerPoint.

Fractals: The Most Beautiful Objects in Mathematics, STEM 2014.
PowerPoint.

The Math Book, by Clifford A. Pickover. From Pythagoras to the 57th
Dimension, 250 Milestones in the History of Mathematics, 2009.

The Great Math Mystery, Invention or discovery?, PBS. Nova, 2015.