**Math Course Descriptions for Grades 1-8**

**1st Grade-** Course Overview – The Good and the Beautiful Math 1

Math 1 continues to strengthen foundational math skills while gently introducing new concepts through colorful lessons, hands-on activities, and built-in review. Lessons are open-and-go and designed to keep learning engaging with a variety of games, visuals, and real-life applications. Students will learn to confidently add and subtract within 20, explore place value, and begin applying math skills to everyday life through money, time, and measurement activities. Geometry and simple fractions are also introduced in an age-appropriate way.

By the end of this course, students will:

* Add and subtract within 20 with fluency
* Understand and apply place value through 100
* Skip count and recognize number patterns
* Tell time to the hour and half hour
* Identify and count U.S. coins and bills
* Compare and measure length, weight, and capacity
* Recognize and work with 2D and 3D shapes
* Understand basic fractions (halves, fourths)
* Strengthen problem-solving and mental math skills

**Table of Contents – Math 1**

Unit 1: Numbers & Counting

* Numbers to 20
* Comparing numbers (greater than, less than, equal to)
* Counting forward and backward

Unit 2: Addition & Subtraction Within 10

* Simple addition facts
* Subtraction as “taking away”
* Word problems with objects and pictures

Unit 3: Place Value & Number Patterns

* Tens and ones
* Skip counting (2s, 5s, 10s)
* Ordering and comparing numbers

Unit 4: Time & Calendar

* Days, weeks, and months
* Telling time to the hour
* Telling time to the half hour

Unit 5: Money

* Identifying coins and their values
* Counting pennies, nickels, dimes
* Adding small amounts of money

Unit 6: Measurement

* Comparing length, weight, size
* Using rulers and standard units
* Understanding capacity

Unit 7: Geometry & Fractions

* Identifying 2D shapes
* Introduction to 3D shapes
* Understanding halves and fourths

Unit 8: Problem Solving & Review

* Mixed addition and subtraction practice
* Real-life word problems
* Cumulative review with games and activities

**2nd Grade-** Course Overview – The Good and the Beautiful Math 2

Math 2 builds upon the foundation from Math 1, strengthening fluency in addition and subtraction while introducing new skills such as larger numbers, multiplication basics, fractions, measurement, and expanded geometry. Lessons remain short, colorful, and engaging, with hands-on activities, games, and built-in review to ensure mastery without unnecessary busywork.

Students will work with numbers up to 1,000, learn to add and subtract with regrouping, and begin exploring multiplication and division concepts. They will also expand their understanding of time, money, and measurement, and explore new topics in geometry and fractions.

By the end of Math 2, students will:

* Add and subtract within 1,000 (with regrouping)
* Understand multiplication as repeated addition
* Recognize basic division concepts
* Work with place value to the hundreds
* Tell time to five minutes and use a.m./p.m.
* Count, add, and subtract money amounts with coins and bills
* Measure length, weight, and capacity with standard units
* Work with simple fractions (halves, thirds, fourths)
* Identify and compare 2D and 3D shapes
* Apply problem-solving strategies with word problems

**Table of Contents – Math 2**

Unit 1: Numbers & Place Value

* Numbers to 1,000
* Place value (ones, tens, hundreds)
* Comparing and ordering numbers

Unit 2: Addition & Subtraction Mastery

* Addition with regrouping
* Subtraction with regrouping
* Multi-step word problems

Unit 3: Introduction to Multiplication & Division

* Repeated addition and equal groups
* Arrays and simple multiplication facts
* Introduction to division (sharing, grouping)

Unit 4: Time & Calendar

* Reading clocks to five minutes
* a.m. and p.m.
* Days, weeks, months, and elapsed time

Unit 5: Money

* Coins and bills
* Counting mixed coins and dollars
* Making change

Unit 6: Measurement

* Measuring length with rulers (inches, centimeters)
* Weight and capacity
* Comparing units

Unit 7: Fractions

* Halves, thirds, and fourths
* Equal parts of a whole
* Comparing simple fractions

Unit 8: Geometry

* Identifying and classifying 2D shapes
* Exploring 3D shapes
* Symmetry and simple area concepts

Unit 9: Problem Solving & Review

* Mixed operations practice
* Word problems with real-life applications
* Games and cumulative review

**3rd Grade-** Course Overview – The Good and the Beautiful Math 3

Math 3 strengthens fluency with addition, subtraction, and place value while expanding into multiplication and division mastery. Students continue to apply math skills to real-life situations, such as time, money, measurement, and data. Geometry and fractions are explored more deeply, including equivalent fractions, perimeter, and area.

Lessons remain open-and-go, colorful, and engaging, with built-in review, mental math, and games to keep learning fun. By the end of this level, students will be confident working with larger numbers and have a solid foundation for upper elementary math.

By the end of Math 3, students will:

* Add and subtract within 10,000 (with regrouping)
* Master multiplication and division facts
* Multiply and divide larger numbers (1-digit × 2-digit, etc.)
* Understand fractions, including equivalent fractions and comparing fractions
* Tell time to the minute and calculate elapsed time
* Add and subtract money with decimals
* Measure using standard units and work with perimeter and area
* Collect, organize, and interpret data (charts and graphs)
* Identify, classify, and measure geometric shapes and angles
* Strengthen problem-solving, reasoning, and mental math

**Table of Contents – Math 3**

Unit 1: Place Value & Number Sense

* Numbers through 10,000
* Comparing and ordering numbers
* Rounding and estimating

Unit 2: Addition & Subtraction with Larger Numbers

* Multi-digit addition with regrouping
* Multi-digit subtraction with regrouping
* Word problems with multiple steps

Unit 3: Multiplication

* Multiplication facts to 12
* Arrays, groups, and properties of multiplication
* Multi-digit multiplication (1-digit × 2-digit, etc.)

Unit 4: Division

* Division facts to 12
* Division with remainders
* Relationship between multiplication and division

Unit 5: Fractions

* Understanding parts of a whole
* Equivalent fractions
* Comparing and ordering fractions

Unit 6: Time & Money

* Reading clocks to the minute
* Elapsed time
* Counting and adding money
* Working with decimals in money

Unit 7: Measurement & Data

* Measuring length, weight, and capacity
* Perimeter and area
* Interpreting charts and graphs

Unit 8: Geometry

* Identifying and classifying 2D and 3D shapes
* Lines, angles, and symmetry
* Introduction to polygons

Unit 9: Problem Solving & Review

* Mixed operations practice
* Real-world word problems
* Games and cumulative review

**4th Grade-** Course Overview – The Good and the Beautiful Math 4

Math 4 helps students gain confidence with larger numbers, long multiplication and division, and more advanced fractions and decimals. Geometry, measurement, and data analysis are explored at a deeper level, and students strengthen problem-solving skills through multi-step word problems. Lessons remain colorful, interactive, and parent-friendly, with built-in review and mental math to ensure mastery without unnecessary busywork.

By the end of Math 4, students will:

* Multiply multi-digit numbers and divide with larger divisors
* Add, subtract, and compare fractions and mixed numbers
* Understand and apply decimal place value, addition, and subtraction
* Work with factors, multiples, and prime numbers
* Tell time, calculate elapsed time, and convert between units of time
* Solve problems with money and decimals in real-life situations
* Measure perimeter, area, and volume of figures
* Read, create, and interpret charts, tables, and graphs
* Identify and classify geometric figures, angles, and symmetry
* Apply critical thinking to solve complex word problems

**Table of Contents – Math 4**

Unit 1: Place Value & Number Operations

* Place value through the millions
* Comparing and rounding numbers
* Addition and subtraction with larger numbers

Unit 2: Multiplication & Division

* Multiplying multi-digit numbers
* Dividing by 1-digit and 2-digit divisors
* Long division with remainders
* Estimating and checking for reasonableness

Unit 3: Fractions

* Proper, improper fractions, and mixed numbers
* Equivalent fractions
* Comparing and ordering fractions
* Adding and subtracting fractions and mixed numbers

Unit 4: Decimals

* Understanding tenths and hundredths
* Comparing and ordering decimals
* Adding and subtracting decimals
* Decimals and money

Unit 5: Factors & Multiples

* Factors and multiples
* Prime and composite numbers
* Patterns in multiplication and division

Unit 6: Measurement & Data

* Customary and metric units
* Converting between units of measurement
* Perimeter, area, and introduction to volume
* Reading and creating charts and graphs

Unit 7: Time & Money

* Time to the minute and elapsed time
* Converting hours, minutes, and seconds
* Word problems with money and decimals

Unit 8: Geometry

* Lines, rays, and angles
* Classifying triangles and quadrilaterals
* Symmetry and transformations
* Introduction to circles

Unit 9: Problem Solving & Review

* Multi-step word problems
* Mixed operations practice
* Cumulative review with games and applications

**5th Grade-** Course Overview – The Good and the Beautiful Math 5

Math 5 deepens understanding of fractions, decimals, and whole numbers while introducing more complex operations such as long division with multi-digit divisors, operations with fractions and decimals, and early work with percentages. Geometry, measurement, and data analysis are expanded to include more advanced concepts, while problem-solving and critical thinking are emphasized throughout.

Lessons remain open-and-go, engaging, and balanced with review and practice to ensure mastery. Students gain confidence in applying math to real-life scenarios, preparing them for pre-algebra and higher-level math in middle school.

By the end of Math 5, students will:

* Perform long division with multi-digit divisors and large dividends
* Multiply and divide fractions and mixed numbers
* Add, subtract, multiply, and divide decimals
* Understand ratios, proportions, and percentages
* Convert between fractions, decimals, and percentages
* Apply operations with large numbers confidently
* Solve word problems with multiple steps and mixed operations
* Work with measurement, perimeter, area, and volume
* Read, create, and interpret data from charts and graphs
* Classify and measure angles, triangles, quadrilaterals, and circles

**Table of Contents – Math 5**

Unit 1: Whole Numbers & Place Value

* Place value through billions
* Rounding and estimating
* Operations with whole numbers (review and extension)

Unit 2: Multi-Digit Multiplication & Division

* Multiplying larger multi-digit numbers
* Long division with multi-digit divisors
* Word problems involving multi-step operations

Unit 3: Fractions

* Simplifying fractions
* Equivalent fractions and mixed numbers
* Adding and subtracting fractions and mixed numbers
* Multiplying and dividing fractions

Unit 4: Decimals

* Place value through thousandths
* Comparing and rounding decimals
* Adding, subtracting, multiplying, and dividing decimals
* Converting between fractions and decimals

Unit 5: Ratios, Proportions & Percents

* Understanding ratios
* Solving proportions
* Finding percentages of numbers
* Converting between fractions, decimals, and percentages

Unit 6: Measurement & Data

* Customary and metric conversions
* Perimeter, area, and volume
* Measuring angles with a protractor
* Reading and interpreting charts and graphs

Unit 7: Geometry

* Classifying polygons and quadrilaterals
* Properties of triangles
* Circles: radius, diameter, circumference
* Lines of symmetry and transformations

Unit 8: Problem Solving & Review

* Multi-step real-world problems
* Mixed operations with fractions, decimals, and whole numbers
* Cumulative review and enrichment activities

**6th Grade-** Course Overview – The Good and the Beautiful Math 6

Math 6 prepares students for pre-algebra by solidifying their skills with fractions, decimals, percentages, ratios, and proportions while expanding into integers, expressions, and more advanced geometry. Students continue to build strong problem-solving strategies through multi-step word problems and real-life applications.

This level deepens critical thinking and independence in math while keeping lessons approachable and engaging. By the end of Math 6, students will have the confidence and mastery needed to transition smoothly into pre-algebra.

By the end of Math 6, students will:

* Work fluently with all four operations on fractions, decimals, and integers
* Solve multi-step word problems with fractions, decimals, ratios, and percents
* Apply ratios, proportions, and percent to real-world problems (discounts, interest, tax)
* Understand integers and coordinate graphing
* Write, evaluate, and simplify algebraic expressions
* Solve basic one-step equations
* Apply geometry concepts: perimeter, area, surface area, and volume
* Classify and measure angles, triangles, and polygons
* Interpret, create, and analyze data in charts and graphs
* Develop strong number sense, problem-solving skills, and readiness for pre-algebra

**Table of Contents – Math 6**

Unit 1: Whole Numbers & Decimals

* Review of operations with whole numbers
* Place value through the billions and thousandths
* Operations with decimals (add, subtract, multiply, divide)

Unit 2: Fractions

* Simplifying fractions and mixed numbers
* Adding and subtracting fractions and mixed numbers
* Multiplying and dividing fractions
* Applications with multi-step problems

Unit 3: Ratios, Proportions & Percents

* Understanding ratios and rates
* Solving proportions
* Converting between fractions, decimals, and percentages
* Solving percent problems (discounts, tax, interest, tips)

Unit 4: Integers & Number Sense

* Understanding positive and negative numbers
* Adding, subtracting, multiplying, and dividing integers
* Graphing integers on a number line and coordinate plane

Unit 5: Expressions & Equations

* Understanding variables and algebraic expressions
* Writing and simplifying expressions
* Solving one-step equations (addition, subtraction, multiplication, division)
* Word problems with simple algebra

Unit 6: Geometry

* Lines, angles, and triangles
* Classifying polygons and quadrilaterals
* Circles: radius, diameter, circumference, area
* Surface area and volume of prisms and pyramids

Unit 7: Measurement & Data

* Converting between metric and customary units
* Perimeter, area, and volume review
* Reading, creating, and interpreting charts, graphs, and tables
* Mean, median, mode, and range

Unit 8: Problem Solving & Review

* Multi-step real-world problems
* Mixed operations with fractions, decimals, percents, and integers
* Cumulative review and enrichment projects

**7th Grade-** Course Overview – The Good and the Beautiful Math 7

Math 7 (Pre-Algebra) serves as the bridge between elementary math and algebra. Students review and strengthen skills with fractions, decimals, percentages, ratios, and integers while building a foundation in algebraic thinking. New concepts such as exponents, square roots, equations, inequalities, and advanced geometry are introduced.

This level emphasizes problem-solving, logical reasoning, and application to real-life scenarios, preparing students for the rigor of Algebra 1. Lessons are open-and-go, with review and practice built in to ensure long-term mastery.

By the end of Math 7, students will:

* Work fluently with rational numbers (fractions, decimals, integers, and percents)
* Apply ratios, proportions, and percentages to solve real-world problems
* Use exponents, square roots, and scientific notation
* Write, simplify, and evaluate algebraic expressions
* Solve one-step and multi-step equations and inequalities
* Understand and apply properties of operations (distributive, associative, commutative)
* Graph equations and inequalities on the coordinate plane
* Explore functions, patterns, and sequences
* Work with geometry concepts: transformations, angle relationships, area, surface area, and volume
* Interpret data, statistics, and probability
* Develop critical thinking, problem-solving, and readiness for Algebra 1

**Table of Contents – Math 7 (Pre-Algebra)**

Unit 1: Rational Numbers & Number Sense

* Integers, decimals, and fractions review
* Absolute value and opposites
* Operations with integers, fractions, and decimals

Unit 2: Ratios, Proportions & Percents

* Ratios and rates
* Solving proportions
* Percent problems (discounts, tax, interest, commission)
* Conversions among fractions, decimals, and percents

Unit 3: Exponents, Roots & Scientific Notation

* Laws of exponents
* Squares and square roots
* Cube roots
* Writing and using scientific notation

Unit 4: Expressions & Equations

* Variables and expressions
* Properties of operations
* Simplifying expressions
* Solving one-step, two-step, and multi-step equations

Unit 5: Inequalities & Graphing

* Solving and graphing inequalities on a number line
* Graphing equations on the coordinate plane
* Slope and rate of change (introductory concepts)

Unit 6: Functions & Sequences

* Understanding input-output relationships
* Identifying functions
* Arithmetic and geometric sequences
* Using tables and graphs to represent patterns

Unit 7: Geometry

* Angle relationships (complementary, supplementary, vertical)
* Triangles and polygons
* Transformations: translations, reflections, rotations, dilations
* Circles: radius, diameter, circumference, and area
* Surface area and volume of prisms, pyramids, cylinders, cones, and spheres

Unit 8: Probability & Statistics

* Mean, median, mode, and range
* Probability models and outcomes
* Experimental vs. theoretical probability
* Analyzing and interpreting data displays (line plots, histograms, box plots)

Unit 9: Problem Solving & Review

* Multi-step real-world applications
* Mixed operations with rational numbers and algebraic reasoning
* Cumulative review and enrichment projects

**8th Grade-** Course Overview – The Good and the Beautiful Math 8 (Algebra 1)

Math 8 introduces students to Algebra 1 concepts, focusing on abstract thinking, symbolic reasoning, and applying math to solve real-world problems. Students build on their foundation in arithmetic and pre-algebra by working with variables, linear equations, functions, and polynomials. Geometry, data, and probability concepts are also integrated to strengthen overall problem-solving skills.

This course prepares students for higher-level math such as Geometry and Algebra 2 by developing strong algebraic fluency and logical reasoning. Lessons remain clear, engaging, and structured with practice and review built in to ensure mastery.

By the end of Math 8 (Algebra 1), students will:

* Simplify, evaluate, and manipulate algebraic expressions
* Solve and graph linear equations and inequalities
* Understand and apply slope, rate of change, and the equation of a line
* Solve systems of equations and inequalities
* Work with exponents, exponential functions, and scientific notation
* Factor and expand polynomials
* Solve and apply quadratic equations (by factoring, completing the square, quadratic formula)
* Understand functions, domain, range, and function notation
* Apply geometry concepts within algebra (distance, midpoint, Pythagorean theorem)
* Analyze and interpret data with statistics and probability
* Build strong reasoning skills for Geometry and Algebra 2

**Table of Contents – Math 8 (Algebra 1)**

Unit 1: Foundations of Algebra

* Properties of real numbers
* Order of operations
* Algebraic expressions and equations
* Absolute value and evaluating expressions

Unit 2: Linear Equations & Inequalities

* Solving one-step, two-step, and multi-step equations
* Solving and graphing linear inequalities
* Word problems with equations and inequalities

Unit 3: Graphing Linear Functions

* Coordinate plane review
* Slope as rate of change
* Slope-intercept form of a line
* Standard form and point-slope form
* Parallel and perpendicular lines

Unit 4: Systems of Equations & Inequalities

* Solving systems by graphing, substitution, and elimination
* Applications of systems in word problems
* Graphing systems of inequalities

Unit 5: Exponents & Exponential Functions

* Laws of exponents
* Negative and zero exponents
* Scientific notation
* Exponential growth and decay functions

Unit 6: Polynomials & Factoring

* Adding, subtracting, multiplying polynomials
* Special products (binomial squares, difference of squares)
* Factoring trinomials and polynomials
* Solving equations by factoring

Unit 7: Quadratic Functions & Equations

* Graphing parabolas
* Solving quadratics by factoring, completing the square, and quadratic formula
* Applications of quadratic equations
* Comparing linear, exponential, and quadratic functions

Unit 8: Radical Expressions & Geometry Connections

* Simplifying radicals
* Operations with radicals
* Pythagorean theorem, distance, and midpoint formulas
* Real-world geometry applications

Unit 9: Data Analysis & Probability

* Scatter plots and lines of best fit
* Mean, median, mode, and standard deviation (introductory)
* Theoretical and experimental probability
* Compound probability and counting principles

Unit 10: Problem Solving & Review

* Multi-step word problems
* Cumulative review of Algebra 1 skills
* Enrichment projects and applications