

Grade 6 Math Curriculum

• Unit 1 – Number Sense and Algebraic Thinking

This unit discusses whole numbers, including addition, subtraction, multiplication, and division, as well as terminology for and applications using these operations, powers and exponents, number patterns, and order of operations. The unit thoroughly explores variable expressions and covers perimeter and area of rectangles, and scale drawings.

• Unit 2 – Data and Statistics

This unit covers frequency tables, line plots, and pictographs, as well as bar, coordinate, line, and circle graphs, mean, median, mode, and range.

• Unit 3 – Decimals and Decimal Operations

This unit discusses using decimals, including how decimals work with place value, as well as ordering, rounding, estimating, adding and subtracting, multiplying and dividing decimals, as well as working with decimals and whole numbers and with powers of ten when multiplying and dividing. Also covered are properties of addition and multiplication, metric length, mass, and capacity, and changing metric units.

• Unit 4 – Number Patterns and Fractions

This unit covers divisibility rules, prime and composite numbers, prime factorization, greatest common factors and least common multiples. It also discusses fractions, including equivalent fractions and ordering fractions, as well as mixed numbers and improper fractions, including changing them from one to the other, and changing decimals and fractions from one to the other.

• Unit 5 – Fraction Operations

This unit covers fraction operations, including estimation, addition, subtraction, multiplication, and division, as they are done with and apply to measures of time, elapsed time, whole numbers, mixed numbers, and length, weight, and capacity in customary units, and temperature.

• Unit 6 – Ratio, Proportion, and Percent

This unit covers applications of and comparing ratios, including rates; solving proportions; and scale drawings; and understanding percents, how they relate to decimals and fractions, and how to find the percent of a number.

• Unit 7 – Geometry

This unit explains principles and aspects of geometry including lines, rays, segments, parallel and intersecting lines, and angles, as well as measuring and classifying triangles, quadrilaterals, polygons and regular polygons. Also discussed are congruent and similar figures, and line symmetry.

• Unit 8 – Geometry and Measurement

This unit discusses area of parallelograms, triangles, and circles, circumference of circles, and applications using circumference of circles. It also covers solid figures as well as surface area and volume of prisms and volume using nonstandard units.

• Unit 9 – Integers

This unit covers comparing, adding, subtracting, multiplying, and dividing integers, as well as graphing and drawing polygons on the coordinate plane, translations, reflections, rotations, and transformations.

• Unit 10 – Expressions, Equations, Inequalities, and Functions

This unit discusses writing expressions and equations, simplifying expressions, solving addition, subtraction, multiplication and division equations and inequalities. It also covers functions, writing function rules, and graphing functions.

• Unit 11 – Probability and Statistics

This unit covers probability, number sets, misleading statistics, stem-and-leaf and box-and-whisker plots.

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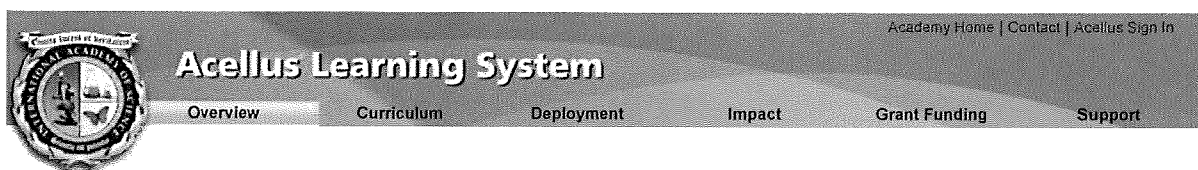
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Grade 7 Math Curriculum

• Unit 1 – Integers

This unit discusses comparing, adding, subtracting, and multiplying integers, including the concepts of opposites, absolute value, and order of operations.

• Unit 2 – Decimals

This unit covers interpreting, comparing, estimating with, rounding, adding, subtracting, and multiplying decimals, as well as dividing decimals by whole numbers and by decimals, and converting percents to decimals.

• Unit 3 – Fraction Basics

This unit discusses greatest common factors, least common multiples, what fractions mean, how to reduce them, how to convert mixed fractions to improper fractions and vice versa, how to convert fractions to terminating and to repeating decimals, and ordering rational numbers.

• Unit 4 – Fraction Operations

This unit covers finding a common denominator, then delves into adding, subtracting, multiplying, and dividing simple fractions, mixed numbers, rational numbers, and negative fractions.

• Unit 5 – Fraction Expressions

This unit presents algebraic vocabulary regarding expressions and equations, evaluating expressions, simplifying and expanding expressions with integers and rational numbers, adding and subtracting rational coefficients, factoring algebraic expressions, recognizing equivalent expressions, and translating expressions.

• Unit 6 – Equations and Inequalities

This unit covers writing equations, solving one- and two-step equations and equations with rational numbers and with variables on both sides. It also covers writing, graphing, and solving inequalities, as well as inequality word problems.

• Unit 7 – Angles

This unit discusses adjacent, complementary, supplementary, reflex, and vertical angles, as well as angles that share a vertex, triangles and angles, and drawing triangles.

• Unit 8 – 2D Figures

This unit discusses area of parallelograms, triangles, and trapezoids, area and circumference of circles, and area of irregular figures.

• Unit 9 – 3D Figures

This unit covers identifying 3D figures and nets, cross sections, and surface area and volume of prisms, pyramids, cylinders, and composite figures.

• Unit 10 – Rates and Ratios

This unit discusses ratios, basics of proportions and proportions with fractions and percents, unit rate, scale factor, using a scale to calculate length, areas in scale drawings, and scaled drawings with different scales.

• Unit 11 – Proportionality

This unit covers direct proportionality in tables, graphs, verbal descriptions, and equations, and inverse proportionality in tables, graphs, and verbal descriptions.

• Unit 12 – Statistics and Probability

This unit discusses mean, mode, median and range, box and whisker plots, random sampling, comparing data sets, probability models with categorical data and with frequencies, theoretical and experimental probability, and independent and dependent events.

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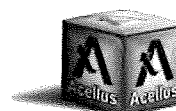
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Basic Math I Curriculum

• Unit 1 – Addition and Subtraction Basic Facts

This unit covers addition and subtraction, fact families, sums and differences, finding missing addends, sums from three addends, and story problems.

• Unit 2 – Place Value: 3 Digits

This unit covers what digits are, place value with 3-digit numbers, their expanded form, and their word form. It also explores number lines, counting order, greater than and less than, odd and even numbers, and counting by tens, fives, and twos.

• Unit 3 – Place Value: Thousands Period

This unit explores place value with 4-digit numbers and the thousands period, their expanded form, and their word form. It also discusses greater than and less than, and using organized lists and charts for logical reasoning.

• Unit 4 – Rounding Numbers

This unit covers rounding to the nearest ten, hundred, thousand, and given place value, rounding 3-digit numbers to the nearest ten, and rounding 4-digit numbers to the nearest hundreds. It also discusses counting by 25s, 50s, 100s and 1000s, using benchmarks, and story problems having to do with rounding.

• Unit 5 – Addition Skills

This unit covers the commutative, identity, and associative properties of addition, using parentheses with addition, doing mental sums with tens, hundreds, and thousands, and estimating sums for ten, hundreds, thousands, different place values, and compatible numbers. Adding compatible numbers and story problems having to do with estimating sums are also presented.

• Unit 6 – Regrouping with Addition

This unit discusses 2-digit addition without regrouping, and 2-digit, 3-digit, and 4-digit addition with regrouping. It also discusses adding three, 2-digit addends, addition with different place values, using the guess and check method, choosing an addition method, and addition story problems.

• Unit 7 – Subtraction Skills

This unit explores doing mental differences for tens, hundreds, and thousands, estimating differences for tens, hundreds, thousands, and compatible numbers, subtracting compatible numbers, and story problems for estimating differences.

• Unit 8 – Regrouping with Subtraction

This unit discusses 2-digit subtraction without regrouping, and 2-digit, 3-digit, and 4-digit subtraction with regrouping. It also discusses finding differences across zeros, subtraction with different place values, checking subtraction with addition, comparing differences, odd or even sums and differences, giving

• Unit 11 – Data, Graphs, and Probability

This unit discusses using tally and frequency tables for surveys, as well as pictographs, bar, line and circle graphs, line plots, mode and range, ordered pairs, probability of events, predicting outcomes, and fair and unfair games.

• Unit 12 – Multiplication Basic Facts

This unit explains multiplication and delves into multiplying by the numbers 0 through 11.

• Unit 13 – Multiplication Skills

This unit covers problem solving with tables, multiplication story problems, finding missing factors, multiplying with three factors, properties of multiplication, multiple-step story problems, and calculator multiplication.

• Unit 14 – Division Basic Facts

This unit explains division and multiplication by the numbers 1 through 10, division rules for zero, and multiplication and division fact families.

• Unit 15 – Division Skills

This unit presents division story problems, story problems requiring the student to choose the operation, and story problems that require the student to work backward. In addition, it discusses equations and expressions, finding the missing operation, order of operations, and calculator division.

• Unit 16 – Geometry

This unit covers lines and angles, describing lines and angles, identifying polygons and solid figures, classifying triangles by angles, and classifying quadrilaterals. It also discusses circles, congruent figures, finding lines of symmetry, and relating objects to solid figures.

• Unit 17 – Fractions

This unit explores fractions as part of a whole and as part of a group, finding fractions of amounts, understanding equivalent fractions, and comparing fractions. It also covers understanding mixed numbers, adding and subtracting like fractions, and doing story problems about fractions.

• Unit 18 – Decimals

This unit describes tenths and hundredths as decimals, decimals with whole-number parts and their word forms, comparing decimals, decimals and fractions with money, and adding and subtracting decimals.

• Unit 19 – Customary Units of Measurement

an exact answer or an estimate, choosing a subtraction method, and addition and subtraction story problems.

• Unit 9 – Telling Time

This unit covers reading a clock -- the hour and half hour, to the nearest five minutes, to the nearest minute, and to the nearest second. It also discusses different ways to say the same time, choosing a.m. or p.m., and elapsed time -- hours and minutes. It covers calculating time passage, naming the months of the year, reading calendars, and time zones.

• Unit 10 – Money

This unit explains counting pennies, nickles, dimes, quarters, half dollars, bills, and coins, and presents story problems about counting money. It also discusses and presents story problems about adding and subtracting money. Also included are calculating and counting change, and patterns in counting to the number 100.

This unit discusses length, weight, and temperature in customary units, measuring to the nearest half inch, comparing, finding perimeters, measuring and comparing capacity.

• Unit 20 – Metric Units of Measurement

This unit discusses length, area, volume, capacity, mass, and temperature in metric units.

• Unit 21 – Regrouping with Multiplication

This unit covers multiplying by tens and hundreds, estimating products, and regrouping and story problems for multiplying 2- and 3-digit numbers.

• Unit 22 – Regrouping with Division

This unit covers dividing multiples of 10, 100, and 1,000, estimating quotients, regrouping and story problems for dividing 2-digit numbers, checking division with multiplication, and story problems for tricky remainders.

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Basic Math II Curriculum

• Unit 1 – Place Value

This unit covers the thousands and the millions periods, including their expanded and word forms. It also covers comparing and ordering numbers, and roman numerals. Story problems for comparing numbers are also discussed.

• Unit 2 – Addition and Subtraction

This unit covers addition and subtraction: fact families, story problems, choosing a method, with different place values, and with regrouping (3- and 4-digits). Also included are 4-digit subtraction with zeros, and parentheses with and properties of addition.

• Unit 3 – Rounding and Estimating Sums and Differences

This unit covers rounding in the ones, thousands, and millions periods, rounding to the nearest thousand and to the given place value. It also explores doing mental sums and differences, as well as estimating large and small sums and differences and compatible numbers. Over- and under-estimating are covered, along with exact answers versus estimates.

• Unit 4 – Multiplication and Division Basic Facts

This unit covers multiplying and dividing by 0 through 12, along with fact families and story problems. Also included are properties of multiplication, expressions, equations, variables, order of operations, inequalities, and story problems for choosing the operation.

• Unit 5 – Time and Temperature

This unit addresses telling time to the nearest minute and second, different ways to say the same time, rounding time, elapsed time, units of time, comparing units of time, temperature, reading a thermometer, finding a change in temperature, negative numbers, and comparing negative numbers.

• Unit 6 – Regrouping with Multiplication

This unit covers doing mental math to find larger and smaller products, multiplying without regrouping, estimating products with rounding and with compatible numbers, multiplying 2-, 3-, or 4 digits by 1 digit, multiplying with zeros, multiplying by tens, and multiplying 2- and 3-digits with 2 digits. Also included are multiplication story problems and choosing a method for multiplying.

• Unit 7 – Data and Graphs

This unit explains data and frequency tables, venn diagrams, finding range, mean, median, and mode. It defines line plots, double-bar graphs, pictographs, line graphs, and circle graphs. It also discusses reading and making bar graphs and using a coordinate grid.

• Unit 8 – Regrouping with Division

• Unit 9 – Fractions

This unit covers fractions and mixed numbers, including models, number lines, equivalent fractions, simplest form, comparing fractions with like denominators, with like numerators, and with unlike fractions, and comparing mixed numbers. It also includes ordering fractions, changing mixed numbers to improper fractions and vice versa, as well as adding and subtracting like fractions, larger like fractions, mixed numbers, and fractions with unlike denominators. Multiplying whole numbers by fractions and fractions story problems are also discussed.

• Unit 10 – Decimals

This unit discusses decimals, their expanded and word forms, using decimals with a number line, relating decimals with fractions and with mixed numbers, ordering and rounding, estimating decimal sums and differences, adding and subtracting decimals, equivalent decimals and fractions, story problems for decimals and comparing decimals, and tricky decimal differences.

• Unit 11 – Money

This unit covers counting money, relating money with decimals and fractions, adding tenths and hundredths mentally with fractions and decimals, rounding to the nearest dollar, calculating and counting change, adding, subtracting, multiplying, and dividing with fractions, and money story problems.

• Unit 12 – Geometry

This unit discusses points, lines, and rays, including labeling. It also covers labeling, measuring, classifying, and finding unknown angles. It also covers labeling lines, as well as discussing polygons, classifying polygons, classifying triangles by sides and by angles, and classifying quadrilaterals. Additionally, it explores circles, similar and congruent figures, symmetry, solid figures, faces, edges, and vertices.

• Unit 13 – Measurement

This unit discusses customary linear units, including changing and comparing them, and measuring fractional parts of inches. It also covers customer weight units, including changing them. It further explores metric linear units, including changing and comparing them, and measuring centimeters and millimeters. Also included are metric mass units, changing metric mass units, and measurement story problems.

• Unit 14 – Capacity, Perimeter, Area, and Volume

This unit covers customary capacity units, including smaller units and changing units, perimeter of squares and rectangles, area of squares, rectangles and rectangular sections, volume models and measurements, and metric capacity units, including changing them.

• Unit 15 – Probability and Number Patterns

This unit describes doing larger and smaller mental quotients, and doing mental division with missing numbers, estimating quotients with rounding, with compatible numbers, and with larger quotients, dividing 2- and 3-digit numbers by 1 digit, and dividing 2-, 3-, and 4-digit numbers by 2 digits. It also discusses dividing with remainders, dividing with zeros, checking division with multiplication, choosing a method, and adjusting quotients, as well as story problems for understanding remainders and choosing an operation, and division story problems with a map.

This unit covers predicting outcomes, probability as a fraction, mathematical and experimental probability, tree diagrams, divisibility rules for 2, 5, 10, and 25, factors, multiples, prime and composite numbers, number patterns, line plots with fractions, working backward and multi-step story problems.

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