Mathematics Curriculum Overview: Türkiye

Grade	Number	Algebra	Data	Spatial Sense, Geometry & Measurement	Financial Literacy	Social-Emotional Learning & Mathematical Processes
Grade 6	**Operations with Natural Numbers** - Exponential Expressions: *natural number, exponent, base* - Order of Operations - Distributive property and Common Multiple Property - Natural Number Problems **Multiplications and Times** - Multiplications and Times: *multiplier, time, divisor* - Divisibility Rules - Prime Numbers - Least Common Multiple and Greatest Common Factors **Sets** - Sets: *set, element-element numbers, union-intersection, empty set* - Integers: *positive and negative integer, order of integers* - Absolute Values **Operations with Fractions** - Order in Fractions - Adding, Subtracting, Multiplying, and Dividing Fractions - Estimating Fractions - Problems with Fractions **Decimals** - Rounding Decimals - Multiplying and Dividing Decimals - Estimating Decimals - Problems with Decimals **Ratio** - Ratio and Unite	**Algebraic Expressions** - Algebraic Expression: *variable, coefficient, term, constant term, like terms* - Modelling Algebraic Expressions	**Data Collection and Evaluation** - Creating Research Questions - Data Collection and Evaluation: *column chart, frequency chart, axes* **Data Analysis** - Mean and Range - Comparing data in two datasets	**Angles** : *adjacent angle, complementary angle, supplementary angle, adjacent complementary angle, adjacent supplementary angle, opposite angle* **Area Measurement** - Area of shapes with parallel sides - Units of land area: *acre, decare, hectare* - Area problems **Circle** - Drawing circle and its elements: *diameter, radius, centre, circle, circular region* - Pi *(π)* **Geometric Objects** - Volume of Rectangular Prism: *unit cube, volume* - Units of Volume: *m3, dm3, cm3, mm3* - Volume Problems - Estimating volume of 3D shapes **Liquid Measurement** - Units of Liquid measurement: *L, dL, cL, mL* - Liquid Measurement Problems	n/a	n/a

Grade 7	**- Operations with Integers** : *communicative-, associative-, identity-, closure-, and distributive property* - Addition and subtraction of integers - Multiplication and division of integers, - Repeated multiplication of integers - Integer problems **Rational Numbers** - Recognizing and showing rational numbers on numerical axis - Decimals and rational numbers - Comparison and order in rational numbers - Operations with rational numbers **Ratio and Proportion** - Direct proportion - Inverse proportion - Problems in proportion **Percentage** - Percentage calculations - Problems of percentage	**Algebraic Expressions** - Operations with Algebraic Expressions - Number Pattern **Equality and Equation** - Equality and Equation: *equality, degree, unknown, equation* - Conservation of Equality and Equation - Problems and Solutions of First Degree Equation with One Variable	**Data Analysis** - Line Graph - Mean, Median and Mode - Pie Chart - Different Demonstrations of Data	**Lines and Angles** - Angle Bisector - Two parallel lines cut by a transversal: *alternate interior angles, corresponding angles, interior angles, and exterior angles* **Polygons** - Regular polygons and properties of polygons - Rectangles - Shapes with parallel sides - Trapezoid and rhombus - Area of rhombus and trapezoid - Area problems **Circle and Disk** - Central angle and arcs in circle - Radius and diameter - Area of disk and circular segment **Different Views of Objects** : *front, top, right side, left side, rear, and bottom*	n/a	n/a
Grade 8	**Multiplications and Times** - Multiplying positive integers - Greatest common factors - Least common multiples **Exponential Expressions** - Analysis of decimal notations - Very large and small numbers - Scientific notation of very large and small numbers **Square Roots** - Identifying non-perfect square numbers between two natural numbers - Calculations with square roots - Four operations with square roots - Square roots of decimals - Irrational and real numbers	**Linear Equation** - First degree equation with one variable - Coordinate system - Linear relations*: independent variable, dependent variable, linear equation* - Linear graphs - Real life situations with linear relations - Slope of a straight line: *slope* **Inequalities** - First degree inequalities with one variable: *greater than or equal to, less than or equal to*	**Data Analysis** - Interpretation of line and column graphs - Visualization of data with appropriate graphs **Probability of Simple Event** - Determination of probable events: *experiment, output, event, probable event, sample space* - Prediction the likelihood of events: *identities, impossible events*	**Triangles** - Median - Angle bisector - Orthocenter of triangles: *right triangle, hypotenuse* - Relations of triangles' sides - Geometric objects - Relations of angles with triangles' sides - Drawing of triangles, Pythagorean relation **Congruency and Similarity** : *ratio of similarity* **Transformation Geometry** - Translation: *image* - Reflection: *symmetry axis* **Geometric Objects** - Right prisms: *base* - Right circular cylinder*: height* - Surface area of right circular cylinder - Volume of right circular cylinder - Elements and development of right pyramid - Elements and development of right cone	n/a	n/a
Grade 9	**Logic** - Propositions and compound propositions: *proposition, compound proposition, not/negation {~ or '}, and {∧}, or {∨}, either...or {⊻}, De Morgan's laws, conditional proposition/if {⇒}, converse, contrapositive, two-way conditional proposition/if and only if {⇔}, for all {∀}, there exists {∃}, open proposition, definition, axiom, theorem, proof, hypothesis, statement, truth value* **Sets** - Basic concepts in sets: *set, element, empty set, subset, finite set, infinite set, equal set, proper set* - Operations in sets: *union, intersection, universal set, complement, De Morgan's laws, difference, discrete sets, ordered paired, Cartesian product*	**Equation and Inequalities** - Number sets: *natural, whole, rational-, irrational-, real numbers* - Divisibility rules: *GCF, LCM* - First-degree equations and inequalities: *unknown, variable, equation, equation degree, inequality, solution set, absolute value, intervals of real numbers* - Exponential expressions and equations: *exponential expression, base, power, square roots, rational power* - Applications of equation and inequalities: *ratio, proportion, direct proportion, inverse proportion, percentage*	**Data** - Measures of central tendency and dispersion: *data, discrete data, continuous data, arithmetic mean, median, mode, range, maximum value, minimum value* - Visualization of data with graphics: *line graph, column graph, pie chart, group number, group width, histogram*	**Triangles** - Basic concepts of triangles: *angle, triangle, side, interior angle, exterior angle, triangle inequality, isosceles triangle, equilateral triangle, right-angled triangle* - Congruency and similarity of triangles: *congruency, side-angle-side {A.S.A}, side-side-side {S.S.S}, angle-side-angle {A.S.A}, angle-angle {A.A}, similarity, ratio of similarity, secant* - Elements of triangles: *bisector, interior bisector, exterior bisector, median, altitude, orthocenter, perpendicular bisector, centroid* - Right triangle and trigonometry: *Pythagorean theorem, Euclid's theorem, trigonometrical ratio* - Area of triangle: *base, height, area*	n/a	n/a

1. *Adopted from: The Ontario Science and Technology Curriculum, (2022), https://www.dcp.edu.gov.on.ca/en/curriculum/science-technology* & Math (Gr. 1-8) and Math (Gr. 9-12) Curricula of the Turkish Ministry of National Education (2023): http://mufredat.meb.gov.tr/Programlar.aspx

2. **Strand**; Subtheme: *key concepts*