World Curriculum

Mathematics

Grade 6

1. Numbers
1.1 Natural numbers
1.2 Whole numbers
1.3 Even and odd numbers
1.4 Prime numbers
1.5 Composite numbers
1.6 Integers
1.7 Addition and subtraction
1.8 Multiplication and division
1.9 Simplification

2. Direction
2.1 North-South-East-West
2.2 Sub-directions
2.3 The vertical and the horizontal
2.4 Using directions for location
2.5 Using sketches for location

3. Geometry
3.1 Space
3.2 Surface
3.3 A point
3.4 A line segment
3.5 A line
3.6 A ray
3.7 Parallel lines
3.8 Intersecting lines
3.9 Angles

4. Rectilinear plane figures
4.1 Plane figures
4.2 Open and closed figures
4.3 Elements of rectilinear plane figures
4.4 Triangle
4.5 Quadrilaterals
4.6 Types of quadrilaterals
4.7 Elements of a parallelogram
4.8 Angles of a parallelogram
4.9 Polygons

5. Length, perimeter and area
5.1 Units of length
5.2 Relationship between units
5.3 Tools for measuring length
5.4 Indicators of length
5.5 Addition and subtraction
5.6 Perimeter and area of a triangle
5.7 Perimeter and area of a quadrilateral
5.8 Perimeter and area of a polygon
5.9 Perimeter and area of compound figures

6. Algebra
6.1 A variable
6.2 Symbols to denote variables
6.3 Constructing expressions with variables
6.4 Relating expressions to real-life situations
6.5 Simplification
6.6 Substitution

7. Data collection and data processing
7.1 Planning to collect data
7.2 Using tally marks to collect data
7.3 Organizing data in tables
7.4 Interpreting data organized in tables
7.5 Representing data in pictographs
7.6 Interpreting data in pictographs

8. The Cartesian plane
8.1 The axes
8.2 The four quadrants
8.2 Coordinates of the orgin
8.3 Coordinates of a point on the x-axis
8.4 Coordinates of a point on the y-axis
8.5 Coordinates of a point elsewhere
8.6 Joining two points to form a line

Grade 7

1. Numbers
1.1 Place value
1.2 Local system of enumeration
1.3 International counting system
1.4 Prime numbers
1.5 Factors and multiples
1.6 HCF and LCM
1.7 Fraction
1.8 Decimal numbers
1.9 Rounding off

2. Time
2.1 Units of time
2.2 The 12-hour clock
2.3 The 24-hour clock
2.4 Longitudes
2.5 Time zones
2.6 Standard time
2.7 Local time
2.8 Time converter
2.9 Day light saving time

3. Geometry
3.1 Transversal
3.2 Solving angle problems
3.3 Curves
3.4 Circles
3.5 The chord of a circle
3.6 The arc of a circle
3.7 Segments of a circle
3.8 Sectors of a circle
3.9 Radius and diameter

4. Solid shapes
4.1 Three dimensional shapes
4.2 Surfaces, faces, edges and vertices
4.3 Cube
4.4 Cuboid
4.5 Cylinder
4.6 Regular tetrahedron
4.7 Square pyramid
4.8 Triangular prism
4.9 Euler's relationship

5. Circumference, perimeter and area
5.1 Circumference of a circle
5.2 Perimeter of a semicircle
5.3 Circumference of a circular arc
5.4 Permeter of an a cicular arc sector
5.5 Area of a circle
5.6 Area of a semi and quarter circle
5.7 Surface area of a cube
5.8 Surface area of a cuboid
5.9 Surface are of a cylinder

6. Algebra
6.1 Setting up expressions with two unknowns
6.2 Substituting values for the unknowns
6.3 Formulae and rules
6.4 A simple equation
6.5 Solving simple qquations
6.6 Constructing equations on real-life situations

7. Data collection and data processing
7.1 Types of data
7.2 Designing data collection instruments
7.3 Unorganized and organized data
7.4 Using frequency tables
7.5 A line graph and histogram
7.6 Bar charts

8. The Cartesian plane
8.1 Straight lines parallel to the axes
8.2 Other straight lines
8.3 Representing inequalities
8.4 Graphs of simple linear equations
8.5 Point of intersection of two lines
8.6 Practical applications

Grade 8

1. Numbers
1.1 Square
1.2 Square root
1.3 Cube
1.4 Cube root
1.5 Laws of exponents
1.6 Directed numbers
1.7 Ratio
1.8 Percentage
1.9 Number sequences

2. Set theory
2.1 What is a set?
2.2 Finite sets
2.3 Infinite sets
2.4 The null set
2.5 Equal sets
2.6 Equivalent sets
2.7 Subset and superset
2.8 Operations on sets
2.9 Venn diagram

3. Geometry
3.1 A triangle
3.2 Sides of a triangle
3.3 Types of triangles
3.4 Altitude of a triangle
3.5 Medians of a triangle
3.6 Interior and exterior angles
3.7 Angle sum property
3.8 Sum of lengths of two sides
3.9 Pythagoras theorem

4. Nets of solids
4.1 Nets for three dimensional shapes
4.2 Isometric drawings
4.3 Symmetry in 3-D shapes
4.4 Octahedron
4.5 Dodecahedron
4.6 Icosahedron
4.7 Platonic solids

5. Volume, mass and capacity
5.1 Standard units to measure volume
5.2 Volume of a cube
5.3 Volume of a cuboid
5.4 Volume of a cylinder
5.5 Units to measure the volume of liquids
5.6 Mass and its units of measurement
5.7 Difference between mass and weight
5.8 Instruments for measuring mass
5.9 Capacity and its units of measurement

6. Algebra
6.1 Terms, factors and coefficients
6.2 Constructing expressions with three unknowns
6.3 Monomials, binomials and polynomials
6.4 Similar and dissimilar terms
6.5 Addition and subtraction of expressions
6.6 Multiplication and division of expressions

7. Data processing
7.1 Representative values
7.2 Range
7.3 Mean
7.4 Median
7.5 Mode
7.6 Pie chart
7.7 Stem and leaf diagram

8. Financial arithmetic
8.1 Currency conversion
8.2 Profit-loss
8.3 Sales tax and value added tax
8.4 Discount
8.5 Simple interest
8.6 Compound interest

Learning Outcomes
LO1. Apply appropriate tools and methods for problem solving
LO2. Represent data suitably and communicate effectively locally as well as globally
LO3. Demonstrate reasoning and curiosity to find better methods of problem solving

Note: Color coding represents common themes of topics across grades 6, 7 and 8