Grade 7

Numbers

1. **Arithmetical operations.**

   1.1 Add, subtract, multiply and divide whole numbers.
   1.2 Solve operations involving combined addition, subtraction, multiplication and division of whole numbers.
   1.3 Solve word problems involving addition, subtraction, multiplication and division of whole numbers.

2. **Divisibility, prime factorization, L.C.M. and H.C.F.**

   2.1 Use the divisibility rules of 2, 3, 4, 5, 6, 9 and 10.
   2.2 Find the prime factorization of whole numbers.
   2.3 Find the lowest common multiples of two to three 1-2 digit numbers.
   2.4 Find the highest common factors of two to three 1-2 digit numbers.
Decimals

1 Comprehension of decimal numbers.

1.1 Read and interpret decimal numbers.
1.2 Compare decimal numbers using > or <.
1.3 Round off whole numbers to the nearest tens, hundreds, thousands etc.
1.4 Round off decimals to the nearest whole number and to the specified number of decimal places.
1.5 Convert fractions to decimals and vice-versa.

2 Operation of decimal numbers.

2.1 Addition of decimal numbers.
2.2 Subtraction of decimal numbers.
2.3 Solve operations involving addition and subtraction of decimal numbers.
2.4 Multiplication of decimal number by a decimal number.
2.5 Multiplication and division of decimals by 10, 100, 1000 etc.
2.6 Division of decimal numbers by a decimal number.

3 Application of decimal numbers.

3.1 Solve word problems involving decimal numbers.
Algebra and Equations

1. **Comprehension of algebra.**
   1.1 Use letters to represent unknowns and write simple algebraic expressions.
   1.2 Add and subtract algebraic terms.
   1.3 Multiply algebraic terms.
   1.4 Divide algebraic terms.
   1.5 Evaluate algebraic expressions by substitution.
   1.6 Simplify expressions with parenthesis.
   1.7 Factorize algebraic expressions (exclude group factorization).

2. **Comprehension of equations.**
   2.1 Solve linear equations (include cases involving fractional coefficients, exclude: \( \frac{x - 3}{2} + \frac{2x - 1}{5} = 1 \)).
Ratio and Proportion

1. Comprehension of rate.
   1.1 Use common measures of rate.
   1.2 Solve problems involving rate.

2. Comprehension of ratio.
   2.1 Find the ratio of two or more quantities.
   2.2 Simplify ratios with whole numbers.
   2.3 Simplify ratios with units. (e.g. 7 : 28, 20 hr : 1 day)
   2.4 Simplify fractional ratios.

3. Comprehension of proportion.
   3.1 Solve word problems involving direct proportions.
   3.2 Solve word problems involving proportional parts (sharing).
   3.3 Solve word problems involving alms (zakaaiy).
Perimeter

1 Comprehension of perimeter.

1.1 Find the perimeter of different shapes when the sides are given.
1.2 Find the circumference of circles, where the radius or diameter is given.
1.3 Find the perimeter of semi circles and quarter circles.
1.4 Find the perimeter of compound figures.
1.5 Find the dimension of rectangles, squares and circles given its perimeter and other dimensions.

2 Application of perimeter.

2.1 Solve word problems involving perimeter.

Area

1 Comprehension of area.

1.1 Use formula to calculate the area of rectangles, squares, triangles, parallelograms, trapeziums and circles.
1.2 Find the area of semi circles and quarter circles.
1.3 Find the dimension of rectangles, parallelograms, triangles and trapezium given its area and other dimensions.
1.4 Find the area of compound figures.
1.5 Find the area of shaded regions.

2 Application of area.

2.2 Solve word problems involving area.
1 Comprehension of straight line graphs.

1.1 Use Cartesian coordinates in two dimensions.
1.2 Draw straight line graphs for the equations in the form $y = mx + c$. 