The Syllabus

PRIMARY 1

First Term

1. *Pre-number Concepts*

Sorting, comparing and matching sets of objects. Ideas of ‘many and few’; ‘more than’, ‘less than’, and ‘equal to’; ‘order’ and ‘betweenness’; ‘have’ and ‘have not’.

2. *Number and Counting*

Recognition of the number of objects in a set by grouping and regrouping from 1 to 10 and 11 to 20.

Counting, reading and writing of numbers 1 – 10; 11 – 20. Counting backwards 18 – 1.

Counting in twos 2 – 20. *

Recognition of odd and even numbers 1 – 20.

3. *Adding and Subtracting*

Decomposition and composition of numbers 2 – 18.

Recognition of the signs ‘=’, ‘+’, ‘–’.

Basic addition facts: addition of numbers having a sum not exceeding 18. †

Understanding of ‘sum’ and ‘difference’.

Relationship between addition and subtraction through discovery, e.g., 1 + 5 = 6, 6 – 1 = 5, 6 – 5 = 1.

Basic subtraction facts: subtraction from numbers up to 18. †

Simple oral problems on addition
Simple oral problems on subtraction
Simple oral mixed problems on addition and subtraction
} With numbers not beyond 18.

Recognition of the commutative property of addition through discovery, e.g., 2 + 3 = 3 + 2 = 5.

4. *Simple Geometrical Shapes*

Recognition of the following simple shapes through play: triangles, squares, rectangles, hexagons and circles; cubes, cuboids and spheres.

5. *Introducing Symbols*

Using a symbol to represent a number, e.g., 2 + 3 = ☐,

4 + △ = 5.

Note: * There are two ways of counting, i.e.

(1) two, four, six, eight, ……

(2) one 2, two 2’s, three 2’s, ……

The former serves as an introduction to multiplication and the latter to division.

† In addition having the sum up to 18 and subtraction from a number up to 18, all 'basic combinations should be included and practised through concrete examples and drilled thoroughly.

Secoud Term

1. *Number and Counting*

Counting, reading and writing of numbers 21 – 50 and 51 – 99. Introducing the concept of place value–tens and units–by grouping of objects in tens.

Counting in twos (reteaching), threes, fours, fives and tens, including grouping and sharing activities.

2. *More Adding and Subtracting*

Basic combinations of addition and subtraction with numbers not beyond 18 (reteaching).

Addition of numbers up to 2 digits including carrying.

Subtraction of numbers up to 2 digits, excluding decomposition. Recognition and use of the simple brackets '( )' through concrete examples.

Addition of three or more numbers, the sum being up to 99, including addition of three or more of the same number as a preparatory step to muItiplica1ion.

Relationship between addition and subtraction (reteaching), e.g.,

$$\left.\begin{array}{l} 3+5=8 \\ 3+?=8* \end{array}\right\} \qquad \left.\begin{array}{l} 8-5=? \\ 8-?=3 \end{array}\right\} \qquad \left.\begin{array}{l} 8-3=? \\ 8-?=5 \end{array}\right\}$$

Commutative property of addition (reteaching).

3. *Money*

Recognition of 1he coins of H.K. currency.

Equivalent value.

Buying and selling activities.

Making change.

Simple addition and subtraction through oral problems related to the daily life of pupils (no written work is expected except the answer).

4. *Length*

Recognition and use of measurement of length, using centimetres only. *Measuring activities.*

5. *Time*

Recognition and use of the time relations between weeks and days, days and hours, hours and minutes and reading hours and minutes from a clock-face.

6. *Simple Geometrical Shapes*

Recognition of simple geometrical shapes (re-teaching).

Note: * This may first be interpreted as 'Three plus a number equals eight. What is the number?' and secondly as '3 + ☐ = 8. What number should be written in the square?'

PRIMARY 2

First Term

1. *Number*

Reading and writing of numbers up to 3 digits.

Concept of place value H – T – U.

2. *More Adding and Subtracting*

Adding of numbers, the sum up to 3 digits.

More relationships between addition and subtraction (reteaching), e.g.,

$$\left.\begin{array}{l} 3+5=8 \\ 3+?=8 \\ ?+5=8 \end{array}\right\} \qquad \left.\begin{array}{l} 8-5=? \\ 8-?=3 \\ ?-5=3 \end{array}\right\} \qquad \left.\begin{array}{l} 8-3=? \\ 8-?=5 \\ ?-3=5 \end{array}\right\}$$

Subtraction in 2 digits with decomposition from tens to units.

3. *Multiplying*

Counting in 2's, 3's, 4's, ……, 9's, 10's (reteaching).

Introducing multiplication through repeated addition. Understanding the meaning of product and the sign '×'. Multiplication of numbers up to 10 × 10 (12 × 12 optional).

Recognition of the commutative property of multiplication through discovery, e.g., 2 × 3 = 3 × 2 = 6.

4. *Money*

Coins of H.K. currency (reteaching).

Recognition of H.K. notes up to $100.

Equivalent value (reteaching).

Buying and selling (reteaching) in dollars only, up to $100 or in dollars and ten cents, up to $10.

Making change (reteaching) in not more than two denominations.

Simple addition and subtraction through oral problems (reteaching).

5. *Length*

Recognition of feet and inches, as met with in everyday life, but not as a practical system of measurement to be used by the child.

6. *More geometrical shapes*

Recognition of shapes (reteaching) through play with the addition of the following:

Three-dimensional:	pillars (prisms) and pyramids.
Two-dimensional:	rhombuses, kites and ladders (trapeziums).

Second Term

1. *Number*

Reading and writing of numbers up to 4 digits.

Place value Th - H - T - U. Counting in 10's and 50's.

2. *More Adding and Subtracting*

Subtraction in 3 digits with decomposition from hundreds to tens and from tens to units (reteaching).

Mixed operations of addition and subtraction up to 3 digits.

3. *Multiplying and Dividing*

Simple multiplication with 1 digit multiplier and 1 to 2 digit multiplicand. Counting in 2's, 3's, 4's, …… , 9's, 10's (reteaching).

Concept of division through sharing and grouping activities with numbers up to 24, including recording * of facts.

Understanding the meaning of quotient and the sign ' ÷ '.

4. *Measurement*

Recognition and use *through activities* of :

Length: metres; centimetres (reteaching).

Weight: kilograms, grams.

Time: hours, minutes (reteaching); seconds; the calendar.

5. *Geometry*

Recognition of (straight) lines, curves and parallel lines.

Recognition of right angles.

Note: * It is suggested that teaching of the short division form

e.g. 5)23 may be omitted when the long division form

4...3

4...3

e.g. 5$\overline{)23}$ can serve both. The difference between long and short division is merely whether the working done mentally is filled in.

† Actual weighing by pupils at this stage should not exceed three kilograms.

PRIMARY 3

First Term

1. *Number*

Reading and writing of numbers up to 4 digits (reteaching).

Place value Th - H - T - U (reteaching).

2. *More Adding and Subtracting*

Adding and subtracting within 4 digits.

3. *Multiplying and Dividing*

Arranging 1 - 120 in a table in rows of 10's, marking off multiples of 2, 3, 5 and 11, one at a time, and recognizing the pattern for each, e.g., odd and even numbers; numbers divisible by 2, 5, 10.

Multiplication with 1 - 2 digit multiplier, 1 - 3 digit multiplicand and product less than 9999.
Repeated subtraction and its relation to division.

Division with and without remainder (reteaching), 1 digit divisor and 1 - 3 digit dividend.

4. *Time and money*

Four rules and changing units:

Time: weeks, days, hours, minutes, seconds.

Money: dollars and cents.

5. *Geometry*

Perimeters of figures by measurement.

Making simple 2-D shapes and using each to form patterns.

6. *Introducing Algebraic Symbols*

Using a symbol to represent a number (reteaching), introducing the use of algebraic symbols.

For example, $7 + Y = 9$ may be introduced as 'What is the value of Y? In other words, what number is added to 7 to give 9?'

Second Term

1. *More Multiplying and Dividing*

Introducing factors.

Introducing multiples.

Repeated subtraction and its relation to division (reteaching). Long division with dividend of not more than 4 digits.

2. *Simple Brackets*

Recognition of '( )' and its introduction through concrete examples (reteaching).

The associative property of addition,* e.g., $2 + (3 + 4) = (2 + 3) + 4$ and the associative property of multiplication, e.g., $2 \times (3 \times 4) = (2 \times 3) \times 4$ illustrated through practical examples.

3. *Fractions*

Meaning of simple fractions, through various practical

activities.

Addition and subtraction of fractions of the same denominator.

4. *Measurement*

Weight: Recognition of pounds, ounces, catties and taels as met with in everyday life.

The approximate relation of pounds and catties to kilograms.

Capacity: litres and millilitres. *Measuring activities*.

Length: miles and yards, for recognition only.

5. *Statistical Charts*

Reading and interpretation of pictograms and simple block charts, using materials and facts commonly met with by primary pupils.

Note: * $(4 - 2) - 1 \neq 4 - (2 - 1)$ and

$(4 \div 2) \div 2 \neq 4 \div (2 \div 2)$

PRIMARY 4

First Term

1. *Fractions*

Addition and subtraction of fractions with the same denominators (reteaching).

Changing of fractions – equivalent fractions through paper folding and other similar activities.

Proper fractions, improper fractions and mixed numbers.

2. *Four Rules*

Mixed operations of addition and subtraction (reteaching). Unitary method, direct proportion only, with simple quantities. Mixed operations of multiplication and division.

3. *Decimals*

Place value: thousands, hundreds, tens and units (reteaching).

Meaning of decimals through money and other concrete examples.

Place value in decimals.

Addition and subtraction of decimals to 2 decimal places. Multiplication of decimals to 2 decimal places, the multiplier being a whole number.

Division of decimals to 2 decimal places, the divisor being a whole number. (Significant digits and rounding off may be taught at the discretion of the teacher).

4. *Measurement*

Capacity: gallons and pints as met with in everyday life. Consolidation of measuring, by *practical activities* (metric units only). Relations between metric and other units may be discussed, but conversions should be avoided.

5. *Statistical Charts*

Construction and interpretation (reteaching).

6. *Geometry*

Perimeters of rectangles and squares; introduction of the formulae. Making models of cubes, cuboids, prisms and pyramids and using them to discover new three-dimensional shapes, e.g., when two pyramids are joined base to base a new shape is formed.

Second Term

1. *Brackets*

Simple brackets (reteaching).

Recognition of the distributive property of multiplication through discovery, e.g., $2 \times (3 + 4) = (2 \times 3) + (2 \times 4) = 14$

$$2 \times (4 - 3) = (2 \times 4) - (2 \times 3) = 2$$

Recognition of $\overline{\quad\quad}$, ( ), [ ], { } with simple examples showing priority.

2. *Mixed Four Rules*

Mixed operations of multiplication and addition. Mixed operations of multiplication and subtraction. Mixed operations of division and addition.

Mixed operations of division and subtraction.

3. *Factors and Multiples*

Factors, common factors and the highest common factor by listing.

Multiples, common multiples and the least common multiple by listing.

4. *Fractions*

Comparison of fractions.

5. *Area*

Idea of area through comparison or other methods leading to the need for a unit area. Area of rectangles, including squares, by covering with unit areas.

Appropriate use of square metres and square centimetres.

6. *Measurement*

Length: kilometres and millimetres.

Area: square metres and square centimetres (reteaching).

Four rules and changing units, for all measurements learned so far.

7. *Geometry*

Recognition of the fol1owing through paper folding and other suitable activities:

Lines and points, intersecting lines, perpendicular lines.

PRIMARY 5

First Term

1. *Number*

Reading and writing of numbers up to 7 digits. Use of periods* to facilitate easy reading of large numbers.

Place value (reteaching).

Rough estimation of large numbers by counting in approximate groups, e.g., in 50's or 100's.

Rounding off large numbers in thousands, ten thousands, hundred thousands and millions.

2. *Prime and composite numbers*

The existence of primes and composite numbers through experience in exact division.

Use of the ‘Sieve’ of Eratosthenes to find prime numbers from 1 to 100.

3. *Fractions*

Addition and subtraction of fractions of different denominators. Multiplication and division of fractions.

Simple four rules.

4. *Area*

Area of the triangle, and of polygons including parallelogram and trapezium through dissections.

5. *Geometry*

Use of set squares in drawing parallel lines and perpendicular lines.

Use of the compasses in drawing circles (introducing the terms: centre, radius, diameter of a circle).

Approximate determination of the circumference and area of a circle through experiments.

Note: * The period (i.e. a comma) is used to facilitate reading of place value. Although in Chinese a period is put after every four places, it is more common to put a period after every three places.

Second Term

1. *Prime and composite numbers*

Expressing composite numbers as a product. of prime numbers. The use of the index notation.

2. *Decimals*

Conversion of fractions into decimals up to 3 places only, excluding recurring decimals.

Correcting a decimal to 1 or 2 decimal places.

Multiplication of decimals with numbers up to 2 places of decimal.

Division of decimals with divisor up to 2 places of decimal.

3. *Percentage*

The important role of percentage in expressing fractional parts.

Conversion of simple fractions into percentage and vice versa through application on concrete quantities.

Conversion of decimals into percentage and vice versa through application on concrete quantities.

4. *Area*

Areas of parallelograms and trapeziums (reteaching); introduction of the formulae.

5. *Volume*

The concept of occupying space *through experiments*.

The cube with edges of unit length. Volume of cubes and cuboids through *dissections*, or by *filling with sand*. Volume of small irregular objects, by *displacement of water*.

(Metric units to be used throughout.)

Appropriate uses of cubic metre and cubic centimetre.

6. *Graphs*

The idea of direct proportion through examples in unitary method.

Reading and interpretation from ready drawn conversion graphs.

Representation of proportional increase or decrease by straight line graphs.

PRIMARY 6

First Term

1. *Numerals*

Recognition of the Roman numerals I, V, X, L, C, D, M and the Chinese numerals, 〇, 一, 二, 三, 四, 五, 六, 七, 八, 九, 十, 百, 千 and 万 of numbers expressed in these numerals.

2. *Averages*

Finding the average of a group of numbers and using the averages of natural data for comparison (e.g., the average weights of different classes of pupils).

3. *Fractions and decimals*

Conversion of fractions to decimals (reteaching) introducing recurring decimals. Conversion of decimals to fractions (reteaching) excluding recurring decimals.

4. *Factors and multiples*

In the table of 1 - 120 (see Primary 3, 1st term) recognizing patterns of numbers divisible by 2, 3, 4, 5, 6, 9, 10 and 11.

Divisibility tests without proof (reteaching) for 2, 3, 4, 5, 6, 9, 10 and 11.

Finding square root by factors.

Highest common factors and least common multiples (reteaching).

Euclidean algorithm (without proof) may be used for finding the H.C.F. of numbers.

5. *Percentage and direct proportion*

The application of percentage and direct proportion to problems involving discount, profit and loss, simple interest (without formula).

6. *Perimeter, area and volume*

Calculations from given data of:

perimeters of rectilinear figures,

areas of triangles, rectangles and polygons,

volumes of cubes and cuboids,

circumference and area of circle (reteaching); introduction of π.

7. *Geometry*

Compass bearings (8 points); use of a protractor to. measure angles.

8. *Graphs*

Representation of whole numbers and fractions on a number line (positive numbers only).

Scales and interpretation of simple line graphs. Representation- of direct proportion by straight line graphs (reteaching).

Reading and making of ready reckoners.

Second Term

It is expected that this part of the syllabus will be completed in the normal school term.

1. *Number*

Introducing negative integers and fractions through addition and subtraction on a number line. Use of negative numbers in recording facts (e.g., temperature, gain and loss).

2. *Use of algebraic symbols*

The use of a letter to represent an unknown. Very simple equations.

3. *Abacus*

Addition and subtraction.

4. *Number Patterns**

Square numbers, triangular numbers; simple magic squares and other number games.

5. *Measurement**

Stories of measurements. 24-hour clock; time-tables (e.g., those of buses, ,trains or aeroplanes).

6. *Location of places**

Location of points on a plane by giving the distances from two points or by bearing and distance from a point.

7. *Simple Venn diagrams**

Use of simple Venn diagrams to describe appropriate practical situations.

8. *Graphs**

Simple curve graphs (e.g., squares of numbers, areas of rectangles with constant perimeter).

9. *Geometry**

Idea of line symmetry through paper folding and cutting or other suitable activities.

Forming curves with straight lines (curve stitching or drawing lines on square paper; the names of the curves should be avoided).

Note: * These topics are to be treated recreationally.