Part 3 Contents

First Stage of Schooling (Grade 1～3)

I. Number and algebra

(I) Recognize numbers

1. Understand the meaning of numbers up to 10 thousand in realistic situation; can recognize, read, and write numbers less than 10 thousand; can express number of sequence and position of events and objects.
2. Able to tell the names of different digits, understand the meanings of numbers expressed on different digits; know that multi-digit numbers can be expressed by abacus (Refer to example 1).
3. Understand the meanings of symbols of <, =, >, can use symbols and phrases to describe numbers less than 10 thousand (Refer to example 2).
4. Feel the meaning of a large number when associated with realistic materials as well as to do estimation (Refer to example 3).
5. Able to comprehend the preliminarily recognize decimals and fractions in combination with concrete situations; can read, write decimals and fractions.
6. Able to compare two 1-digit decimals and know which is greater in combination with concrete situations; can compare the dimensions of 2 fractions with the same denominators.
7. Able to use numbers to represent events and objects in daily living as well as to engage in communications.

(II) Number computations

1. Experience and learn the meaning of arithmetic computations (＋,－, ×, ÷) of integers in combination with concrete situation (Refer to example 5).
2. Able to fluently and orally compute addition and subtraction for numbers less than 20, and using tables of multiplication to do multiplication and division; can do simple oral computation of addition and subtraction for numbers within 100, and can do multiplication or division of 2-digit numbers by 1-digit numbers.
3. Able to do addition and subtraction for two-digit and three-digit numbers, multiplication of 2-digit numbers or 3-digit numbers by 1-digit numbers; multiplication of 2-digit numbers by 2-digit numbers; as well as division of 2-digit and 3-digit numbers by 1-digit numbers.
4. Recognize parenthesis; can do simple arithmetic mixed computation for integers (2 steps).
5. Able to do addition and subtraction for fractions with the same denominators (denominator smaller than 10) as well as 1-digit decimals.
6. Able to choose adequate unit to do simple estimation, in concrete situation. Experience and learn the effect of estimation in life time in combination with concrete situation (Refer to example 6).
7. Experience the process of communicating one's own algorithm with others.
8. Able to solve simple problems in daily living flexibly using variety of methods, and to judge whether the results are reasonable or not. (Refer to example 7).

(III) Common quantities

1. Acquire knowledge of the units of Yuan, 10 cents, and cent in realistic situation, understand their interrelationships.
2. Acquire knowledge of clock and watches, and know 24-hour timing method; experience and know the length of time in combination with one's own life experience (Refer to example 8).
3. Acquire knowledge of year, month, and day, and understand their interrelationships.
4. Feel and acquire knowledge of gram, kilogram, and ton in realistic situation, and can do simple unit conversion.
5. Able to solve simple problems related to familiar quantities that coupled with realistic daily living

(IV) Explore Patterns

Explore simple rules and patterns inherent in given events and objects (Refer to example 9, 10).

II. Figures and Geometry

(I) Knowing Figures

1. Able to identify geometric solids like cuboids, cube, cylinder, and sphere, etc by means of real objects and models.
2. Able to identify simple objects observed from the front, side and the top, based on concrete things, photos, or intuitive maps (Refer to example 11).
3. Able to identify simple figures such as rectangle, square, triangle, parallelogram, circle, etc.
4. Preliminarily recognize properties of rectangle and square by observation or manipulation.
5. Able to use rectangle, square, triangle, parallelogram, or circle to construct diagrams and figures.
6. A knowledge of angles coupled with everyday living situations. Able to distinguish right, acute and obtuse angles.
7. Able to classify simple geometric objects and figures (Refer to example 20).

(II) Measurement

1. Experience and learn the process of measuring lengths of objects with different ways coupled with everyday realities. Experience and learn the importance of unification of measurement units.
2. In practical activities experience, learn, and recognize length unit of kilometre, meter, centimetre; know decimetre, millimetre; can do simple unit conversion, and can choose a length unit properly (Refer to example 12).
3. Able to estimate the lengths of some objects and engage in measuring them.
4. Recognize perimeter with practical examples and can measure perimeters of simple figures. Explore and grasp the perimeter formula of a rectangle and a square.

5. Recognize area coupled with practical examples. Experience, learn and recognize area units: cm^2, dm^2, and m^2, and can do simple unit conversion.
6 Explore and grasp the area formula of rectangle and square; can estimate areas of given simple figures (Refer to example 13).

(III) Figures and their movement.

1. Coupled with practical examples, recognize phenomena of translation, rotation, and axial symmetry (Refer to example 14).
2. Able to identify figures after their translation (Refer to example 15).
3. Preliminarily recognize axis-symmetric figures by observation and manipulation.

(IV) Figures and their position.

1. Able to use up, down, left, right, front and back to describe the relative positions of objects.
2. Able to identify the rest of the 3 directions, while given one of the east, south, west and north direction. Know the 4 directions of north-east, north-west, south-east, south-west. Able to use these phrases to describe the direction of an object location.

III Statistics and probability

1 Able to classify things or data based on given standards or standards of one's own choice. Feel the relations between classification and classification standards (Refer to example 17).
2. Experience and learn the process of simple data collection and description. Understand simple data collection ways like investigation, measurement, etc, and can present results of data using one's own ways (words, graphs, tables, etc) (Refer to example 18).
3. Experience and learn the effect of using data to make expressions and do communications with others by means of simple analysis of data; Feel that data contains information. (Refer to example 19).

IV Synthesis and practice

1 Feel the role and function of mathematics in daily life by means of practical activities. Experience the process of solving simple problems by using acquired knowledge and methods. Gain preliminary experience of mathematics activities.
2. Understand problems to be solved and methods to solve the problems in practical activities.
3. Further understand what have been learned by means of experiencing practical manipulations (Refer to examples 20, 21, and 22).