

# Mathematics for Elementary School

## Grade 4, One-Year Instructional Plan

| 1 <sup>st</sup> Trimester  |   |   |   |
|--|---|---|---|
| Month  | Unit  | # of periods  | Instructional contents  |
| April<br>(15)  | <b>[Volume 1]</b><br><b>1. Large Numbers</b><br>p. 4-14 | <b>9</b>  | <ul style="list-style-type: none"> <li>⊙ Units and size of numbers up to <i>oku</i> (hundred millions) and <i>cho</i> (trillions), and their numeration and decimal system [oku, cho]</li> <li>⊙ Decimal notation system and meaning of decimal notation</li> <li>⊙ Multiplication calculations involving 3-digit numbers as their multipliers [product]</li> <li>○ Multiplication calculations involving a vacant place value in the multiplier, including the case involving 0's at the end of numbers</li> </ul> |
|  | ☆ <b>Review 1</b><br>p. 15                              | <b>(1)</b>  | ○ Reviewing previously learned content  |
|  | <b>2. Angles</b><br>p. 16-24                            | <b>7</b>  | <ul style="list-style-type: none"> <li>⊙ Size of angles formed by rotation</li> <li>⊙ Unit of angle "degree", Unit relationship of one right angle = 90° [degree (°)]</li> <li>⊙ How to measure and draw angles by using a protractor</li> </ul>  |
| May<br>(15)  | <b>3. Division</b><br>p. 25-39                          | <b>15</b>   | <ul style="list-style-type: none"> <li>○ Mental calculation of division by 10s</li> <li>⊙ Division calculation of 2 to 3 digit numbers divided by 2 digit numbers</li> <li>○ A method for checking answers in division calculations</li> <li>○ How to estimate or adjust the quotient</li> <li>○ Division calculation of 3 to 4-digit numbers divided by 2 digit numbers</li> <li>○ Division calculation involving 0's at the end of numbers</li> </ul>   |
|  | ☆ <b>Sports Festival</b><br>p. 40-41                    | <b>(2)</b>  | ○ Problem solving that requires thinking about the difference of two quantities   |
| June<br>(20)   | <b>4. How to Organize Data</b><br>p. 42-47              | <b>4</b>  | <ul style="list-style-type: none"> <li>○ How to create two-dimensional table</li> <li>⊙ Organizing and summarizing data by using a table, without omissions and duplications of data</li> </ul>   |
|  | <b>5. Approximate Numbers</b><br>p. 48-56               | <b>7</b>  | <ul style="list-style-type: none"> <li>○ Meaning of approximate numbers [approximate number]</li> <li>⊙ Meaning and method of rounding [rounding]</li> <li>○ Different ways to express approximate numbers</li> <li>⊙ Addition and subtraction calculations involving approximate numbers [sum, difference]</li> </ul>  |
|  | ☆ <b>Review 2</b><br>p. 57                              | <b>(1)</b>  | ○ Reviewing previously learned content  |
| July<br>(10)   | <b>6. Line Graphs</b><br>p. 58-67                       | <b>7</b>  | <ul style="list-style-type: none"> <li>⊙ How to read and draw line graphs</li> <li>○ How to read line graphs, particularly those that focus on the relationship between two quantities</li> </ul>   |
|  | ☆ <b>Review 3</b><br>p. 68-69                           | <b>(2)</b>  | ○ Retaining and reinforcing the content students learned in the first trimester   |
| <b>Standard # of periods in 1<sup>st</sup> trimester: 60 periods</b> |   | <b>49 periods</b><br>(Adjustable periods (☆): 6 periods)<br>(Optional periods: 5 periods) | <b>Total of 11 periods (6 + 5)</b>  |

| 2 <sup>nd</sup> Trimester |   |              |   |
|---------------------------|---|--------------|---|
| Month                     | Unit  | # of periods | Instructional contents  |
| Sept.<br>(20)             | <b>7. Math Sentences and Calculation</b><br>p. 70-79      | <b>8</b>     | <ul style="list-style-type: none"> <li>⊙ Order of operations where parentheses are used in a math sentence</li> <li>⊙ Order of operations when the four fundamental rules of arithmetic (addition, subtraction, multiplication, division) are mixed together in a math sentence</li> <li>⊙ Distributive law and its application</li> <li>⊙ Relationships between multiplication and division, relationships between addition and subtraction</li> </ul>   |
|                           | <b>8. Quadrilaterals</b><br>p. 80-99                      | <b>14</b>    | <ul style="list-style-type: none"> <li>⊙ Concepts of perpendicular and parallel lines and how to draw them<br/>[perpendicular, parallel]</li> <li>○ Examination of the size of angles formed when a line intersects parallel lines</li> <li>⊙ Concepts and characteristics of trapezoids, parallelograms, and rhombi<br/>[trapezoid, parallelogram, rhombus]</li> <li>○ How to draw a trapezoid, a parallelogram, and a rhombus</li> <li>○ Characteristics of diagonals of various quadrilaterals<br/>[diagonals]</li> <li>○ Relationships of various quadrilaterals</li> </ul> |
| Oct.<br>(20)              | ☆ <b>Tangrams</b><br>p. 100-101                           | <b>(2)</b>   | ○ Understanding orientations of plane figures and the essence of their structures through a hands on activity   |
|                           | ☆ <b>Review 4</b><br>p. 102                               | <b>(1)</b>   | ○ Reviewing previously learned content  |
|                           | <b>[Volume 2]</b><br><b>9. Decimal Numbers</b><br>p. 4-18 | <b>12</b>    | <ul style="list-style-type: none"> <li>⊙ Principles of place value of decimal numbers<br/>[ <math>\frac{1}{100}</math>'s place, <math>\frac{1}{1000}</math>'s place, second decimal place, third decimal place]</li> <li>○ How to read and express decimal numbers on a number line</li> <li>⊙ Structure and relative size of decimal numbers</li> <li>⊙ Addition and subtraction calculations involving decimal numbers</li> </ul>   |
|                           | ☆ <b>The Botanical Garden</b><br>p. 19                    | <b>(1)</b>   | ○ Corresponding and eliminating the common parts of two quantities and grasping the relationship of the quantities in a simpler way   |
| Nov.<br>(20)              | ☆ <b>Using Four 4s</b><br>p. 20-21                        | <b>(2)</b>   | ○ Using four 4s and calculation operation symbols to construct math sentences that have answers from 0 to 9   |
|                           | <b>10. Area</b><br>p. 22-36                               | <b>11</b>    | <ul style="list-style-type: none"> <li>⊙ Concepts of area<br/>[area, formula]</li> <li>○ Units for area “square centimeter, square meter, are, hectare, and square kilometer” and the relationships between those units<br/>[<math>cm^2</math>, <math>m^2</math>, <math>a</math>, <math>ha</math>, <math>km^2</math>]</li> <li>⊙ Formulae for the area of rectangles and squares</li> <li>○ How to find the area of a composite figure</li> </ul>   |
|                           | ☆ <b>Review 5</b><br>p. 37                                | <b>(1)</b>   | ○ Reviewing previously learned content  |

|  |                                  |   |   |
|--|----------------------------------|---|---|
| Dec.<br>(10)   | <b>11. Fractions</b><br>p. 38-51 | <b>11</b>   | <ul style="list-style-type: none"> <li><input checked="" type="radio"/> Concepts and structures of proper fractions, mixed numbers, and improper fractions<br/>[proper fraction, mixed number, improper fraction]</li> <li><input type="radio"/> How to show fractions on a number line, comparison of the size of fractions</li> <li><input type="radio"/> Converting mixed numbers to improper fractions and vice-versa</li> <li><input checked="" type="radio"/> Relationship of equivalent fractions</li> <li><input checked="" type="radio"/> Addition and subtraction calculation of proper fractions with like denominators</li> <li><input type="radio"/> Addition and subtraction calculation of mixed numbers with like denominators</li> </ul> |
|  | ☆ <b>Review 6</b><br>p. 52-53    | <b>(2)</b>  | <ul style="list-style-type: none"> <li><input type="radio"/> Retaining and reinforcing the content the students learned in the second trimester</li> </ul>  |
| <b>Standard # of periods in 2<sup>nd</sup> trimester: 70 periods</b> |                                  | <p><b>56 periods</b><br/>                 (Adjustable periods (☆): 9 periods)<br/>                 (Optional periods: 5 periods) <span style="float: right;">Total of 14 periods (9 + 5)</span></p> |   |

| 3 <sup>rd</sup> Trimester  |   |  |   |
|--|---|--|---|
| Month  | Unit  | # of periods   | Instructional contents  |
| Jan.<br>(15)   | <b>12. Investigating Changes in Quantities</b><br>p. 54-59            | <b>5</b>   | <input type="radio"/> Using □ and △ to express a relationship between two quantities with a math sentence<br><input type="radio"/> Finding all the combinations of corresponding numbers without omissions and examining changes in the quantities  |
|  | <b>13. Multiplication and Division of Decimal Numbers</b><br>p. 60-75 | <b>15</b>  | <input checked="" type="radio"/> Multiplication calculation of decimal numbers multiplied by whole numbers<br><input checked="" type="radio"/> Division calculation of decimal numbers divided by whole numbers<br><input checked="" type="radio"/> Division calculation of decimal numbers or whole numbers divided by whole numbers when you continue to divide (quotients become decimal numbers)<br><input type="radio"/> Expanding the meaning of decimal numbers (decimal numbers can be used to show how many times as much)   |
| Feb.<br>(20)   | ☆ <b>What Kind of Calculation Do We Need to Use?</b><br>p. 76         | <b>(1)</b>   | <input type="radio"/> Decision making involving multiplication or division calculations with decimal numbers  |
|  | ☆ <b>Review 7</b><br>p. 77  | <b>(1)</b>   | <input type="radio"/> Reviewing previously learned content  |
|  | <b>14. Rectangular Prisms and Cubes</b><br>p. 78-89                   | <b>9</b>   | <input checked="" type="radio"/> Concepts and characteristics of rectangular prisms and cubes [face, rectangular prism, cube]<br><input checked="" type="radio"/> Examining the components needed to determine the size of a rectangular prism or cube<br><input type="radio"/> Meaning of sketch [sketch]<br><input type="radio"/> Meaning of net and how to draw it [net]<br><input type="radio"/> Location relationship of edges and faces of a rectangular prism and a cube (perpendicular, parallel)<br><input type="radio"/> How to represent points (or locations) on a plane or a space |
|  | <b>Abacus</b><br>p. 90-91   | <b>2</b>   | <input type="radio"/> Place value of decimal numbers on the abacus<br><input type="radio"/> Addition and subtraction calculations using the abacus  |
| March<br>(10)  | ☆ <b>Town Environment</b><br>p. 92-93                                 | <b>(2)</b>   | <input type="radio"/> Application of previously learned content across different domains<br><input type="radio"/> Mathematical examination of everyday life phenomena (water resources)   |
|  | ☆ <b>4<sup>th</sup> Grade Review</b><br>p. 94-98                      | <b>(5)</b>   | <input type="radio"/> Review of all the content learned in the 4 <sup>th</sup> grade  |
| <b>Standard # of periods in 3<sup>rd</sup> trimester: 45 periods</b> |   | <b>31 periods</b><br>(Adjustable periods (☆): 9 periods)<br>(Optional period: 5 periods) | <b>Total of 14 periods (9 + 5)</b>  |

|   |   |                                      |
|---|---|--------------------------------------|
| <b>Standard # of periods in a year: 175 periods</b> | <b>136 periods*</b><br>(Adjustable periods (☆): 24 periods)<br>(Optional periods: 15 periods) | <b>Total of 39 periods (24 + 15)</b> |
|---|---|--------------------------------------|

Note:

- One period is 45 minutes.
- The numbers indicated in the ( ) in the month column show the number of available periods in the month.
- The ☆ symbol in the unit column indicates the periods teachers can adjust by considering students' state of learning.
- The ⊙ symbol in the instructional contents column indicates important content. The [ ] contains terms and symbols students learn in the unit.