Lesson Guide
In
Elementary Mathematics
Grade 6

Chapter II
Rational Numbers
Decimals

DEPARTMENT OF EDUCATION
BUREAU OF ELEMENTARY EDUCATION
in cooperation with
ATENEO DE MANILA UNIVERSITY

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Lesson Guides in Elementary Mathematics
Grade VI

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I N T R O D U C T I O N

The Lesson Guides in Elementary Mathematics were developed by the Department of Education through the Bureau of Elementary Education in coordination with the Ateneo de Manila University. These resource materials have been purposely prepared to help improve the mathematics instruction in the elementary grades. These provide integration of values and life skills using different teaching strategies for an interactive teaching/learning process. Multiple intelligences techniques like games, puzzles, songs, etc. are also integrated in each lesson; hence, learning Mathematics becomes fun and enjoyable. Furthermore, Higher Order Thinking Skills (HOTS) activities are incorporated in the lessons.

The skills are consistent with the Basic Education Curriculum (BEC)/Philippine Elementary Learning Competencies (PELC). These should be used by the teachers as a guide in their day-to-day teaching plans.
## II. Rational Numbers

### A. Comprehension of Decimals

1. Visualize ones, tenths, hundredths and thousandths
   - **1.1 Name a decimal for a given model (region/blocks, money, number line)**
     - **Humility and kindness**
     - **Modeling**
     - **Group activity**

2. Use different models to show a given decimal (region/block, money, number line)
   - **Humility and kindness**
   - **Modeling**
   - **Group activity**

3. Rename fractions whose denominators are powers of 10 in decimal form
   - **Sharing**
   - **Illustration**
   - **Games, Group activity**

4. Read and write decimals through ten thousandths
   - **3.1 Identify the value/place value of a digit in a given decimal**
     - **Cooperation, alertness**
     - **Drawing picture**
     - **Cooperative learning**

5. Read decimals through ten thousandths
   - **3.2 Read decimals through ten thousandths**
     - **Sportsmanship**
     - **Chart/Activity cards games**
     - **Group activity, Sharing ideas, Speaking**

6. Write decimals through ten thousandths in different notations
   - **3.3 Write decimals through ten thousandths in different notations**
     - **Sportsmanship**
     - **Chart/Activity cards games**
     - **Group activity, Sharing ideas, Speaking**

7. Compare and order decimals through ten thousandths
   - **4. Compare and order decimals through ten thousandths**
     - **Thriftiness and conservation**
     - **Games, Cooperative work, Independent Study**

8. Round decimals through ten thousandths
   - **5. Round decimals through ten thousandths**
     - **Sportsmanship**
     - **Games, Cooperative Learning**
Decimal for a Given Model

I. Learning Objectives

Cognitive: Name the decimal for a given model (region/blocks/money/number line)
Psychomotor: Use different models to show a given decimal
Affective: Show kindness and humility

II. Learning Content

Skill: Naming decimal for a given model
References: BEC PELC B.1.1, 1.2
Materials: grid paper, cubes and blocks, meter stick, coins, playing money (paper bills)
Values: Kindness and humility

III. Learning Experiences

A. Preparatory Activities

1. Drill

   a) Teacher shows the objects as presented below.
   b) Have the pupils identify the number of equal parts the whole is divided.

   1)  
   2)  
   3)  
   4)  
   5)  

2. Review: Naming Game

   Mechanics:
   a) Teacher prepares different illustrations to be presented to the class.
   b) One member of each group will stand at the back.
   c) As the teacher flashes/shows the illustrations, pupils will name the fractional part shaded.
   d) The first to give the correct answer, will take a giant/big step forward.
   e) The first to reach the platform wins the game.
3. **Motivation**
   Problem Opener:
   Tina went to her friend’s house. She took a jeepney in going there. But when she was about to give the fare to the jeepney driver, she found out that she had only ₱4.95, and the fare is ₱5.50.

   **Valuing:**
   Would the jeepney driver accept her money? Why? Why not? If you were Tina, what will you do? Why? If you were the driver, will you accept Tina’s fare? Why? Why not? What trait did Tina/driver show?

B. **Developmental Activities**

1. **Presentation** – Present the lesson through the following:

   **Strategy 1 – Working on Base Method**
   a) Group the class into 4.
   b) Each group will work on every base.
   c) They have to do the tasks asked in every base in a given time.
   d) Groups will work simultaneously.
   e) Each group will present its output.
   BASE 1
   Place coins and paper bills of different denominations on the table.
   Task:
   1) Identify the amount of the following set of coins and paper bills.

   a) 

   b) 

   c) 

   d)
2) Write the total amount of money in each letter.

3) Answer the following:
   a. What do you say in naming orally the amount of money?
   b. When do you say the word "peso/s," "and" and "centavos?"
   c. What separates the number for pesos from the centavos?
   d. Where do you write the number for peso and number for centavo?

BASE 2
Task: Use the blocks or tiny cubes below to answer the following:
   a. name of each model
   b. fractional part taken from the whole unit written in words
   c. fractional part written in symbols
   d. the decimal form of the fractional part shaded

1) a) b) c) d)
Answer the following:

a. What is your basis in naming the model? (shaded part)
b. Find the number of equal parts the whole unit has.
c. Find the number of parts taken from the model.
d. Write the fractional part of the model in words.
e. Write the fractional part of the model in symbols.
f. How do you write the fractional part in decimal form?
BASE 3

1) Using flats and longs, find the following:
   a. Name the shaded part of each model.
   b. Write in words the name of the fractional parts shaded.
   c. Show in symbols the fractional parts shaded.
   d. Write in decimal form the fractional part shaded.

1) [Diagram of shaded parts]

   a)  
   b)  
   c)  
   d)  

2) Answer the following:
   a. How do you find the fractional part of the shaded region? and how do you say it?
   b. How do you write the fractional part in words?
   c. How do you write the fractional part of the shaded region in figures?
   d. How do you separate the number of whole regions shaded and the number of shaded parts having a value less than 1?
   e. How do you write each answer in decimal form?
1) A meter stick to represent a number line is the material for this activity.
   Tasks:
   a. Using a meter stick, relate the following:
      • millimetre to centimetre
      • millimetre to decimetre
      • millimetre to metre

2) Complete the table.

<table>
<thead>
<tr>
<th>Relate the Number of Millimetres to</th>
<th>Name Orally the Fractional Part</th>
<th>Write the Fractional Part in Words</th>
<th>Write the Fractional Part in Symbols</th>
<th>Write the Fractional Part in Another Form (Decimal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) 10 mm to a cm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) 6 mm to a dm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) 60 mm to a dm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) 205 mm to a m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) 8 mm to a m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3) Answer the following:
   a) How do you name the number of millimetres in cm, dm, and m?
   b) What words indicate the fractional part shown by the model?
   c) What symbols can show the fractional part manifested by the model?
   d) How do you write the fractional part of the model in decimal?

2. **Strategy 2 – Group Work**
   1) Each group will be provided with the following:
      a) paper bills and coins
      b) cubes/block
      c) cartolina
      d) meter stick
      e) crayola
   2) Task: (15 minutes only)
      a) Use the given materials to show any decimal expression.
      b) Write the decimal expressions in:
         • figures
         • words
         • fractional form
      c) Have the groups present their work in front. Teacher gives emphasis on the use of the models for decimal expressions.

3. **Generalization**
   How did the models help you in understanding about decimals? Why?

C. **Application**
   Kyle and Sean assisted their mother in washing clothes by fetching water for her.
   Kyle filled \( \frac{3}{8} \) of the drum while Sean was able to fill \( \frac{4}{8} \) of the drum.
   a) What fraction represented the part of the drum they filled with water?
   b) How do you write \( \frac{3}{8} \) in decimal? \( \frac{4}{8} \) in decimal?
   c) Write them in words.
IV. Evaluation

A. Name the following sets of models in decimal form.

1) 

2) 

3) 

4) 

B. Work in pairs
   Make an illustration of decimal expressions using the following models:
   1) cube
   2) number line
   3) money
   4) regions
   5) flats and longs

V. Assignment
   Using the models discussed, illustrate decimal expressions.

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Place Value and Value of a Decimal Number

I. Learning Objectives

Cognitive:  
1. Identify the place value/value of a digit in a given decimal
2. Read and write decimals through ten thousandths
Psychomotor: Write decimals in words and numbers
Affective: Show cooperation and alertness in working by teams

II. Learning Content

Skill: Identifying the place value/value of a digit in a given decimal
Reading and writing decimal through ten thousandths
Reference: BEC PELC II.B.3, 3.1
Materials: charts, place value chart, flash cards
Values: Cooperation, Alertness

III. Learning Experiences

A. Preparatory Activities

1. Drill/Review: Game- Brothers/Sisters, Where Are You?
   - Different cards bearing number phrases, fractions, and decimals will be given to the pupils.
   - Be sure to have the complete set.
   - e.g.
     
     | Three Tenths | Twelve Hundredths |
     |---|---|
     | 3<sup>10</sup> | 12<sup>100</sup> |
     | 0.3 | 0.12 |
   
   - At the signal of “Go” by the teacher, the pupils will go around to find the value of the number phrase/fraction/decimal he/she is holding.
   - The first pupils to find their "brother/sister" win.

2. Motivation
   - When you see 5, what does it mean to you? (5 objects or 5 units)
   - How about 0.5? Do we read it simply as "point 5"?
   - Is there a way of reading it correctly?

B. Developmental Activities

1. Presentation

   a. Activity 1 - Pair Share

   1) Put the boxes containing chips with numbers 0 to 9 in front.
   2) Teacher will ask a question, the group that can answer correctly will be the first to go in front.
   3) He/She should be blind folded while picking a chip.
   4) His/her partner do the following:
a) read the number
b) write the number in symbols and in words
c) identify place value and value

5) A point will be given to the group for every correct answer.
6) The teacher, then, repeats step 2 to 5.
7) The group with the most number of points wins the game.

b. Activity 2 – By Pair

1) The pairs of pupils bring out their big square grid with shaded parts similar to the illustrations below:

   a.)

   b.)

   c.)

   d.) Is 4 tenths equal to 40 hundredths? Why?
2) Each pair of pupils examines the model with equal parts and shaded parts.

3) Task for each group:
   a) Is there a whole unit shaded?
   b) How many parts of the whole are shaded?
   c) Name the fractional part shaded in words and symbols.
   d) Use grids to show a model of the following.

<table>
<thead>
<tr>
<th>Ones</th>
<th>Decimal Point</th>
<th>Tenths 0.1</th>
<th>Hundredths 0.01</th>
<th>Thousandths 0.001</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>.</td>
<td>4</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

4) Have each group answer the following questions:
   a) What digit is in the ones place?
   b) What digit holds the tenths place?
   c) What digit occupies the hundredths place?
   d) What digit is positioned in the thousandths place?
   e) What digit is in the ten thousandths place?
   f) Write the number in words and in figure.

5) Based on the numeral 0.4786, ask the following:
   a) What is the position of zero? When do we use zero?
   b) What digit is in the tenths place and what is its value?
   c) What digit is in the hundredths place and what is its value?
   d) What digit is in the thousandths place and what is its value?
   e) What digit is in the ten thousandths place and what is its value?
6) Have each group present its output.

**Valuing:** Let the pupils evaluate their behavior during the activity.

2. **Fixing Skills**
   a. **Activity 1**
      Write in numerals then identify the place value of each digit.
      Ex. One and three thousand eight hundred forty ten thousandths
      
      \[
      \begin{array}{c|c|c|c|c}
        \text{1 ones} & \text{4 ten thousandths} & \text{8 thousandths} & \text{9 hundredths} & \text{3 tenths} \\
      \end{array}
      \]

      1) one and eight thousand three hundred sixty-seven ten thousandths
      2) one and two thousand three hundred seventy-four ten thousandths
      3) two and three hundred two thousandths

   b. **Activity 2 – “Think Pair Square”**
      Give the value and place value of each digit.
      1) 4397.482
      2) 123.7654
      3) 4.219
      4) 743.2143

   c. **Activity 3 - “Number Heads Together” (Group Work)**
      Read each situation, then answer the questions that follow. The group with the most correct answers wins.
      Group 1 - Read and Do
      1) One metre is equal to 39 37/100 inches.
         (a) Write 39 37/100 as decimals.
         (b) Identify each place value and the value of each digit.
      2) One mile is equal to 1.6093 kilometres.
         (a) Write 1.6093 in words.
         (b) Give the value and place value of each digit.
      3) Rex and Tony are working on a class project. Five tenths of the project has been done. How is five-tenths written in figure?

      Group 2 - Alvin’s score in the long jump event was 3.90 metres. Stephen’s score was 3.91 metres.
      a) Write 3.90 and 3.91 in words
      b) Identify the value of each digit in both decimal numbers.

d. 1. How many hundredths are there in one tenth?
   2. Six Tenths is equal to how many hundredths?
   3. Which is greater 5 tenths or 5 hundredths? How much greater?

3. **Generalization**

How do you read decimal numbers?
How do you read the decimal point?
How do you know the value and place value of each digit in a given decimal?

The value of a digit in a given decimal is the product of that digit holding the decimal place and the value of that position.
C. Application

Men’s gymnastics is divided into compulsory and optional events. In 1984, the United States team members won the gold medal. Their score in the optional events was 296.0391. In the compulsory events they scored 259.3127 points.

1) Read: 296.0391 259.3127
2) Write each decimal in words.
3) Identify the place value of each decimal number.

IV. Evaluation

A. Write the following decimals in words then identify the value and the place value of the underlined digit.

<table>
<thead>
<tr>
<th>Value</th>
<th>Place Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) 3.2741</td>
<td></td>
</tr>
<tr>
<td>2) 43.0018</td>
<td></td>
</tr>
<tr>
<td>3) 135.30</td>
<td></td>
</tr>
<tr>
<td>4) 656.8743</td>
<td></td>
</tr>
<tr>
<td>5) 300.003</td>
<td></td>
</tr>
</tbody>
</table>

B. Write each in symbols, then give the value and place value of the underlined digit.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Value</th>
<th>Place Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Five and three hundred ten thousandths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Twenty-five and two hundred ten thousandths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Fifteen hundredths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) One hundred one and one tenth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Five hundred and three ten thousandths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Ten and ten hundredths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7) Ninety-nine ten thousandths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) One and fifteen ten thousandths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) Fifty-nine and four hundred ninety-eight ten thousandths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10) Eight ten thousandths</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. 1) Copy all decimals that have 2 in the ten thousandths place. Give the value and place value of the digit before the digit in the ten thousandths place.
   a) 6.28
d) 8.2902
b) 0.0028
e) 9.0092
c) 2.4629

2) Copy the decimals that have 5 in the ten thousandths place. Give the value and place value of the digit after the decimal point.
   a) 5.5543
d) 5555
b) 19.5555
e) 3.4835
c) 6.4625
V. Assignment

Follow the directions.
1) Form 5 decimal numbers out of digits 1, 2, 3, 4, 5, 6, 7, 8, and 9.
2) Write each number in words.
3) Identify the value of each digit.

Writing Decimals through Ten Thousandths in Different Notations

I. Learning Objectives

Cognitive: Write decimals through ten thousandths in different notations – standard and expanded notation
Psychomotor: Write decimal numbers clearly and legibly
Affective: Find enjoyment in Mathematics through games

II. Learning Content

Skill: Writing decimals through ten thousandths in different notations – standard and expanded notation
Reference: BEC PELC II.B.3.3
Materials: place value chart, drill boards, charts, cutouts, pictures
Value: Sportsmanship

III. Learning Experiences

A. Preparatory Activities

1. Drill – Relay
   a) The class will be divided into groups of 10.
   b) Each member of the group will be given a card with fractions whose denominators are powers of 10. e.g. \( \frac{5}{10} \), \( \frac{7}{100} \).
   c) When the teacher says “Go,” the pupils in front of the line will go to the board, and fill in a table similar to this.

<table>
<thead>
<tr>
<th>No.</th>
<th>Fraction</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
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<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

d) He then taps the next player to fill in the next number.
e) The teacher then says “Stop” to signal that the game is over.
f) The group with the most number of correct answers wins.
After declaring the winner, ask the pupils if they liked the game. Tell the loser to make good the next time around. Emphasize the spirit of sportsmanship.

2. Review: Pair Share
   a) Provide each group with activity cards.
   b) Task:
      Fill in the missing numbers to complete the expanded notation of the given numbers.
      Ex.:
      \[
      5,392 = (5 \times \_\_\_) + (3 \times \_\_\_) + (9 \times \_\_\_) + (2 \times \_\_\_) \\
      = 5,000 + \_\_\_ + \_\_\_ + \_\_\_
      \]
      \[
      8,979 = (8 \times \_\_\_) + (9 \times \_\_\_) + (7 \times \_\_\_) + (9 \times \_\_\_) \\
      = \_\_\_ + 900 + \_\_\_ + \_\_\_
      \]
   c) Have them report their work.

3. Motivation
   Do you know the amount of air we breath in every activity we engage in?

B. Developmental Activities

1. Presentation
   a. Strategy 1 – Pair Share
      1) Provide each group this activity card.
      
      | Activity     | Amount of Air with Each Breath |
      |--------------|-------------------------------|
      | Resting     | Seventy-five hundredths litres |
      | Light work  | One and sixty-two hundredths litres |
      | Heavy work  | Two and fourteen hundredths litres |
      
      2) Task: (for 5 min only)
      a) Using your place value chart, write the number in its proper position.
      b) Write the number in standard and expanded forms.
      3) Present your work.
      4) Teachers should give emphasis on writing decimals in standard and expanded forms in 2 ways.
         Fractional form:
         \[
         48.8425 = (4 \times \frac{10}{1}) + (8 \times \frac{1}{1}) + (8 \times \frac{1}{10}) + (4 \times \frac{1}{100}) + (2 \times \frac{1}{1000}) \\
         + (5 \times \frac{1}{10000})
         \]
         \[
         48.8425 = (4 \times 10) + (8 \times 1) + (8 \times 0.1) + (4 \times 0.01) + (2 \times 0.001) \\
         (5 \times 0.0001)
         \]
   b. Strategy 2
      1) Post activity cards on the table face down.
      2) The leader of each group will pick an activity card.
      3) The group will do the following:
         a) Write the number in:
            - Standard form
            - Expanded form
               - fractional form
               - exponential form
      Sample:
      - The world’s smallest cut diamond is nine ten thousandths inch in diameter and weighs twelve ten thousandths carat.
- A grain of coarse sand may be as large as eighty three thousandths inch.

<table>
<thead>
<tr>
<th>Standard Form</th>
<th>Expanded Form</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fractional Form</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

b) Each group will present its work.

4) Teacher should give emphasis on the proper way of writing decimals in standard and expanded forms.

2. Fixing Skills
   A. Write the decimal in standard notation.
      1) ninety-three thousandths
      2) seventeen ten thousandths
      3) twenty-nine and nine hundred forty-three ten thousandths
      4) six and five thousand four ten thousandths
      5) three and nine hundred forty-four ten thousandths
   B. Write the decimal in expanded form, exponential or fractional.
      1) 6.5327
      2) 0.0081
      3) 3.1065
      4) 0.0345
      5) 1.0649

3. Generalization
   How do you write decimals in standard form? expanded form?
   What are the 2 ways of writing decimals in expanded notation?

C. Application
   Write the decimal in expanded and exponential forms.
   1) 0.842
   2) 39.476
   3) 851.827
   4) 7.005
   5) 116.305

IV. Evaluation
   A. Write the following decimals in the table provided below:
      1) forty-five thousandths
      2) twenty-five ten thousandths
      3) thirty-four and nine hundred thousandths
      4) seven and three thousand five ten thousandths
      5) five and nine hundred fifty-two ten thousandths

<table>
<thead>
<tr>
<th>No.</th>
<th>Standard Notation</th>
<th>Expanded Form</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fractional Form</td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. Write the following in standard and expanded forms.
1) four and nine tenths
2) thirty-four thousandths
3) twelve and four hundredths
4) fourteen and twenty-seven hundred thousandths
5) one hundred thirty-three ten thousandths

V. Assignment
Write the decimals in standard form.
1) five thousand six hundred thirty-eight ten thousandths
2) twenty-eight and seven thousand two hundred thirteen ten thousandths

Write the decimals in expanded form.
3) 3.5968
4) 325.1927
5) 47.813

Comparing and Ordering Decimals through Ten Thousandths

I. Learning Objectives

Cognitive: Compare and order decimals through ten thousandths
Psychomotor: Arrange decimal numbers
Affective: Show thriftiness/conservation

II. Learning Content

Skill: Compare and order decimals through ten thousandths
Reference: BEC PELC II.B.4
Materials: activity cards
Values: Thriftiness and conservation

III. Learning Experiences

A. Preparatory Activities

1. Drill: Comparing Numbers
   Mechanics: Agawan Panyo
   a) Call a volunteer pupil to hold a handkerchief.
   b) Call pupils from each group to play the game.
   c) As the teacher gives the “Go” signal, the players will grab the handkerchief raised up high by the one holding it.
   d) The first boy to get the handkerchief will pick one activity card, face down, on the table.
   e) He, then, reads the activity card and gives the answer.
   f) If the given answer is correct, their group gets a point.
   g) Another set of players will play following steps c to f.
   h) The group with the most number of correct answer wins the game.
Ex.: 4 265  4 256  5 081  5 018
   3 876  3 867  4 991  4 919

2. Review
   Arranging numbers in ascending or descending order
a) Group the class with 5 members each.

b) Each member of the group will be given cards with numbers.

Ex. Group 1

\[
\begin{array}{cccc}
398 & 3412 & 1290 & 6010 & 998
\end{array}
\]

c) The teacher gives instruction to arrange themselves in ascending order; then descending order.

d) The first group to arrange themselves correctly, wins the game.

3. Motivation

Do you know the density of water at different temperatures?
Do you agree that water is not lost? Why?

B. Developmental Activities

1. Presentation

a. Activity 1 – Pair Share

1) Post the information on the board.

The density of water at:

- \(0^\circ\text{C}\) is about 0.9999 grams per cubic cm
- \(20^\circ\text{C}\) is close to 0.9982 grams per cubic cm
- \(100^\circ\text{C}\) is near to 0.9584 grams per cubic cm

2) Task for each group:

- Which is lesser? 0.9999 or 0.9982?
- 0.9584 or 0.9999?

b) If these decimals are to be arranged from:

- least to greatest, which has the greatest value?
- greatest to least, which has the least value?

c) They may use their place value chart to know exactly the value of the decimal numbers given to them.

d) Have each pair present their output.

e) Teacher may give emphasis on the steps of comparing/ordering decimals.

Valuing: We all know the importance of water in our daily lives, we use it every day. We could last a day without food but not without water.

The amount of water per cubic metre is very expensive nowadays. How can you help your parents lessen the burden of paying big amount for water bills?

b. Activity 2 – Practical Work

1) Have each group prepare the following:

- bond paper
- crayons
- scissors

2) Task:

Let each group do the following:

- Divide the bondpaper into two equal parts.
- Fold both half sheets into 10 equal parts.
- Get your crayon and one of the half sheets.
- Color 6 of the 10 folded parts with red. Name it Sheet R.
- Get the other sheet, color 8 of the 10 folded parts blue. Name it Sheet B.
- Answer the following:
  - What is the fractional part of Sheet R? Write it in decimal.
• What is the fractional part of Sheet B? Write it in decimal.

g) Compare Sheet B and Sheet R.
• Which is greater? lesser?
• What symbols will you use in comparing numbers?

h) Get another sheet of bond paper, cut it into 2 lengthwise.

i) Fold each sheet into 10 equal parts, then color 4 of 10 equal parts.

j) Call them Sheet X and Sheet Y

k) Ask:
• What fractional part of both sheets are colored green? Write it in decimal.
• What can you say about Sheet X and Sheet Y?

l) Arrange Sheet B, R, and X from:
• greatest to least
• least to greatest

m) Have each group present its work to the class.

2. Exercises/Fixing Skills

f) Write <, >, or = on the blank to make the sentence true.

a) 0.1114 _____ 0.2202
b) 0.1090 _____ 0.1009
c) 0.999 _____ 0.1000

d) 4.8934 _____ 4.8943
e) 0.6390 _____ 0.639
f) 0.55 _____ 0.055

d) 4.8934 _____ 4.8943
e) 0.6390 _____ 0.639
f) 0.55 _____ 0.055

2) Write in order from least to greatest.

a) 2.0342, 2.3042, 2.3104
d) 12.9, 12.09, 12.9100, 12.9150
b) 5, 5.012, 5.1, 0.502
e) 6.3942, 6.3924, 6.9342, 6.4269
c) 0.6, 0.6065, 0.6059, 0.6061

3. Generalization

How do you compare decimals?
What are the relation symbols used in comparing decimals?
What are the steps in comparing and ordering decimals?

C. Application

Mother went to the bank with you. While riding the jeepney, you noticed that mother received ₱0.25 change while the one in front of you was given ₱0.50. Whose change was smaller?

You also remembered that mother gave the driver 9 pieces of ₱1.00 while the man in front of you gave 5 pieces of ₱1.00. Who gave a larger amount?

Along the way, you noticed many banks with posters on the glass on loans. Banko Arco offers 25% or 0.25 interest on a housing loan while Banko Balse offers 2.5% or 0.025 on the same loan. Which bank offered a loan with a bigger interest?

You and mother went to Banko Coral. Their poster showed they offer 15% or 0.15 interest on a housing loan. Which bank offered the least percent on interest for a housing loan?

At the bank, Mother deposited a check worth ₱1,236.05. You know you have ₱0.50 in your pocket. Which one is smaller, your money or the centavo part of the check mother deposited?

Why do you think mother deposited that amount in the bank? Discuss the answers.
Why do you think mother took you along with her to the bank? Discuss the answers. Allow free and open giving of opinions.

IV. Evaluation

1) Write >, <, or = to compare.

a) 0.7894 _____ 0.7658
d) 6.4361 _____ 6.4261
b) 0.3937 _____ 0.3198
e) 16.8930 _____ 16.893

c) 0.0120 _____ 0.012
f) 0.7985 _____ 0.7895

2) Order the numbers from least to greatest.
a) 0.9900, 0.0099, 0.999, 0.90   d) 7.635, 7.628, 7.63, 7.625
b) 3.01, 3.001, 3.1, 3.0011    e) 4.349, 4.34, 4.3600, 4.3560
c) 0.123, 0.112, 0.12, 0.121

3) Answer the following:
a) The list below is the memory recall time of 5 personal computers. Which model has the fastest memory recall?

<table>
<thead>
<tr>
<th>Model</th>
<th>Recall Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sterling PC</td>
<td>0.0195 sec</td>
</tr>
<tr>
<td>XQR 2000</td>
<td>0.01936 sec</td>
</tr>
<tr>
<td>Redi-Mate</td>
<td>0.02045 sec</td>
</tr>
<tr>
<td>Vision</td>
<td>0.01897 sec</td>
</tr>
<tr>
<td>Sal 970</td>
<td>0.019 sec</td>
</tr>
</tbody>
</table>

b) Arrange the memory recall time of computers in item a in ascending order.
c) A carpenter uses different sizes of drill bits in boring holes. The sizes are in fractional form and their equivalent decimals. Arrange the decimal equivalent in descending order.

\[
\frac{1}{16} = 0.0625 \quad \frac{1}{4} = 0.25 \\
\frac{1}{8} = 0.125 \quad \frac{5}{16} = 0.3125
\]
d) Which has the smallest decimal equivalent among the drill bits in item c?
e) Which has the greatest decimal equivalent?

V. Assignment

1) Write in order from least to greatest.
   a) 10.1, 10.1001, 10.01, 10.101   d) 31.467, 31.46, 31.468, 31.466
   b) 0.047, 0.4072, 0.47, 0.4710    e) 7.019, 7.017, 7.018, 7.0190
   c) 7.7779, 7.077, 7.977, 7.3099

2) Compare using >, <, or =.
   a) 1.0340 _____ 1.034    d) 12.1202 _____ 12.1220
   b) 0.4897 _____ 0.4987    e) 20.8976 _____ 20.8967
   c) 0.0101 _____ 0.0101

Rounding Decimals through Ten Thousandths

I. Learning Objectives

Cognitive: Round decimals through ten thousandths
Psychomotor: Tabulate data in the chart
Affective: Show sportsmanship

II. Learning Content

Skill: Rounding decimals through ten thousandths
Reference: BEC PELC II.B.5
Materials: activity cards
Value: Sportsmanship
III. Learning Experiences

A. Preparatory Activities

1. Drill
   a) Call 21 volunteer pupils and group them into 3.
   b) Provide each group with number cards from 0 to 5 and a decimal point.
      Ex. 0 . 1 2 3 4 5
   c) Each group will form the number given by the teacher.
      Ex. I am a 5-digit decimal number. My tenths digit is twice my hundredths digit,
      and my one's digit is the sum of my tenths and ten thousandths digit. My
      thousandths digit is a place value holder. (5.4201)
   d) The first group to form the number correctly wins the game.

   Valuing: Who do you think will offer the first handshake after the game?
   Why? If you were the winner/loser in a game, what will you do?
   Why?

2. Review: Relay Game

Identifying place value of underlined digit
Mechanics:
   a) Teacher will prepare decimal number cards with an underlined digit.
   b) As the teacher flashes the card, the first pupil in a row will write his answer on a
      piece of paper as the group’s answer sheet.
   c) He then pass it to his teammate next to him for his answer to the number flashed
      by the teacher.
   d) As soon as the last pupil in a row has written his answer, he then submits their
      answer sheet to the teacher for checking.
   e) The group with the most number of correct answers wins.

3. Motivation

What percent is the molecules of carbon dioxide present in the earth’s atmosphere?

B. Developmental Activities

1. Presentation

   a. Strategy 1 – Pair Share
      1) Provide each pair with activity card like:
         “Of the 100% total molecules present composition of the Earth’s
         atmosphere, only 0.0325 percent is carbon dioxide.”
      2) Ask:
         a) What number is closest to 0.0325? Why? Why not?
         b) What are the other possible numbers closest to 0.0325?
         c) What are the rules in rounding off decimal numbers?

   b. Strategy 2
      1) Provide 5 decimal number cards to each group.
2) Tasks:
   a) List down possible numbers closest to:
      Possible Answers
      1) 5.6824  6, 5.7, 5.68, 5.680, 5.682
      2) 0.6408  0.6, 0.64, 0.641
      3) 2.3942  2, 2.4, 2.39, 2.394
      4) 0.3984  0.4, 0.40, 0.398
      5) 3.0522  3, 3.1, 3.05, 3.052
   b) Give an explanation for your answers.
   c) What are the rules in rounding off numbers?
3) Have each group present their work to the class.

2. Exercises
   Round off 29.8492 to the nearest:
   a) tenths ________  d) thousandths ________
   b) ones ________  e) tens ________
   c) hundredths ________

3. Generalization
   How do you round off decimal numbers?
   What are the rules in rounding off decimal numbers?

C. Application
   Round the following to the nearest ten thousandths.
   1) 85.42998  4) 15.39485
   2) 0.92432  5) 299.83994
   3) 6.00549

IV. Evaluation
   A. Round the following numbers to the place value of the underlined digit.
      1) 6.8497  3) 62.842  5) 0.8943
      2) 2.0825  4) 29.0434  6) 0.4124
   B. Write down possible numbers closest to:
      1) 2.38425  4) 5.2358
      2) 0.56893  5) 0.86302
      3) 2.96425

V. Assignment
   Complete the table.

<table>
<thead>
<tr>
<th>Decimals</th>
<th>Round To</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tenths</td>
</tr>
<tr>
<td>1) 0.89432</td>
<td></td>
</tr>
<tr>
<td>2) 5.09998</td>
<td></td>
</tr>
<tr>
<td>3) 2.96425</td>
<td></td>
</tr>
<tr>
<td>4) 5.2358</td>
<td></td>
</tr>
<tr>
<td>5) 0.86302</td>
<td></td>
</tr>
</tbody>
</table>