Lesson Guide
In
Elementary Mathematics
Grade 6

Chapter IV
Measurement
Meter Reading
Lesson Guides in Elementary Mathematics
Grade VI

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Printed By:

Printwell, Inc.
33 Dansalan St., Mandaluyong City
533-2388

ISBN – 971-92775-5-6
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INTRODUCTION

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.
### MATRIX IN ELEMENTARY MATHEMATICS

**Grade VI**

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<td></td>
<td>Thrift</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Reading and Interpreting Electric Meter

I. Learning Objectives

Cognitive: Read and interpret readings from electric meter
Psychomotor: Record the reading shown by the dials of the electric meter
Affective: Wise use of electricity

II. Learning Content

Skill: Read and interpret electric meter
Reference: BEC PELC IV.C.1.1
Materials: Model electric meter, drawing of the motor
Value: Energy conservation

III. Learning Experiences

A. Preparatory Activities

1. Drill
Mental Computation: Give me a number that is
   a) one more than 9
   b) one more than 99
   c) one more than 999
   What happens to 9 when you add 1?

2. Review
Review on place value and the relationship of each digit to another digit in a given number.

3. Motivation
   Ask the pupils the electrical appliances they have at home. Elicit from them which of these consume the most electricity.
   Ask the pupils how much they pay for their monthly electric bill. Get some reactions.
   How would you help lessen your electric consumption? Why?
   Let pupils form a circle.
   • Let them move clockwise then counterclockwise.
   • Do the activity a few times.

B. Developmental Activities

1. Presentation

   a. Strategy 1 – Group Game

      Materials: Pupils in group
      Mechanics:
      1) Form a group of 10.
      2) Assign a number for every member (0 to 9)
      3) From the right, arrange them this way.

         4 3 2 1

      • Groups 1 and 3 move clockwise
      • Groups 2 and 4 move counterclockwise
4) Let each group do the movement several times.
5) Relate the arrangement to place value and the manner each dial moves and the speed of movement.
6) Make some discussions.

b. Strategy 2 – Whole Class Discussion and Group Work

Materials: Model of an electric meter; activity cards
Mechanics:
1) The teacher shows to the whole class a model of an electric meter and identifies the parts.
2) She illustrates how the dials move.
3) The pupils are asked to read the electric consumption as shown by the dials. This is done several times.
4) Pupils join their learning team. Each team is given an activity card. Each team reports and discussion follows.

c. Strategy 3 – Cooperative Work

Materials: drawing of electric meters, worksheet
Mechanics:
1) Form a group of 4.
2) Give each group a worksheet.
3) A representative publish their work on the board. (Format of Report)

<table>
<thead>
<tr>
<th>Group</th>
<th>Previous Reading</th>
<th>Present Reading</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4) Discussion on the findings on the consumption.
5) Draw from the pupils some observations and reactions on the consumption e.g. lowest, highest, and comparison between or among findings.
6) Let pupils come up with some conclusions.

d. Strategy 4 – Use a Problem Opener/Group Work

Materials: activity cards, compass, ruler
Mechanics:
1) Present a problem:
   Sample Problem: The Matipid family monitors closely their electric consumption. This month, the reading on their dial is 5 634, last month it was 5 554. How many Kwh was used? (Note: You may give the same family but change the readings.)
2) Discussion:
   a) What are given?
   b) How do you find the answer?
   c) What is the answer? (Publish the answers of each group.) Discuss.
   d) What value does the Matipid family show?
   e) Draw the dials as given in the problem.

2. Fixing Skills

Study the table and compute the kwh used.

<table>
<thead>
<tr>
<th>Household</th>
<th>Previous</th>
<th>Present</th>
<th>kwh Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2 150</td>
<td>2 288</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>7 285</td>
<td>7 810</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>4 605</td>
<td>4 938</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>6 214</td>
<td>6 576</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>6 435</td>
<td>6 795</td>
<td></td>
</tr>
</tbody>
</table>
Discussion:
a) Which household consumed the most? the least?
b) Which two household consumed almost the same kwh? What can you say about their bill?
* c) As a member of the household, how can you lower your electric bill?
   Why is it important to use electricity wisely?

3. Generalization
   How do the dials of the electric meter move?
   How do you read the dials of a meter?

C. Application
   A. Draw a dial to show the readings.
      1. 5 035
      2. 5 148
      3. 6 524
      4. 6 614
      5. 7 035
   
      Get the difference of:
      1. 1 and 2
      2. 3 and 4
      3. 4 and 5
      4. 1 and 3
      Which has the greatest difference?
      Which pair will have the biggest bill? Explain.

   B. Read, analyze and solve. (use ₱8.32 per KWH)
      1.) A family of six uses two colored 18" TV sets for an average of 4 hours a day per TV set.
         How much will the family spend for their TV viewing?
      2.) Calculate the cost of electricity consumed in one month by a 120 W 7 cu ft refrigeration if
         the motor is on for 12 hours a day.

IV. Evaluation
   1. Give the reading.
      a) b) _____ kwh _____ kwh

   2. What is the electric consumption?
   3. Draw the dials to show:
      a. 2 356 kwh
      b. 3 562 kwh
      c. 5 623 kwh
      d. 6 325 kwh

V. Assignment
   1. Read your electric meter.
   2. Bring an old electric bill.
I. Learning Objectives

Cognitive: Read and interpret readings from water meter
Psychomotor: Record the readings shown by the water meter
Affective: Use water wisely

II. Learning Content

Skill: Read and interpret the reading from water meter
Reference: BEC PELC IV.C.1.2
Materials: Drawing of water meter, activity cards
Value: Water conservation

III. Learning Experiences

A. Preparatory Activities

1. Drill

Mental Computation
Game: “Name the Parents”
Mechanics:
1) Form 4 groups of equal number.
2) The teacher gives a number.
   Ex.: I am number 8.
   Name my parents by using any of the 4 processes.
3) The teacher gives the condition e.g. – I’ll count 1 to 10 when I reach 10 everybody stops.
   Some pupils acts as observer – as to which group did it fast.
4) The game starts with pupil 1. He writes his answer on the board, gives the chalk to the next child, and goes at the back. This continues until everyone in the group has given his answer.
5) Each combination is checked. The group with the most number of correct answer wins.

2. Review

Use flash cards – Review on Subtraction

3. Motivation

1) Ask how many of the pupils have faucets?
2) Do you think water is important? Explain.
* 3) Can you save water? How?
   Why is it necessary for us to save water?

B. Developmental Activities

1. Presentation

Present the lesson to the class using this activity:

a. Strategy 1 – Whole Class Activity
   Materials: actual water meter (if available), model water meter
   Mechanics:
1) Ask pupils to join their learning team. Each team is provided with model water meter.
2) The teacher guides the pupils to pinpoint the parts.
3) Discussion is made on how the numbers in the dial move.
4) Several examples are given. Pupils read and find the amount of water used.
5) Comparison is made between consumptions.

b. **Strategy 2 – Use a Problem Opener/Group Work**

**Materials:** activity cards

**Mechanics:**
1) Form groups of 4.
2) Give each group an activity card.

**Sample Problem:**

The Masinop family sees it to that they will not run out of budget. One of the things they do is to closely monitor their water consumption. The record shows the reading for 4 months:

<table>
<thead>
<tr>
<th>Month</th>
<th>Meter Reading</th>
<th>m³ consumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>0077.163</td>
<td></td>
</tr>
<tr>
<td>February</td>
<td>0091.256</td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>0102.009</td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>0130.056</td>
<td></td>
</tr>
</tbody>
</table>

**Discussion:**
1) What is the reading for each month?
2) What does the numbers at the left of the point mean? at the right of the point?
3) Find the monthly consumption. (Initial Reading is 0065.0163.)
4) In which month did they consume the most? the least?
5) What is their average monthly consumption?
6) In which month will they pay the most? Explain.
7) What can you do to help lower your water bill?

c. **Strategy 3 – Use of a Table/Group Work**

**Materials:** activity cards, drawing of the dial

**Mechanics:**

Distribute activity cards to each group.

**Sample Activity Card**

<table>
<thead>
<tr>
<th>Household</th>
<th>Meter Reading</th>
<th>Units</th>
<th>Water Consumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0003.947</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>0012.679</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>0009.156</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>0016.056</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>0007.156</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initial Reading is 001.347.

**Discussion:**

a) Complete the table.
b) Which household consumed the most? the least?
c) What is the average monthly consumption of the 5 households?

2. **Fixing Skills**

Complete the table.
### Generalization

How do you read the water meter?  
How do you solve for the monthly consumption?

### Application

Ailyn’s records of her family’s water consumption reads this way: initial reading 0041.395, January 0053.621, February 0065.170, March 0079.896, April 0092.107.  
Answer the questions:  
1) In what month did Ailyn’s family consume the most water?  least water?  
2) What is the average monthly consumption?  
3) From January to April, how many litres of water did they use?  
4) What is the equivalent in cubic metre?

### Evaluation

1. Write the water meter reading in m\(^3\) and L.  
   a) 0000.897  
   b) 0502.768  
   c) 0004.635  
   d) 0021.509  
   e) 0193.321  
2. Find the difference between the lowest reading and the highest reading.  
3. Find the water consumption.  
   1) 43 008 - 34 165 = 42 843  
   2) 82 609 - 82 527 = 82 082  
   3) 4 935 - 4 681 = 254  
   4) 6 826 - 6 789 = 37  
   5) 300 194 - 299 353 = 2417

### Assignment

1. If a leaking faucet wastes about 1 drop of water in 1 second, it will waste approximately 3182.2 L in one year.  
   How many litres of water will be wasted in 6 months?  How many m\(^3\) is this?  
2. Assume that there are 25 leaking faucets, how many m\(^3\) of water will be wasted in 1 year?

### Word Problems on Water Consumption

### I. Learning Objectives

- **Cognitive:** Analyze and solve word problems involving water consumption  
- **Psychomotor:**  
  1. Record the data needed  
  2. Write the equation/number sentence/math sentence  
- **Affective:** Practice wise use of water

### II. Learning Content

- **Skill:** Solve word problems on water consumption  
- **Reference:** BEC PELC III.C.2.1  
- **Materials:** flash cards, worksheets, chart, Show Me Board  
- **Value:** Show thrift and economy in using water

### III. Learning Experiences
A. Preparatory Activities

1. Mental Computation: Name the Pair
   a) Form 4 groups with equal number of members.
   b) The teacher flashes a number. e.g., 16. Give 2 numbers when subtracted gives you 16.
      The teacher gives the signal and the time limit.
   c) Pupil 1 goes to the board, writes his subtraction sentence, then gives the chalk to the
      next pupil. Pupil 1 goes at the back of pupil 10. This procedure goes on until everybody
      has written a subtraction sentence.
   d) Subtraction sentences are checked.
   e) Several numbers are given. The group with the most number of correct answers wins.

2. Review
   a) Check up of assignment.
   b) The teacher flashes cards on finding water consumption. Pupils write their answers on
      their “Show Me Board”.

3. Motivation
   Find out how many pupils brushed their teeth before coming to school. * Find out how
   many used a glass of water to gargle and the one who left the faucet open while brushing his
   teeth. Draw pupil’s reactions. Who used more water? Explain.

B. Developmental Activities

1. Presentation
   a. Activity 1 – Whole Class Activity

      Materials: chart or table

      Mechanics:
      1) Present the table.

      | Month    | Readings | m$^3$ Consumed |
      |----------|----------|----------------|
      |          | Present  | Previous       |               |
      | January  | 2 153    | 2 061          |               |
      | February | 2 150    | 2 123          |               |
      | March    | 2 188    | 2 150          |               |
      | April    | 2 223    | 2 188          |               |
      | May      | 2 259    | 2 223          |               |
      | June     | 2 284    | 2 259          |               |

      2) In what month registered the most amount of water used?
      a) What data do you need to answer the problem?
      b) What must you do to solve for m$^3$ consumed?
      c) Write the formula for finding m$^3$ consumed?
      d) Solve.
      e) State your answer.
3) What is the average monthly consumption as found in the table?
   a) What information are needed to solve the problem?
   b) Is there a hidden question? Identify. How do you find it?
   c) What 2 operations will you need to solve the problem?
   d) Write the equation.
   e) Solve.
   f) The answer is ______.

b. Activity 2 – Group Work
Materials: worksheet
Mechanics:
1) Ask pupils to join their learning team.
2) Give them a worksheet.
Sample Problem:
   Last month, the water meter reading was 1 342 m³. The following month, it was 1 395 m³. If the basic charge of cubic metre is P2.62, how much will one pay?
   Questions to answer:
   a) What are the given data?
   b) What are you going to solve for?
   c) Is there a hidden question? State.
   d) How do you find the answer to the hidden question?
   e) What processes are needed to find the final answer?
   f) Write the number sentence.
   g) Solve.
   h) The answer is ______.

c. Activity 3 – Individual and Group Work
Materials: charts (several problem are written)
Mechanics:
1) Let pupils work individually for a certain period of time. When almost everybody has finished, let them join their learning team to discuss their answers. Ask one pupil to report the answers agreed upon by the group.
2) For the given problems, answer these questions:
   a) What information are needed?
   b) What are you asked to solve for?
   c) Is there a hidden question? Identify.
   d) What operations do you need to find the final answer?
   e) Write the number sentence.
   f) Solve.
   g) The answer is ______.
Sample Problem:
   A swimming pool is 18 m long, 10 m wide, and 1.75 m deep. How much will it cost to fill the pool with water, if a cubic metre costs P2.75.
   Eric kept a record of his family’s water consumption for four months. His records is as follows:
   Initial Reading: 86 912
   1st month: 102 528
   2nd month: 119 687
   3rd month: 132 049
   4th month: 149 160
   a) How many cubic metres of water did they use for 4 months?
   b) What was their average daily consumption? monthly consumption?

2. Fixing Skills
Study the problem carefully and answer the questions that follow.
Margie’s record of their water consumption is as follows:
Initial Reading: 41 395
September: 53 621  
October: 65 170  
November: 79 896  
December: 92 107  

a) On what month did they use most water?  
b) How many litres of water did they use for 4 months. How many cubic metres is this equivalent to?  
c) Solve for the average monthly consumption in cubic metres.  

3. Generalization  

How do you solve word problems involving water consumption.  
What steps do you need to follow in solving a word problem?  

C. Application  

For the given problems, answer the following questions:  
1) What will you solve for?  
2) What are the needed data?  
3) How do you solve the problem?  
4) What is the equation?  
5) Solve.  
6) State the complete answer.  

Problems:  
At the end of December, Maria read the water metre as 481. If the previous reading was 349, how many cubic metres of water was consumed?  

How much water is contained in a bathtub with a radius of 0.5 metre and a height of 0.6 metre?  

IV. Evaluation  

Solve:  
A rectangular swimming pool 8 m long, 7 m wide, and 2 m deep is filled with water.  
a) How many cubic metre is needed to fill it?  
b) The meter reading before the pool was filled was 3804. What was the metre reading after?  
c) Do you think it is a good practice to fill the pool to the brim? Explain.  

V. Assignment  
1) Bring an old water bill. With your friend, examine how your water bill is computed.  
2) Make a commitment on how you can save water.  

Word Problems on Electric Consumption  

I. Learning Objectives  

Cognitive: Analyze and solve word problems involving electric consumption  
Psychomotor: Write the equation/mathematical sentence or number sentence  
Affective: 1. Practice thrift and economy  
2. Wise use of electricity  

II. Learning Content  

Skill: Analyze and solve problems on electric consumption  
Reference: BEC PELC IV.D.2.1  
Materials: activity cards, flash cards, charts
III. Learning Experiences

A. Preparatory Activities

1. Mental Computation
   a) From 300 subtract 152
   b) Take 3 000 from 3 794
   c) Subtract 500 from 1 582
   d) What is left when you take 150 from 400?
   e) How much bigger is 500 than 190?

2. Review
   a) Check up of assignment
   b) Complete the table:

<table>
<thead>
<tr>
<th>Present Reading</th>
<th>Previous Reading</th>
<th>KWH Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 502</td>
<td>2 817</td>
<td></td>
</tr>
<tr>
<td>4 286</td>
<td>3 635</td>
<td></td>
</tr>
<tr>
<td>5 874</td>
<td>4 387</td>
<td></td>
</tr>
<tr>
<td>5 874</td>
<td>397</td>
<td></td>
</tr>
<tr>
<td>6 656</td>
<td>385</td>
<td></td>
</tr>
</tbody>
</table>

3. Motivation
   a) Ask students the electrical appliances they have at home.
   b) Ask pupils which of the appliances use much electricity?
   * c) Elicit from the pupils some of the practices they do to save on electricity.

B. Developmental Activities

1. Presentation
   a. Activity 1 – Use of a Problem Situation
      Materials: chart

      Mechanics:
      Sample Problem
      Chammy went to a hardware to buy electric lights. She asked the seller to allow her to select fluorescent bulbs.
      These are the wattages shown:
      10 watts (W)  40 watts
      20 watts  60 watts
      Her lights are on 8 hours a day. She needs 3 pieces of bulbs. Can you help Chammy decide?
      1) What is the problem of Chammy?
      2) What information will help her decide?
      3) Who will help Chammy find the answer to her problem?
      4) Write the equation?
      5) Solve for the answer.
      6) Guide the pupils to make the decision.
      * 7) Is it a good practice to leave lights on, even when no one needs it? Explain.
      What other practices can you do to save on electricity?

   b. Activity 2 – Study and Interpret a Table/Group Work
      Materials: worksheet
Mechanics:
1) Form groups of 4.
2) Give a worksheet to each group.

Sample of Worksheet
Below is a list of some appliances and their wattage. (Wattage – number of watts needed to operate them for 1 hour)

<table>
<thead>
<tr>
<th>Appliance</th>
<th>Wattage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat iron</td>
<td>1000 W</td>
</tr>
<tr>
<td>Washing Machine</td>
<td>180 W</td>
</tr>
<tr>
<td>Electric Stove</td>
<td>2200 W</td>
</tr>
<tr>
<td>Compact Disc Player</td>
<td>270 W</td>
</tr>
<tr>
<td>Sewing Machine</td>
<td>75 W</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>250 W</td>
</tr>
<tr>
<td>Stand Fan</td>
<td>50 W</td>
</tr>
</tbody>
</table>

a) How many watts is used by a washing machine for 2 hours and 15 minutes? If you use the washing machine 4 times a week, how many kilowatt hour (kwh) is used per week?
1) What facts do you need?
2) What will you solve for in the problem?
3) Write the mathematical sentence.
4) The answer is ________.

b) Give other problems based on the table.

c. Activity 3 – Cooperation Work
Materials: activity cards
Mechanics:
Sample Problem
Jude recorded his family's electric consumption for three months. The initial reading was 27,193 kilowatt per hour (kwh). The next readings were 27,228, 27,310, and 27,416.
1) How many kwh was used each month?
2) What is the average monthly consumption?

Discussion
1) 
   a) What data are needed in question # 1?
   b) What operation will you use?
   c) Write the number sentence.
   d) Solve.
   e) What is the answer?
   f) In which month will Jude's family pay the most? the least? How did each family member help in reducing their bill?

2) 
   a) What facts will you need? Which of the facts do you not need?
   b) Is there a question you need to answer before you get the final answer? Identify.
   c) What processes do you need?
   d) Write the mathematical sentence.
   e) Solve.
   f) The answer is _____.

2. Fixing Skills

For the given problems below, answer the following questions:
 a) What information are needed?
 b) How do you find the answer?
 c) Write the equation.
 d) Show the solution.
e) State the complete answer.
1) How many kilowatt hours will a refrigerator that is 250 watts used for the whole day and a 50 watts stand fan used for 8 hours?
2) Last month, an electric meter read 7835 kwh. This month, the reading is 8328 kwh. If the basic cost of electricity is 3.40 per kwh, how much is the basic bill?

3. Generalization

How do you solve a word problem involving electric consumption?

C. Application

Solve the problems.

Raul’s family made a record of their 4-month electric consumption. The initial reading is 1 679 kwh.

September 1 824
October 1 997
November 2 203
December 2 381

Assuming that the basic charge for the first 50 kwh is ₱0.96 and the succeeding kwh is charged ₱2.395.
1) How much will Raul’s family pay for each month?
2) On what month did they pay the most? the least?
3) What was the average monthly consumption?

IV. Evaluation

1) Last month, my electric meter reading was 43 411 kwh. This month, the reading is 3 619 kwh. How may kwh did I consume?

2) Refer to problem number 1.

The generation charge for electricity is:

first 50 kwh is ₱0.96
next 108 kwh at ₱2.395

The distribution charge is

first 10 kwh at ₱8.00
next 40 kwh at ₱0.80
next 108 at ₱1.07

How much would be my total bill?

3) In a classroom, there are eight 20-watt fluorescent lamps and four 50-watt electric fans operating for 10 hours on a regular school day. How many kwh are consumed each school day? in one school week? How can you help your school as regards electric consumption?

V. Assignment

1) Secure an old electric bill. Study how your electric consumption is computed.
2) Make a commitment on how you can help save electricity at home and in school.
Converting One Unit of Measure to Another

I. Learning Objectives

Cognitive: Convert from one unit to another unit of measurement
Psychomotor: Write the appropriate unit of measure
Affective: Work cooperatively with one’s groupmates

II. Learning Content

Skill: Convert from one unit of measure to another
Reference: BEC PELC IV.D.1
Materials: things to measure, ruler, tape measure, meter stick, some drawings, worksheets
Value: Cooperation

III. Learning Experiences

A. Preparatory Activities

1. Mental Computation Drill: Choosing the Appropriate Unit of Measure
   In each sentence below, the metric unit is incorrect. Give a more appropriate unit of measure:
   a) My sandwich is 4 metres thick.
   b) We drove 25 centimetres to visit my grandmother.
   c) The thickness of my Math book is 3 millimetres.
   d) My little toe is 20 metres long.
   e) There is a tree in front of my house. It is 25 millimetres long.

2. Review
   Answer these:
   1) I am in school for 6 hours. How many minutes am I in school?
   2) We stayed in the province for 4 weeks. How many days were we in the province?
   Fill in the blanks:
   60 seconds = _____ minute
   12 months = _____ year
   _____ decade = 10 year
   72 hours = _____ days
   1 leap year = _____ days

3. Motivation
   A family went shopping one day. A few of the items they bought were: 2 kilograms of chicken, 2 metres of cloth, 10 pieces of notebook and a litre of cooking oil. On their way home, 2 of the children were discussing about the dimensions of the notebook they bought. Child A said, “This notebook is one dm thick.”
   Child B answered, “No, it is only one cm thick.”
   Which of the 2 children is correct?

B. Developmental Activities

1. Presentation
   a. Measuring Real Objects/Whole Class Activity
      Materials: strip of paper, ruler, meter stick
      Mechanics:
      1) Ask each pupil to get a ruler.
2) Guide the pupils to examine the division/sections on their ruler then on a meter stick. Discuss:
How many spaces can you count between 2 numbers (e.g. 0-1 \(\rightarrow\) 10 small spaces.
Introduce the word prefixes used in the metric system as you go along. Hence:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>kilo</td>
<td>1000</td>
</tr>
<tr>
<td>hecto</td>
<td>100</td>
</tr>
<tr>
<td>deca</td>
<td>10</td>
</tr>
<tr>
<td>deci</td>
<td>(\frac{1}{10})</td>
</tr>
<tr>
<td>centi</td>
<td>(\frac{1}{100})</td>
</tr>
<tr>
<td>milli</td>
<td>(\frac{1}{1000})</td>
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</tbody>
</table>

3) Let the children cut a strip of paper equal to 10 cm.
Discuss:
- a) How many millimetres is 1 cm?
- b) How many millimetres is 10 cm?
- c) What other unit of measure represents 10 cm?
Continue until you reach metre. As you move on, let the pupils discover how they change one unit of measure to another.

b. Show the following:

- \(k\) \(h\) \(deca\) \(U\) \(decim\) \(c\) \(m\)

Ex.
- a) 2.8 km = _____ m

Using the chart:

3 jumps to the right from kilo to unit (m), therefore, move the decimal point in the given number 3 times to the right.
Hence: 2.8 km = 2800 m

Ex.
- b) 300 cg = _____ hg

Hence, 300 cg = 0.03 0 0 hg

The number of jumps and direction of the jumps determine how many times and to which direction the decimal point is moved in the given number.
Ask the students to memorize the code:
King Henry Dried Unwashed Dishes Cups Mugs
in order for them to memorize the chart of conversion.

c. Group Work
Materials: Table of Equivalence on Different Metric Measurements, activity cards
Mechanics:
1) Provide each group the table of equivalence.
2) Give them problems like:
   a) A piece of lumber is 9 metres long. How many centimetres is this?
   b) Mother bought 2 kilograms of meat. How many grams is this?
   c) Mely has 3 litres of water. How many millimetres is this?
   d) A group of people who joined the Alay Lakad had walked 5 000 metres. How many kilometres did they cover?
   e) Mother bought 3 000 grams of sugar. How many kilograms of sugar did she buy?
3) Ask a representative from each group to show their solution on the board.
4) Discuss the process. Make them analyze how they converted problems a to c, then d to e.
5) Lead the class to formulate some generalizations.

d. Completing a Table/Cooperative Work
Materials: worksheet
Mechanics:
1) Let pupils join their learning team.
2) Provide each team with a worksheet.
Sample: Worksheet
   a. 7 m = ___ dm
   b. 3 m = ___ cm
   c. 8 km = ___ m
   d. 34 cm = ___ mm
   e. 7864 g = ___ kg
   f. 5 kg = ___ g
   g. 6.5 kg = ___ dg
   h. 58 mg = ___ cg
   i. 85 L = ___ cL
   j. 7250 mL = ___ L

2. Fixing Skills
Complete the table.

<table>
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<th>Decimetre</th>
<th>Centimetre</th>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2)</td>
<td>2 500</td>
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<td></td>
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<tr>
<td>3)</td>
<td></td>
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<table>
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</tr>
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<td>10 000</td>
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<tr>
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<table>
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</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>3)</td>
<td></td>
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<td>7 250</td>
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</tbody>
</table>

3. Generalization
How do you convert a bigger unit to a smaller unit of measure?
How do you convert a smaller unit to a bigger unit?
Solve:
1) The diameter of a drum is 828 mm. What is its equivalent in centimetre? in decimetre?
2) A container is labeled $\frac{1}{2}$ litre. How many millilitre is this?
3) A tablet is labeled 250 milligrams. What part of a gram is this?

C. Application
Mrs. Cruz went to the market one Saturday morning. She bought 3 kg of meat and 3500 grams of vegetables. How many grams was the meat and how many kg was the vegetables?

IV. Evaluation
Fill in the blanks.
1) 20 cm = ______ m = _____ dm = _____ mm
2) 3 000 m = _____ km = _____ dm = _____ cm
3) 5 000 g = _____ kg = _____ dg
4) 9 kg = _____ g
5) 3.8 L = _____ cL = _____ mL

V. Assignment
1) Arrange the following measurements in ascending order:
   a) 8.45 km          b) 84.5 mm          c) 845 m          d) 8 450 000 cm
2) Arrange the following measurements in descending order:
   a) 63.8 cL          b) 637 mL          c) .639 L          d) 6.39 dL