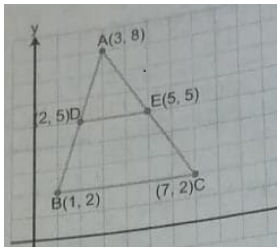
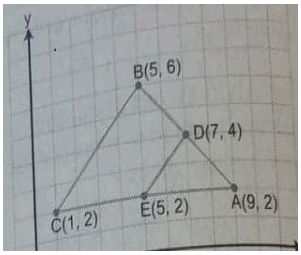
**DAILY LESSON LOG OF M9GE-IIIf-1 (Day Two)**

| | | | |
|---|---|---|---|
| **School** | | **Grade Level** | Grade 9 |
| **Teacher** | | **Learning Area** | Mathematics |
| **Teaching Date and Time** | | **Quarter** | Third |
| **I. OBJECTIVES** | *Objectives must be met over the week and connected to the curriculum standards. To meet the objectives, necessary procedures must be followed and if needed, additional lessons, exercises and remedial activities may be done for developing content knowledge and competencies. These are assessed using Formative Assessment Strategies. Valuing objectives support the learning of content and competencies and enable children to find significance and joy in learning the lessons. Weekly objectives shall be derived from the curriculum guides.* | | |
| **A. Content Standards** | The learner demonstrates understanding of key concepts of parallelograms and triangle similarity. | | |
| **B. Performance Standards** | The learner is able to investigate, analyze, and solve problems involving parallelograms and triangle similarity through appropriate and accurate representation. | | |
| **C. Learning Competencies/ Objectives** | Learning Competency: Applies the fundamental theorems of proportionality to solve problems involving proportions. **(M9GE-IIIf-1)**<br>Learning Objectives:<br>1. Use the distance formula in solving for the measures of the given segments.<br>2. Apply the basic proportionality theorem in solving for the unknown lengths of a triangle.<br>3. Display cooperation in the given activity on the basic proportionality theorem. | | |
| **II. CONTENT** | Applying the fundamental theorems of proportionality to solve problems involving proportions | | |
| **III. LEARNING RESOURCES** | | | |
| **A. References** | | | |
| **1. Teacher's Guide** | Pages ??? | | |
| **2. Learner's Materials** | Pages 362-368 | | |
| **3. Textbook pages** | e-math 9 pages 328-330 | | |
| **4. Additional Materials from Learning Resource (LR) portal** | | | |
| **B. Other Learning Resources** | | | |
| **IV. PROCEDURES** | *These steps should be done across the week. Spread out the activities appropriately so that pupils/students will learn well. Always be guided by demonstration of learning by the pupils/ students which you can infer from formative assessment activities. Sustain learning systematically by providing pupils/students with multiple ways to learn new things, practice the learning, question their learning processes, and draw conclusions about what they learned in relation to their life experiences and previous knowledge. Indicate the time allotment for each step.* | | |
| **A. Review previous lesson or presenting the new lesson** | The teacher with the students recalls the different properties of proportion.<br><br>What are the properties of proportion?<br><br>Answer:<br><br>Cross-multiplication Property<br>Alternation Property<br>Inverse Property | | |

<table>
<tr><td></td><td>Addition Property<br>Subtraction Property</td></tr>
<tr><td>B. Establishing a purpose for the lesson</td><td>The teacher lets the students realize that familiarizing the properties of proportion is essential in solving problems involving proportions.</td></tr>
<tr><td>C. Presenting examples/ instances of the new lesson</td><td>The teacher divides the class into 4 groups and will be asked to do the activity below. Groups 1 and 3 will use triangle A and groups 2 and 4 will use triangle B<br>In each triangle ABC, DE ∥ BC.<br><br>A<br> 

<br>B<br> 

<br><br>1. Complete the table. Use the distance formula (Recall: Distance Formula = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ to calculate the indicated measurements.
<table>
<tr><td>Triangle</td><td>AD</td><td>BD</td><td>AE</td><td>CE</td><td>$\frac{AD}{BD}$</td><td>$\frac{AE}{CE}$</td></tr>
<tr><td>A</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>B</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
2. What do you observe about the ratios of the lengths of the segments that have been cut by the parallel line? (See the last two columns: $\frac{AD}{BD}$ and $\frac{AE}{CE}$.)<br>3. Complete: If a line parallel to one side of a triangle passes through the other two sides, then it divides the other two sides _____.</td></tr>
<tr><td>D. Discussing new concepts and practicing new skills #1</td><td>The teacher discusses with the students the process of arriving at the answer to the activity.<br>Answer Key:<br>1. Complete the table. Use the distance formula (Recall: Distance Formula = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ to calculate the indicated measurements.
<table>
<tr><td>Triangle</td><td>AD</td><td>BD</td><td>AE</td><td>CE</td><td>$\frac{AD}{BD}$</td><td>$\frac{AE}{CE}$</td></tr>
<tr><td>A</td><td>$\sqrt{10}$</td><td>$\sqrt{10}$</td><td>$\sqrt{13}$</td><td>$\sqrt{13}$</td><td>1</td><td>1</td></tr>
<tr><td>C</td><td>$2\sqrt{2}$</td><td>$2\sqrt{2}$</td><td>4</td><td>4</td><td>1</td><td>1</td></tr>
</table>
2. The ratios of the lengths of the segments that have been cut by the parallel lines are equal.<br>3. into two proportional segments</td></tr>
<tr><td>E. Discussing new concepts and practicing new skills #2</td><td>The teacher emphasizes that the activity earlier suggests the first theorem on proportional segments which is the basic proportionality theorem.<br>Basic Proportionality Theorem</td></tr>
</table>

If a line parallel to one side of a triangle intersects the other two sides in distinct points, then it cuts off segments which are proportional to these sides.

Illustrative Example:

In ΔPQR, AB ‖ QR. If QA = 32, PA = 16, and BR = 20, find PB.

Solution:

The following are the proportions that can be that can be derived from the given figure:

The following are the proportions that can be derived from the given figure:

1. $\frac{PA}{QA} = \frac{PB}{BR}$
2. $\frac{PA}{PQ} = \frac{PB}{PR}$
3. $\frac{PB}{PR} = \frac{AB}{QR}$
4. $\frac{PA}{PQ} = \frac{AB}{QR}$

The best proportion is proportion is 1:

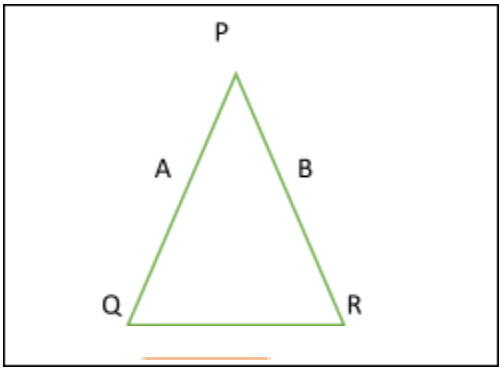
$\frac{PA}{QA} = \frac{PB}{BR}$

$\frac{16}{32} = \frac{PB}{20}$

*32x = 320*

*x = 10*

*Therefore, PB = 10.*




In ΔEGT, RA ‖ GT, EG = 12, ER = 4, RA = 6, and ET = 24, find *EA:*

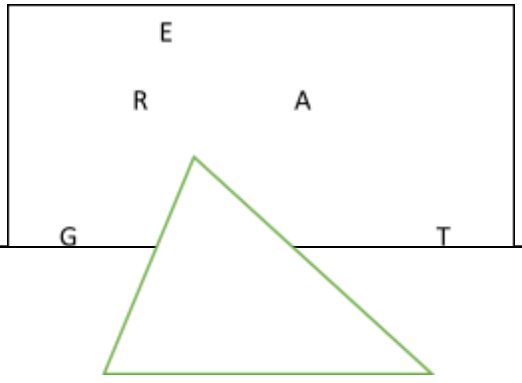
Solution:

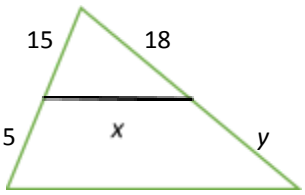
$\frac{ER}{EG} = \frac{EA}{ET}$

$\frac{4}{12} = \frac{EA}{24}$

$\frac{4(24)}{12} = EA$

*EA = 8*



| | |
|---|---|
| **F. Developing mastery (leads to formative assessment 3)** | Working in pairs, the teacher lets the students answer the following activity.<br>Using the same triangle above, find GT.<br>Solution:<br>$\frac{ER}{EG} = \frac{RA}{GT}$<br>$\frac{4}{12} = \frac{6}{GT}$<br>$GT = \frac{12(6)}{4}$<br>$GT = 18$ |
| **G. Finding practical applications of concepts and skills in daily living** | |
| **H. Making generalizations and abstractions about the lesson** | The teacher summarizes the mathematical skills or principles used to solve problems involving proportions by asking the following questions:<br>1. What does the line segment (which is parallel to the third side of a triangle and which intersects the other two sides of the triangle) do to the sides of the triangle it intersects?<br><br>Answer:<br>It cuts the side into two proportional segments. |
| **I. Evaluating Learning** | The teacher lets the students individually answer the formative assessment given in the activity below.<br>Find x and y.<br>  <br><br>Answer:<br>x = 15.75<br>y = 6 |
| **J. Additional activities or remediation** | |
| **V. REMARKS** | |
| **VI. REFLECTION** | *Reflect on your teaching and assess yourself as a teacher. Think about your students' progress. What works? What else needs to be done to help the pupils/students learn? Identify what help your instructional supervisors can provide for you so when you meet them, you can ask them relevant questions.* |
| A. No. of learners who earned 80% of the evaluation | |
| B. No. of learners who require additional activities for remediation who scored below 80% | |
| C. Did the remedial lesson work? No. of learners who have caught up with the lesson. | |
| D. No. of learners who continue to require remediation | |

| | |
|---|---|
| E. Which of my teaching strategies worked well? Why did these work? | |
| F. What difficulties did I encounter which my principal or supervisor can help me solve? | |
| G. What innovation or localized materials did I use/ discover which I wish to share with other teachers | |

Prepared by:

**JAIME P. RUELAN**, Ed. D.
EPS in MATH