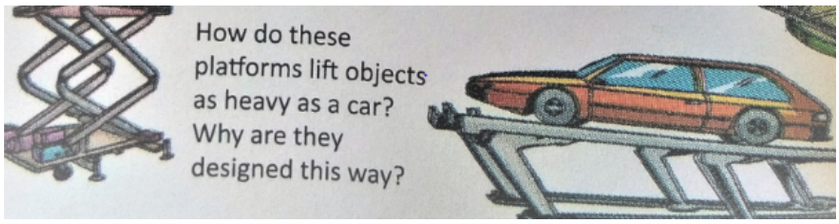
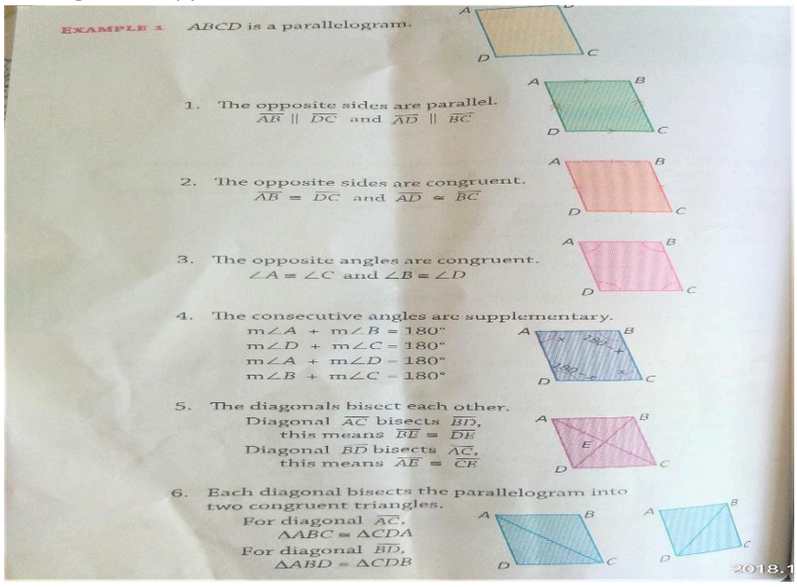
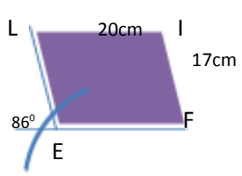
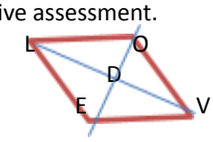
School		**Grade Level**	Grade 9
Teacher		**Learning Area**	Mathematics
Teaching Date and Time		**Quarter**	Third

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 quadrilaterals (parallelogram, trapezoid, kites) and triangle similarity.
B. Performance Standards	The learner is able to investigate, analyze and solve problems involving quadrilaterals (parallelogram, trapezoid, kites) and triangle similarity through appropriate and accurate representation.
C. Learning Competencies/ Objectives	Learning Competency: Uses properties to find the measure of angles, sides and other quantities involving parallelograms **(M9AL-GE-IIIb-1)** Learning Objectives: 1. Use properties of parallelogram to find the measure of angles, sides and other quantities involving parallelograms. 2. Solve for the unknown values in finding the measure of angles, sides and other quantities involving parallelograms. 3. Show appreciation on the uses of parallelograms in everyday life.
II. CONTENT	**Using Properties to find the Measures of Angles, Sides and other quantities involving parallelograms.**
III. LEARNING RESOURCES	
A. Content Standards	
1. Teacher's Guide pages	p.212-222
2. Learner's Materials pages	p.305-325
3. Textbook pages	Empowering Math 9 p.212-251, grade 9 Mathematics Patterns and Practicalities p.364-367
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 asks the students to examine the following objects. What do they have in common? 

	Possible Answers: Both are platforms and its forms are parallelogram. There are lines, angles and a parallel lines.
B. Establishing a purpose for the lesson	The teacher lets the students realize that their knowledge of congruent triangles, parallel lines, and angles are certainly needed in the study of the properties of parallelogram can be used in finding the measures of angles sides and other properties involving parallelogram and it very useful in everyday life.
C. Presenting examples/ instances of the new lesson	The teacher presents the properties of parallelogram and its uses in finding the measure of angles, sides and other quantities involving parallelogram. Each group will be given a copy. 
D. Discussing new concepts and practicing new skills #1	The teacher discusses and illustrates thoroughly to the students the process of using the properties in finding its measures. The teacher lets the students to use the properties to solve parallelogram. He/She calls a student for board work activity. 1.LE=____ $m\angle LEF$ = ___ $m\angle I$ = ____ EF=____ $m\angle L$ = ___ $m\angle F$ = ____ 
E. Discussing new concepts and practicing new skills #2	The teacher lets the students to discuss the given activity by using the properties of parallelogram. Answer Key: LE=IF=17 cm $m\angle LEF$= 180^0-86^0=94^0 EF=LI=20cm $m\angle L$=180^0- $m\angle LEF$ =86^0 $m\angle F$ =$m\angle L$ = 86^0
F. Developing mastery (leads to formative assessment 3)	
G. Finding practical applications of concepts and skills in daily living	
H. Making generalizations and	The teacher summarizes the properties of parallelogram in finding the measures of angles, sides and other quantities involving parallelogram. PROPERTIES OF PARALLELOGRAM:

abstractions about the lesson	● Opposite side of a parallelogram are parallel (definition of parallelogram). ● Opposite angles of a parallelogram are congruent. ● Opposite side of a parallelogram are congruent. ● The diagonal of a parallelogram bisect each other. ● Each diagonal divides a parallelogram into to congruent triangles.
I. Evaluating Learning	The teacher lets the students answer individually the formative assessment. Quadrilateral LOVE is a parallelogram.  If m∠LEV=140^0, find; a. m∠OLE = b. m∠LOV= c. m∠OVE= Answer key: a. m∠OLE =40^0 b. m∠LOV=140^0 c. m∠OVE= 40^0
J. Additional activities or remediation	Study the properties of Paralleogram
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	

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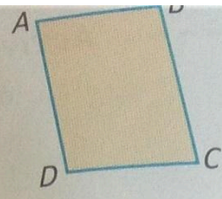
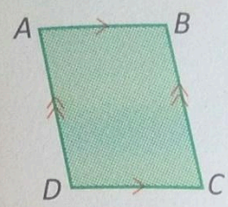
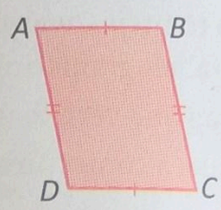
EXAMPLE 1 *ABCD* is a parallelogram.



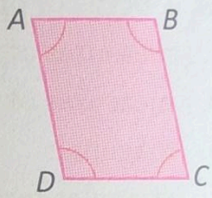
1. The opposite sides are parallel.
   $\overline{AB} \parallel \overline{DC}$ and $\overline{AD} \parallel \overline{BC}$



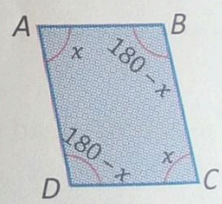
2. The opposite sides are congruent.
   $\overline{AB} \cong \overline{DC}$ and $\overline{AD} \cong \overline{BC}$



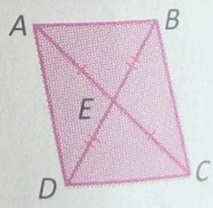
3. The opposite angles are congruent.
   $\angle A \cong \angle C$ and $\angle B \cong \angle D$



4. The consecutive angles are supplementary.
   $m\angle A + m\angle B = 180°$
   $m\angle D + m\angle C = 180°$
   $m\angle A + m\angle D = 180°$
   $m\angle B + m\angle C = 180°$



5. The diagonals bisect each other.
   Diagonal $\overline{AC}$ bisects $\overline{BD}$,
   this means $\overline{BE} \cong \overline{DE}$
   Diagonal $\overline{BD}$ bisects $\overline{AC}$,
   this means $\overline{AE} \cong \overline{CE}$



6. Each diagonal bisects the parallelogram into two congruent triangles.
   For diagonal $\overline{AC}$,
   $\Delta ABC \cong \Delta CDA$
   For diagonal $\overline{BD}$,
   $\Delta ABD = \Delta CDB$