(A) Lesson Context

BIG PICTURE of this UNIT:	• mastery with algebraic skills to be used in our work with co-ordinate geometry (midpoint, length, slope) • understanding various geometric properties of quadrilaterals & triangles • how do you really prove that something is "true"?		
CONTEXT of this LESSON:	Where we've been You know how to find a midpoint, a length & slope and how to work with Geogebra	Where we are Using length, slope & midpoint in verifying properties of geometric figures	Where we are heading How can I prove various geometric properties of quadrilaterals and triangles?

(B) Lesson Objectives:

a. Use dynamic geometry programs (geogebra) to verifying properties of quadrilaterals & triangles
b. Use dynamic geometry programs (geogebra) as a tool to decide on what needs to be proven and how to then plan an algebraic approach to verify the property in question
c. Use algebraic methods to verifying properties of quadrilaterals & triangles

(C) Teacher Led Example ➔ How to Organize & Present a "Proof"

Show that the mid-segments of the quadrilateral with vertices at P(-7,9), Q(9,11), R(9,-1) and S(1,-11) form a parallelogram

Key Steps to be demonstrated:

1. Set up the diagram on Geogebra
2. Research unknown concepts (what is a midsegment?)
3. Use Geogebra to generate "relevant information"
4. We will use this "relevant info" to help us to "show" what we are required to show
5. Organize & present an algebraic method for the "generation of info" & how to use the info to help us "show"
6. Present complete solution to class via poster & presentation &video

(D) Ex 2: Teacher Guided Example ➔ How to Organize & Present a "Proof"

Q1: Show that the diagonals of the quadrilateral with vertices at A(-6,4), B(-2,6), C(1,0) and D(-3,-2) are equal in length.
Q6: Make a conjecture about the type of quadrilateral. Use analytical geometry to explain why your conjecture is either true or false.

Key Steps to be demonstrated:

1. Set up the diagram on Geogebra
2. Research unknown concepts (what is a diagonal?)
3. Use Geogebra to generate "relevant information"
4. We will use this "relevant info" to help us to "show" what we are required to show
5. Organize & present an algebraic method for the "generation of info" & how to use the info to help us "show"
6. Present complete solution to class via poster & presentation &video

(E) Student Practice

Complete Q2&7, then Q3 & 4

(F) Homework/Resources

Nelson 10 Chap 2.5 – Verifying Properties of Geometric Figures, p109-110, Q8,9,14