Lesson Title:	Studying special segments in Triangles
Length of Lesson	1 Days
Created By	Michael Andre Hamilton
Subject	Geometry
Grade Level	10^{th}-12^{th} grade
State Standards	Geometry 2a
DOK Level	DOK 2
DOK Application	Graph, Compare, Estimate Infer, Predict, Interpret, Make Observation, Summarize
National Standards	Geometry for 9 – 12^{th} Math Standards
Graduate Research Element	Human Factors and Work Physiology

Student Learning Goal:

National Standards for Geometry for 9-12^{th}

A: analyze properties and determine attributes of two- and three-dimensional objects;
B: explore relationships (including congruence and similarity) among classes of two- and three-dimensional geometric objects, make and test conjectures about them, and solve problems involving them;
C: establish the validity of geometric conjectures using deduction, prove theorems, and critique arguments made by others;
D: use trigonometric relationships to determine lengths and angle measures.

State Standards for 9 – 12^{th} Geometry

A: Apply problem solving skills to solve and verify the solutions for unknown measures in similar polygons.

Materials Needed (supplies, hand-outs, resources):

- color tape
- Pencil
- Protractor

Lesson Performance Task/Assessment:

- The objective of this study is the evaluate special segments in triangles

Lesson Relevance to Performance Task and Students:

The relevance of this lesson is to show the students how to identify the altitude and median segments of a triangle.

Anticipatory Set/Capture Interest:

At the beginning of class, we will talk about the different triangle that they know such as acute, right, obtuse, and etc… triangles and they different features.

Guided Practice:

The students will construct a triangle with three perpendicular bisectors. The students will then construct another triangle with three angle bisectors.

The altitude of a triangle is the perpendicular segment from a vertex to the line containing the opposite side. After explaining the definition, get them to construct a triangle with a vertex that is perpendicular to the line containing the side opposite of the vertex. Next, construct the altitudes from the other two vertices

The median of the triangle segment is the midpoint of a side and the opposite vertex. Find the midpoint of one side and then add the median in the middle

Independent Practice:

The students and the instructor will work together during this process.

Remediation and/or Enrichment:

Remediation

Individual IEP; partner help throughout lesson; shorten parts of assignment; focus on few process

Enrichment:

None

Check(s) for Understanding:

Day 1:

1. What property do the perpendicular bisectors, angle bisectors, altitudes, and medians have in common?
2. After manipulating the triangles, do the properties still hold true?

Closure:

Have an end of the class discussion

Possible Alternate Subject Integrations:

*None.

Teacher Notes: