Lesson Title:	Measuring Body Angles
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):

- Paper
- Inclinometer (Research Tool)
- Pencil

Lesson Performance Task/Assessment:

- The students will understand how range of motion is taken in a research environment.

Lesson Relevance to Performance Task and Students:

The relevance of this lesson is to show that there is a lot of geometry in the body and it has its limitations. To find the limitations, we use inclinometers to track the range of motion of the different body parts.

Anticipatory Set/Capture Interest:

At the beginning of class, I plan to talk about different Pro players and sports and their range of motion capability to perform each sport. Afterwards, we would talk about how much range of motion is needed to perform well. Afterwards, I would discuss the way range of motion is taking in a research environment to understand the differences individuals range of motion.

Guided Practice:

In each class, I will pick three students to demonstrate the range of motion experiment. I was showed them how to place the inclinometer's on the neck, elbow, and Knees. I would take three measurements of each body part and calculate some descriptive statistics to show the difference between the individuals. If time is still available, I will allow a student to collect an inclinometer measurement on me to give them the opportunity to used the tool.

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 were the differences in range of motions between student A and student B?
2. Is it possible to have a limited range of motion?

Closure:
Have an end of the class discussion

Possible Alternate Subject Integrations:
*None.

Teacher Notes: