Lesson Title:	The Best Throw
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):

Rulers, rubber bands, protractors, measuring tape Inspiring Minds;

Lesson Performance Task/Assessment:

The students will use angles and degree to launch rubber bands the farthest

Lesson Relevance to Performance Task and Students:

The relevance of this lesson is to get the student to identify what angles and degree are the best to throw a rubber band

Anticipatory Set/Capture Interest:

At the beginning of class, I will ask show the class different types of catapults and talk about the concept of how they work. I will ask them who think they can catapult an object the farthest and excite them about the activity

Guided Practice:

First, the student should be placed in groups of two. The steps are listed below

1. Stretch a rubber band from the end of a ruler to one of the marks on the ruler (your teacher will tell you how far to stretch it).
2. Set the ruler at an angle 15° off the ground, pointing the end with the rubber band into the air.
3. Let the rubber band go and measure how far it travels.
4. Do steps 1 – 3 for at least 10 more angles in the range of 15°to 75°. Record the data in a chart.
5. Make a graph showing your data

Independent Practice:

After the instructor show them how to do it the first time. The student will continue step 4 on their own until they find the best angle to launch the rubber band

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 was the best launch angle?
2. What was the worse launch angle?
3. How do you think you can improve your distance if you had a second chance to do the experiment?

Closure:
Have a end of the class discussion about how to improve the distance of the rubber band

Possible Alternate Subject Integrations:
*None.

Teacher Notes: