Lesson Title:	Mathematics in Robotics
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):

- None

Lesson Performance Task/Assessment:

- The objective of this study is the to give the students insight on how mathematics is used in robotics and programming

Lesson Relevance to Performance Task and Students:

The relevance of this lesson is to show the students how to use the theorems and formulas used in class to a real world problem

Anticipatory Set/Capture Interest:

At the beginning of class, we will watch video of different robotic such as automotive and machinery robotic performing different tasks

Guided Practice:

The Students listen to a presentation about how robotics work (it attached in the folder) and guide them in creating simple code to create their initials in robotic language

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 does M03 means to the lathe robot?
2. What ways you think robots are useful in daily life?
3. Is it good to use robots for all tasks?

Closure:
Have an end of the class discussion

Possible Alternate Subject Integrations:
*None.

Teacher Notes: