06 Engineering Logs

Content Area: **Technology**
Course(s):
Time Period: **Full Year**
Length: **2 Weeks**
Status: **Published**

General Overview, Course Description or Course Philosophy

This full year honors course continues to emphasize the application of integrated STEM (Science, Technology, Engineering and Mathematics) principles and the design method to invent solutions to real world problems through robotic applications. Students will identify problems, research, design and fabricate solutions. Problem solving, critical thinking and design skills are taught through a variety of activities. Hands-on themes include structural and robotic systems, as well as system control technology. This course provides all students with valuable skills such as: problem solving, design, creative thinking, systems thinking, team work, documentation, programming and computer applications.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Students will understand how to create and share an Engineering Log in Google Slides, how to properly document daily work, and how to properly format an Engineering Log.

CONTENT AREA STANDARDS

TECH.8.1.12.A.2	Produce and edit a multi-page digital document for a commercial or professional audience and present it to peers and/or professionals in that related area for review.
TECH.8.2.12.D.3	Determine and use the appropriate resources (e.g., CNC (Computer Numerical Control) equipment, 3D printers, CAD software) in the design, development and creation of a technological product or system.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

LA.W.11-12.6	Use technology, including the Internet, to produce, share, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP11	Use technology to enhance productivity.

STUDENT LEARNING TARGETS

Declarative Knowledge

Students will understand that:

- Only technical information should be included in the engineering log.
- Google Slides should be formatted and appropriately used to create a shared log.
- Porper formatting techniques must be utilized.

Procedural Knowledge

Students will be able to:

- Generate a shared Google Slide Engineering Log.
- Properly format a daily log with accurate data and images/graphics.

EVIDENCE OF LEARNING

Formative Assessments

- Observation of log setup/sharing with teacher.
- Mechanical advantage in gears project log.

Summative Assessments

- Rover Final Log.
- Hydraulic Arm Final Log.

RESOURCES (Instructional, Supplemental, Intervention Materials)

- Teacher notes on Engineering Logs.

- Former student log examples.
- Panasonic Challenge Engineering Log notes and examples.

INTERDISCIPLINARY CONNECTIONS

- Language Arts: Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence, as well as produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.