Robotics 3 - Unit 4

Content Area: **21st Century Life & Careers**
Course(s): **Engineering Robotics 3**
Time Period: **Generic Time Period**
Length: **5 weeks**
Status: **Published**

Unit Introduction

This advanced unit will have students creating an innovation to solve an existing problem within the school. Working in groups of 2, students will utilize the Engineering Design Process and the Arduino Uno to create an innovation. Students will also consult existing Laws and Patents to determine validity and legality of their designs.

Standards

9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC-CST.5	Apply practices and procedures required to maintain jobsite safety.
9.3.12.AC-CST.6	Manage relationships with internal and external parties to successfully complete construction projects.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
SCI.HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
TECH.8.2.12.C.5	Create scaled engineering drawings of products both manually and digitally with materials and measurements labeled.

Essential Questions

How to identify a need vs. want?

Why is a sensor useful within a robotic system?

How can automation improve the effectiveness/efficiency of a design?

What is the difference between patent and patent pending?

How to apply/utilize proper research?

Content / Skills

Sensors

Actuators

Coding

Automation

Signal Based Communication

Information Recording and Encoding

Patent Law

Research

3D Design

Fabrication

Augmentation