A Unit 08: Mechanical Power Transmission

Content Area: **Science**
Course(s): **Robotics A**
Time Period: **Marking Period 1**
Length: **3**
Status: **Published**

Standards

SCI.9-12.HS-ETS1-1	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
SCI.9-12.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.
SCI.9-12.HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

Enduring Understandings

- Movement within a mecahical system is a calculated process.
- Changes within a mechanical system can have a direct effect on the consistency of another aspect of the design.
- Many options may exist that will solve a problem, but more often than not, the solution that requires the fewest moving parts will be the most successful.

Essential Questions

1. How do the different types of gears provide an advantage in your design?
2. How do the mathematical calculations help you to determine what type of gear ratio is needed in your design?

Resources

- Unit Guide
- Paper
- Pencils
- Rulers
- Internet Access
- Dictionaries
- VEX Robotics Kit

- Computers with Autodesk Inventor
- Storage containers
- Online Resources