

# A Unit 07: Speed, Power, Torque & DC Motors

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

## Standards

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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.
SCI.9-12.HS-PS2-2	Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

## Enduring Understandings

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- The engineering process we use in the real world for solving problems will often combine the application of both practical and scientific information.
- Comprehension of STEAM concepts will be required in the engineering process when attempting to predict the outcome of an applied design.

## Essential Questions

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1. Why would you want to increase your speed and lower your power?
2. Why would you want to increase your power and lower your speed?
3. How does the change in the load affect your current draw?

## Resources

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- Unit Guide
- Paper
- Pencils with erasers
- Rulers
- Internet Access
- Dictionaries

- VEX Robotics Kit
- Computers with Autodesk Inventor
- Storage containers
- Online Resources
- Engineering Notebooks
- Protractor
- Compass