

# A Unit 11: Systems Integration

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.

## Enduring Understandings

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- Multiple systems developed to solve a complex problem must be designed to work together.
- One system failing in a multi-system design will normally result in a failure of the entire design.
- Modular systems are very effective for components of a design that will often need replacement.

## Essential Questions

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1. How does the process of system engineering allow for the development of a well- integrated structure?
2. How does the integration of system engineering early in the design process provide benefits to the overall design?

## Resources

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- Unit Guide
- Paper
- Pencils
- Rulers
- Internet Access
- Dictionaries
- VEX Robotics Kit
- Computers with Autodesk Inventor
- Storage containers

- Online Resources