

SUBJECT: Engineering Prototyping		GRADE: 9-12	
Unit Title: Lab and Tool Safety		Time Frame: 1 Semester	
UNIT OVERVIEW			
Students will be able to: Safely use different types of machinery to construct their projects Identify different machines Safely use different power tools			
LRG SKILLS AND DISPOSITIONS		PA STANDARDS	
Honesty, Integrity, & Responsibility: Lab Safety Orientation (D3C)		3.5.9-12.V 3.5.9-12.W 3.5.9-12.X 3.5.9-12.Z 3.5.9-12PP	
COMPETENCIES		LEARNING TARGETS	
Core Concepts of Technology and Engineering		I can implement quality control as a planned process to ensure that a product, service, or system meets established criteria (K1TEB2M6)	

SUBJECT: Engineering Prototyping		GRADE: 9-12	
Unit Title: Structures		Time Frame: 1 Marking Period	
UNIT OVERVIEW			
Students will learn and implement the fundamentals of structural design and construction theory			
LRG SKILLS AND DISPOSITIONS		PA STANDARDS	
Creativity and Innovation: Project-Based Learning through building structures for testing (S3C)		3.5.9-12.V 3.5.9-12.W 3.5.9-12.X 3.5.9-12.Z 3.5.9-12PP	
COMPETENCIES		LEARNING TARGETS	
I can translate my design concepts into a problem-solving solution		- I can determine the best approach by evaluating the purpose of the design (K1TEB7M1) - I can optimize a design by addressing desired qualities within criteria and constraints (K1TEB7M3) - I can implement the best possible solution to a design (K1TEB7M6)	

SUBJECT: Introduction to Engineering Design		GRADE: 9-12	
Unit Title: Projectiles		Time Frame: 1 Marking Period	

UNIT OVERVIEW	
In this unit students will design, develop, and build a prototype projectile launcher designed around precision and adaptability.	
LRG SKILLS AND DISPOSITIONS	PA STANDARDS
Creativity and Innovation: Project-Based Learning through building projectile launchers for testing (S3C)	3.5.9-12.V 3.5.9-12.W 3.5.9-12.X 3.5.9-12.Z 3.5.9-12PP
COMPETENCIES	LEARNING TARGETS
I can translate my design concepts into a problem-solving solution	• I can determine the best approach by evaluating the purpose of the design (K1TEB7M1) • I can optimize a design by addressing desired qualities within criteria and constraints (K1TEB7M3) • I can implement the best possible solution to a design (K1TEB7M6)

SUBJECT: Introduction to Engineering Design		GRADE: 9-12
Unit Title: Motion	Time Frame: 1 Marking Period	
UNIT OVERVIEW		

In this unit students will design, develop, and build prototype components in a manufacturing and delivery system.

LRG SKILLS AND DISPOSITIONS	PA STANDARDS
Creativity and Innovation: Project-Based Learning through building motion projects for testing (S3C)	3.5.9-12.V 3.5.9-12.W 3.5.9-12.X 3.5.9-12.Z 3.5.9-12PP
COMPETENCIES	LEARNING TARGETS
I can translate my design concepts into a problem-solving solution	• I can determine the best approach by evaluating the purpose of the design (K1TEB7M1) • I can optimize a design by addressing desired qualities within criteria and constraints (K1TEB7M3) • I can implement the best possible solution to a design (K1TEB7M6)