

Manheim Central School District

Year-at-a-Glance Curriculum Overview

Department: Design Build

Course: Technology & Engineering

Grade Level: 9-12

Units of Study	Key Concepts	Driving Question	Length of Time	Standards Addressed
Sketching & CAD	Course Overview Sketching techniques CAD sketches and extrusions	How do effective sketching techniques help with designing objects?	6	3.5.9-12.K 3.5.9-12.M 3.5.9-12.U
Flight	Aerodynamics in air Fin design Rocket model build, test, and flight	How does an understanding of aerodynamics and flight principles provide a basis for effective model rocket design?	12	3.5.9-12.O 3.5.9-12.Y
Dragsters	Aerodynamics on land Vehicle design Friction Balsa wood model building	How does an understanding of aerodynamics and friction principles provide a basis for effective model dragster design?	15	
Structures	Efficient design with limited materials Graph and Onshape design Testing and efficiency calculations	How does an understanding of materials and engineering principles provide a basis for effective model truss bridge design?	12	



Difference Maker Course Connections:

Critical Thinking and problem-solving are key components of the learning throughout this course.

Collaboration among small teams or pairs of students is often utilized as a learning method in this course.

Creativity and innovation are key elements throughout each of the projects.