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| Time Frame | Topic/Unit | Skills/Concepts | Major Assessments | Core Standards | Resources |
| Weeks 1 - 6 | **Introduction to the Engineering Design Process + General Engineering Principles** | * Engineering Design Process:
	+ Understand the Challenge (Criteria + Constraints)
	+ Research
	+ Brainstorm
	+ Select + Design Sketch
	+ Prototype
	+ Test
	+ Iterate
	+ Communicate
* Engineering Job Postings
* Critical Path Method (CPM)
 | * Engineering Report – Slow Your Roll Challenge
* Critical Path Project (for example, develop a critical path diagram for building a house)
 |  | Materials for Slow Your Roll Challenge (Paper, tape, paper clips, ball)Engineering Design Process from CK-12.com |
| Weeks 7 - 15 | **Industrial Engineering** | * **Industrial Engineering** Field Research related to salary, sub-disciplines, example projects in the field of **IE**.
* Engineering Design Process Application to Authentic Project in **Industrial Engineering**
 | * Industrial Engineering Project *(note: this should be a relevant, real world project that actually exists – for example, improving the morning drop-off line at the elementary school)*
 |  | Varies based on what real-world projects are available and deemed appropriate |
| Weeks 16 – 30 | **Mechanical Engineering** | * **Mechanical Engineering** Field Research related to salary, sub-disciplines, example projects in the field of **ME**.
* Engineering Design Process Application to Authentic Project in **Mechanical Engineering**
* 3D Modeling in Autodesk Inventor
	+ Creating a part file
	+ Selecting a sketch plane
	+ Using sketch tools to create a profile
	+ Dimensioning sketches to be fully defined
	+ Extruding to add or remove material
	+ Creating subsequent planes, sketches, and extrusion features
* 3D Printing
 | * Mechanical Engineering Project & Report *(note: this should be a relevant, real world project that actually exists – for example, designing, 3D modeling, and 3D printing grippers to output maximum force)*
 |  | Varies based on what real-world projects are available and deemed appropriateAutodesk Inventor (or other 3D CAD software)3D Printer |
| Weeks 30-38 | **Civil Engineering** | * **Civil Engineering** Field Research related to salary, sub-disciplines, example projects in the field of **CE**.
* Engineering Design Process Application to Authentic Project in **Civil Engineering**
* 3D Modeling skills previously mentioned
 | * Civil Engineering Project *(Design a bridge to be poured from concrete to bear the most weight)*
 |  | Varies based on what real-world projects are available and deemed appropriateAutodesk InventorAg shop, tools, and equipmentOSB sheetsWood screwsPainters TapeConcrete (bags)WireStage weights from Auditorium |