

# Cornwall-Lebanon School District Curriculum Overview

## Engineering Design I (Grades 9-12)

18	length of time in weeks	Concepts & Competencies	Common Assessments	Academic Standards (PA Core if applicable)
Unit 1	3	<p style="text-align: center;"><b><u>Understanding Engineering &amp; Drafting</u></b></p> <p>Distinguishing the difference between Engineering and Drafting. Exploring Careers related to Engineering and Design &amp; Drafting.</p>	<ul style="list-style-type: none"> <li>➤ Each student will take a 5-question quiz based on a PowerPoint presentation and notes they took during this unit.</li> </ul>	
Unit 2	2	<p style="text-align: center;"><b><u>Measurement</u></b></p> <p>Successfully complete a mechanical drawing using half and full scale measurement.</p>	<ul style="list-style-type: none"> <li>➤ Each student will take a pre-test and post-test assessment.</li> </ul>	
Unit 3	30	<p style="text-align: center;"><b><u>Orthographic Projection Drafting</u></b></p> <p>Identify and use basic drafting tools and instruments necessary to complete a mechanical drawing. Use the mechanical drafting process to complete an Orthographic Projection drawing. Use proper paper setup techniques in order to complete a mechanical drawing. Apply proper line types when finishing a mechanical drawing.</p>	<ul style="list-style-type: none"> <li>➤ Student work will be assessed using a grade rubric developed for these drafting assignments.</li> </ul>	
Unit 4	20	<p style="text-align: center;"><b><u>3 Dimensional Design Using SolidWorks</u></b></p> <p>Create a PART using 3D design software. Accurately dimension a drawing using 3D design software.</p>	<ul style="list-style-type: none"> <li>➤ Student work will be assessed using a grade rubric developed for these 3 dimensional design assignments.</li> </ul>	
Unit 5	20	<p style="text-align: center;"><b><u>Isometric Drafting</u></b></p> <p>Use the mechanical drafting process to complete an Isometric drawing. Identify and use basic drafting tools and instruments necessary to complete a mechanical drawing. Use proper paper setup techniques in order to complete a mechanical drawing. Apply proper line types when finishing a mechanical drawing.</p>	<ul style="list-style-type: none"> <li>➤ Student work will be assessed using a grade rubric developed for these drafting assignments.</li> </ul>	
Unit 6	20	<p style="text-align: center;"><b><u>3D Engineering Design Challenges</u></b></p> <p>Solve an open-ended design challenge using 3D software. Print a 3D part using a 3 dimensional printer.</p>	<ul style="list-style-type: none"> <li>➤ Each student will have their 5 game parts assessed based on a</li> </ul>	



grade rubric designed  
for this design challenge.

