Grades 11-12 Advanced Drafting and Design-Inventor, Quarter 4, Revised 2013

**Big Ideas/Key Concepts: Engineering Designs and Problems (Inventions)**
Students will research, apply, and create inventions that can be manufactured. Bill of materials and schedules for the invention will also be included.

<table>
<thead>
<tr>
<th>Standards</th>
<th>Student Friendly “I Can” Statements</th>
<th>Resources</th>
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| Standard 6.0  
Students will research and apply professional standards of a specific discipline to increase their area of knowledge for the drafting and design profession. | I can sketch and design from an idea to an actual working part using Inventor program and the 3D printer. | Google patent application |
| Standard 6.1  
Students will create a research project based on different areas of the drafting and design industry. | I can determine the type of material that is best to be used on my design. | Inventor program |
| Standard 6.2  
Students will create a detailed presentation based on one specific area from the research. | I can use Inventor to determine the amount of material needed to make my design. | Z-Corps 3-d printer |
| Standard 8.0  
Students will extract information from a technical drawing to create a bill of materials and/or schedules. | I can by following the design process, investigate past inventions. | I Tunes U videos- URL is found on SharePoint page of teachers participating. |
| Standard 8.1  
Students will identify the available form(s) of each raw material required for the assembly and make defendable recommendations. | | Instructional Videos on the public drive |
Standard 8.2
Students make a list of each type of raw material with all required specifications for an assembly.

Standard 8.3
Students will make a list and specifications for finished-good components required of an assembly.

Standard 8.4
Students will identify allowable alternates or substitutions (if any) on the bill of materials and/or schedules.

Common Core standard: 1, 2, 3, 4, 5, 6, 7, 9

Big Ideas/Key Concepts: Portfolio
Students will develop advanced study skills that can assist to demonstrate personal and analytical competencies

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| Standard 2.0
Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace. | I can effectively present a self-evaluation of my progression in the engineering, architecture, and design fields. I can complete the assignments. I can organize and maintain a professional 9 week portfolio demonstrating my assignments. | 3-ring binder Sheet protectors Computer Printer |
| Standard 3.2
Develop advanced study skills. | Common Core standard:10 |

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