



# Architecture & Engineering | Drafting I: CAD



ORGANIZING THEME/TOPIC	FOCUS STANDARDS & SKILLS
<p><b>Drafting Foundations:</b></p> <ul style="list-style-type: none"> <li>• Graphic Communication</li> <li>• Drafting Equipment</li> <li>• Geometry for Technical Drawing</li> <li>• CAD</li> <li>• Integrated Skills</li> </ul> <p>Time Frame: 10 Weeks</p>	<p><b>KS 21107.13</b> Construct drawings using straight line, circle, and hidden line statements, etc.</p> <ul style="list-style-type: none"> <li>• Demonstrate basic architectural sketches and lettering.</li> <li>• Measure accurately.</li> <li>• Identify function and use of manual drafting tools.</li> <li>• Identify and create common geometric shapes.</li> <li>• Apply geometric construction as a problem solving tool in technical drawing.</li> <li>• Introduction to CAD interface and commonly used drawing commands.</li> <li>• Demonstrate knowledge of social and ethical issues in computing.</li> <li>• Define qualities of leadership.</li> <li>• Recognize connection of graphic communication to other areas.</li> </ul>
<p><b>Orthographic Drafting:</b></p> <ul style="list-style-type: none"> <li>• Multi-view Projections</li> <li>• Dimensioning techniques</li> </ul> <p>Time Frame: 8 Weeks</p>	<p><b>KS 21107.2</b> Demonstrate the ability to dimension drawings on the CAD system.</p> <ul style="list-style-type: none"> <li>• Visualize the "Glass Box" concept and apply it to the process of selecting and locating views on a drawing.</li> <li>• Develop a multi-view drawing, following a prescribed process, from the initial idea to a finished drawing.</li> <li>• Apply measurements, notes, and symbols to orthographic views on a technical drawing.</li> </ul>
<p><b>Pictorials:</b></p> <ul style="list-style-type: none"> <li>• Isometric</li> <li>• Oblique</li> <li>• Perspective</li> </ul> <p>Time Frame: 6 Weeks</p>	<p><b>KS 21107.06</b> Demonstrate the ability to create drawings in 3D.  <b>KS 21107.14</b> Construct isometric and 3D drawings.</p> <ul style="list-style-type: none"> <li>• Layout and execute an Isometric drawing.</li> <li>• Describe and define the various types of oblique pictorial styles.</li> <li>• Select and draw the most practical type of oblique for a specific purpose.</li> <li>• Describe and define the various types of perspective drawings.</li> <li>• Select and draw the most practical type of perspectives for a specific purpose.</li> </ul>

<p><b>Special Views:</b></p> <ul style="list-style-type: none"> <li>• Sections</li> <li>• Auxiliary</li> <li>• Developments</li> </ul> <p>Time Frame: 5 Weeks</p>	<p><b>KS 21107.16</b> Define and use commands to modify a drawing.</p> <ul style="list-style-type: none"> <li>• Describe and define the purpose of sectional views.</li> <li>• Select and draw the appropriate type of sectional views.</li> <li>• Describe and define the purpose of auxiliary views.</li> <li>• Select and draw the appropriate auxiliary view.</li> <li>• Describe and define the purpose of a development.</li> <li>• Select and draw an appropriate development.</li> </ul>
<p><b>Specialties:</b></p> <ul style="list-style-type: none"> <li>• Gears</li> <li>• Fasteners</li> <li>• CAD applications in Architecture</li> <li>• Careers in Architecture and Construction</li> </ul> <p>Time Frame: 5 Weeks</p>	<p><b>KS 21107.17</b> Identify and demonstrate the use of CAD symbols, commands and system peripherals.</p> <ul style="list-style-type: none"> <li>• Define and draw a common cam or gear.</li> <li>• Draw, identify and describe various types of fasteners.</li> <li>• Draw simplified, schematic and detailed threads.</li> <li>• Draw a basic floor plan.</li> <li>• Add dimension and appropriate notes, symbols to a floor plan.</li> <li>• Demonstrate proficiency in setting limits and scale on the CAD system (KS).</li> <li>• Demonstrate proficiency in setting, turning on and turning off layers (KS).</li> <li>• Place text on a drawing and change styles, size and angles (KS).</li> <li>• Set grid and snap specifications (KS).</li> </ul> <p><b>Career and College Readiness</b></p> <ul style="list-style-type: none"> <li>• Investigate use of drafting and CAD in Architectural and Construction careers.</li> <li>• Communicate ideas effectively orally and in writing</li> <li>• Accurately apply mathematical reasoning and calculations.</li> </ul>