

Architectural Drawing: Modeling Unit

ESTABLISHED GOALS:	Transfer	
<u>Competencies:</u>	<i>Students will be able to independently use their learning to create a model.</i>	
<ul style="list-style-type: none"> ● <i>Students will demonstrate the ability to use computer aided drafting and design (CAD) software in order to create a 3D model of an architectural project.</i> ● <i>Students will demonstrate the ability to create technical drawings in order to communicate a design.</i> ● <i>Students will demonstrate the ability to analyze and summarize text and integrate knowledge to make meaning of discipline-specific materials.</i> ● <i>Students will demonstrate the ability to produce coherent and supported writing in order to communicate effectively for a range of discipline-specific tasks, purposes, and audiences.</i> ● <i>Students will demonstrate the ability to speak purposefully and effectively by strategically making decisions about content, language use, and discourse style.</i> 	Meaning	
<u>Content Standards:</u>	ENDURING UNDERSTANDINGS	ESSENTIAL QUESTIONS
New Hampshire Vocational Curriculum Guide	<i>Students will understand that...</i>	
<ul style="list-style-type: none"> ● Standard 1: Students will develop an understanding of the characteristics and scope of technology. ● Standard 2: Students will develop an understanding of the core concepts of technology. ● Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study. ● Standard 8: Students will develop an understanding of the attributes of design. ● Standard 12: Students will develop the abilities to use and maintain technological products and systems. ● Standard 17: Students will develop an understanding of and be able to select and use information and communication technologies. 	<ul style="list-style-type: none"> ● computer aided drafting and design (CAD) software packages facilitate the creation of virtual three-dimensional (3D) models of architectural projects. 	<ul style="list-style-type: none"> ● How can we use technology to make the design and construction of an architectural project more efficient and less prone to error? ● Which is better when designing and drafting: pencil and paper or computer aided drafting and design (CAD)? ●
	Acquisition	
	<i>Students will know...</i>	<i>Students will be skilled at...</i>
	<ul style="list-style-type: none"> ● that architects primarily focus on designing the interior and exterior “look and feel” of structures meant for human habitation. ● that parametric modeling utilizes characteristics of components and the interactions between them to create 3D models and maintain consistent relationships between elements of that model as it is manipulated. ● the characteristics, scope and core concepts of the technologies that are used. <p><u>vocabulary:</u> architect, Building Information Modeling (BIM), computer-aided drafting and design, parametric modeling,</p>	<ul style="list-style-type: none"> ● applying the principles and elements of design in architectural works. ● applying elements of good residential design to the design of a residential structure. ● creating three-dimensional (3D) models of architectural projects within a computer aided drafting and design (CAD) software package. ● evaluating the relationships among technologies and other field of study.

Content Area Literacy Standards	21st Century Skills
<p>RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.11-12.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 11-12 texts and topics</i>.</p> <p>RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.</p> <p>RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.11-12.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p> <p>WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</p> <p>WHST.11-12.4 Produce clear and coherent writing in which the development, organizations, and style are appropriate to task, purpose, and audience.</p>	<ul style="list-style-type: none"> ● <i>Apply technology effectively</i> ● <i>Reason effectively</i> ● <i>Solve problems</i> ● <i>Think creatively</i>
Science and Engineering Practices	<ul style="list-style-type: none"> ●
<p>S&E P 1. Asking questions (for science) and defining problems (for engineering)</p> <p>S&E P 2. Developing and using models</p> <p>S&E P 4. Analyzing and interpreting data</p> <p>S&E P 5. Using mathematics and computational thinking</p> <p>S&E P 6. Constructing explanations (for science) and designing solutions (for engineering)</p> <p>S&E P 8. Obtaining, evaluating, and communicating information</p>	<ul style="list-style-type: none"> ●

<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	PERFORMANCE TASK(S):
	OTHER EVIDENCE:

<i>Summary of Key Learning Events and Instruction</i>	
<i>Language Arts Integration</i>	<i>Mathematics Integration</i>
<ul style="list-style-type: none"> • 1.OA.1 Use 	<ul style="list-style-type: none"> • 1.OA.1 Use
<i>Technology Integration</i>	<i>District Materials</i>
<ul style="list-style-type: none"> • 1.OA.1 Use 	