

Unit 1: Architecture

Unit #: APSDO-00092888
Team: Eric Lord (Author)

Grade(s): 7
Subject(s): Technology
Course(s): GR. 7 - TECHNOLOGY EDUCATION

Unit Focus

In this unit, students will be introduced to three-dimensional (3D) modeling via an architecture-based project. Beginning with a two-dimensional (2D) floor plan students will design and create a 3D model based on appropriate specifications and customer requirements using the Engineering Design Process. Primary instructional materials include, but are not limited to, 3D modeling software (e.g., Trimble SketchUp), and tutorial videos.

Stage 1: Desired Results

Established Goals	Transfer		
<p>Standards</p> <ul style="list-style-type: none"> • ISTE Standards (2016) <ul style="list-style-type: none"> ◦ <i>ISTE Standards for Students</i> <ul style="list-style-type: none"> ▪ Creative Communicator - Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals. <i>(6)</i> ▪ Students create original works or responsibly repurpose or remix digital resources into new creations. <i>(6.b)</i> • Connecticut Goals and Standards <ul style="list-style-type: none"> ◦ <i>Technology Education: 7-12</i> <ul style="list-style-type: none"> ▪ ARCHITECTURE TECHNOLOGY <ul style="list-style-type: none"> ▪ ARC102 Demonstrate an understanding of regulations in architectural design. ▪ ARC105 Develop technical drawings drafted by hand and computer aided drafting and design (CADD). ▪ ARC104 Research, plan, and design functional structure. 	<p><i>What kinds of long-term, independent accomplishments are desired? Students will be able to independently use their learning to...</i></p> <p>T1 (T2) Communicate effectively based on purpose, task, and audience using industry standard vocabulary and medium.</p> <p>T2 (T3) Identify a problem or need and use technology to develop a solution.</p> <p>T3 (T4) Demonstrate fluency and precision in industry standard processes.</p>		
	Meaning		
	Understanding(s)	Essential Question(s)	
	<p><i>What specifically do you want students to understand? What inferences should they make? Students will understand that...</i></p> <p>U1 Successful architecture purposefully considers its intended audience, purpose, and includes specific information.</p> <p>U2 (U100) Exploration and use of technology, embedded in our lives, increases likelihood of personal and professional success.</p> <p>U3 (U400) The depth of understanding and use of industry standard processes directly relates to the sophistication and innovation of a design.</p>		<p><i>What thought-provoking questions will foster inquiry, meaning making, and transfer? Students will keep considering...</i></p> <p>Q1 What are the elements, constraints, and parameters that should be considered when making a scale house?</p> <p>Q2 (Q304) Process: How am I using appropriate tools and techniques in this phase of the design?</p> <p>Q3 (Q400) How does understanding industry standard processes help me solve the problem or guide my design?</p>
	Acquisition		
	Knowledge	Skill(s)	

	<p><i>What facts and basic concepts should students know and be able to recall? Students will know...</i></p> <p>K1 Purposefully considering an intended audience, purpose, and including specific information will result in quality work</p> <p>K2 How to create, edit, store, and upload 3D modeling files</p> <p>K3 The elements of residential homes must adhere to local and federal codes regarding minimum safety standards in terms of design, materials/construction, and size specifications</p>	<p><i>What discrete skills and processes should students be able to use? Students will be skilled at...</i></p> <p>S1 Identifying the intended audience, purpose, and include specific information when designing houses</p> <p>S2 Using 3D modeling software tools and techniques in the creation of a residential house</p> <p>S3 Creating, editing, and storing files properly</p>
--	--	--