Content Area: Architecture Modeling &
Grade: 9-12

Unit	Enduring Understandings	Essential Questions	Objectives	Skills
1: Architectural Modeling and 3D Printing	● 3D printing is one of the biggest emerging technologies. ● You can design and print at different densities. ● You can design and print flexible objects or rigid objects ● Designs can be mass produced or one of a kind.	● What is 3D printing? ● Why is 3D printing being used more and more? ● Where is 3D printing being used in different industries and why	● Identify the different types of Materials used in 3D printing ● Design a 3D object using TinkerCAD or other software. ● Design a 3D scale model of a 2D object. ● Use blueprints to build a 3D model.. ● Work cooperatively with other students to	● Use TinkerCAD ● Read a blueprint ● Measure ● Angles ● Use different scales ● Modeling ● Team work ● Leadership

			achieve a common goal. ● Safe 3D models in different file types depending on the printer being used. ● Print scale 3D models of different objects.	
2: Architectural Modeling	1. Floor plans require certain symbols in order to meet building codes. 2. Floor plans and elevation views are exact representations of what's been constructed. 3. Elevation views help the contractor visualize the house that has to be constructed	1. What is a floor plan and elevation views? 2. Why are floor plans and elevation views used on the field? 3. Why are floor plans and elevation views important?	1. Design a floor plan for their dream house using AutoCad. 2. Design elevation views for their dream house using AutoCad. 3. Draw the different types of symbols used on a floor plan. 4. Draw the floor plan of their dream house.	● Use AutoCAD ● Design process ● Schematic symbols ● Reading schematics ● Read a blueprint ● Use different scales ● Modeling ● Team work ● Leadership

	4. Floor plans and elevation views are used on all construction sites.		5. Draw the elevation views (Top, Front, Right side) of their dream house. 6. Draw the different types of symbols needed for a floor plan. 1. Wiring 2. Plumbing 3. Air conditioning 4. Doors 5. Windows 6. Furniture 7. Appliances	
Unit 3: Architectural Modeling	• Scale modeling is one of the most used techniques to show finish products. • Scale modeling is a very	1. What is a scale model? 2. Why are scale models used on the field? 3. How are scale models used?	1. Identify the different types of roof designs. 2. Act as the project manager of a construction site.	• Read a blueprint • Measure • Angles • Cut with band saw • Use different scales • Modeling • Team work • Leadership

	important part of designing products. ● In a scale model all the angles and dimensions have to be exact.		3. Build a scale model of a house or garage. 4. Use blueprints to build a scale model. 5. Work cooperatively with other students to achieve a common goal. 6. How to use a blueprint to build a scale model. 7. The difference between a scale model and full size model.	

			8. How to act as the project manager of a construction site. 9. How to differentiate between different types of roof designs.	