Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Introduction To Architectural Design	**__X__ Essential _____ Important _____ Compact**
Big Idea: Architectural design and the architectural design process can be applied to solve problems in the built environment.	
STEELS/Tech and Engineering Strand: 3.5.9-12.A Use various approaches to communicate processes and procedures for using, maintaining, and assessing technological products and systems. 3.5.9-12.U Evaluate and define the purpose of a design. 3.5.9-12.Y (ETS) Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. 3.5.9-12.Z Recognize and explain how their community and the world around them informs technological development and engineering design.	**Pacing:** 2 days
Essential Questions: UEQ: What is architectural design? LEQ: What does an architect do? LEQ: What are the steps of the architectural design process?	**Understandings:** Students will know that… ● Architectural problems can be solved by applying the architectural design process.
Knowledge: Architecture & Architect Architectural Design Process	**Do/Skills:** Students will be able to… ● Identify the steps used in the architectural design process. ● Conduct client pre-design programming. ● Develop multiple schematic design solutions. ● Finalize the design development and specify materials. ● Create construction drawings. ● Construct the design from drawings.
Vocabulary: Architecture, Architect, Architectural Design, Pre-Design Programming, Schematic Design, Design Development, Construction Documents, Construction	**Core Resources:** Schoology LMS

Common Assessment(s):	**Supplemental Resources:**
1. Discussion Prompt 2. Infographic Project	What is Architecture? Architect Career Video Why Architecture? Day at Work: Architectural Designer I am an Architect - Discover Architecture 5 Stages of an Architectural Design Process The Owner | Architect Contract

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Architectural Styles and House Designs	**__X__ Essential _____ Important _____ Compact**
Big Idea: Architectural styles and historical house designs have influenced today's architecture.	
STEELS/Tech and Engineering Strand: 3.5.9-12.Q Implement and critique principles, elements, and factors of design. 3.5.9-12.S Conduct research to inform intentional inventions and innovations that address specific needs and wants. 3.5.9-12.U Evaluate and define the purpose of a design. 3.5.9-12.Z Recognize and explain how their community and the world around them informs technological development and engineering design. 3.5.9-12.GG Evaluate how technology and engineering have been powerful forces in reshaping the social, cultural, political, and economic landscapes throughout history. 3.5.9-12.KK Relate how technological and engineering developments have been evolutionary, often the result of a series of refinements to basic inventions or technological knowledge.	**Pacing:** 3 days
Essential Questions: UEQ: What are the different types of architectural styles around the world? LEQ: Which residential house design style fits your personality? LEQ: How do architects create design styles? LEQ: How are design styles integrated into modern architecture?	**Understandings:** Students will know that… ● Architectural styles and residential house designs are influenced by individual design characteristics. ● Architects create design styles, not the other way around.
Knowledge: Styles of Architecture Residential House Designs Famous Architects	**Do/Skills:** Students will be able to… ● Identify and examine the residential house design style that fits your personality. ● Investigate the various traits and styles each architect is known for in designing their buildings.

Vocabulary: Art Deco, Bungalow, Cape Cod, Colonial, Contemporary, Craftsman, Creole, Dutch Colonial, Federal, French Provincial, Georgian, Gothic Revival, Greek Revival, International, Italianate, Monterey, National, Neoclassical, Prairie, Pueblo, Queen Anne, Ranch, Regency, Saltbox, Second Empire, Shed, Shingle, Shotgun, Spanish Eclectic, Split Level, Stick, Tudor, Victorian	**Core Resources:** Schoology LMS
Common Assessment(s): 1. Interactive WebQuest 2. Architectural Styles Quiz 3. An Architect's Influence Research Presentation	**Supplemental Resources:** Styles of Architecture How Many Architectural Styles Can You Identify From an Image? Architecture Styles

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Primary Considerations	**__X__ Essential _____ Important _____ Compact**
Big Idea: Local building codes and zoning laws play an important role in designing and planning a home based on its location.	
STEELS/Tech and Engineering Strand: 3.5.9-12.B Critically assess and evaluate a technology that minimizes resource use and resulting waste to achieve a goal. 3.5.9-12.L Interpret laws, regulations, policies, and other factors that impact the development and use of technology. 3.5.9-12.S Conduct research to inform intentional inventions and innovations that address specific needs and wants.	**Pacing:** 2 days
Essential Questions: UEQ: How do local building codes and zoning laws play an important role in designing and planning a home? LEQ: What are the local zoning laws and code of ordinances for your home?	**Understandings:** Students will know that… • Local building codes and zoning laws play an important role in designing and planning a home.
Knowledge: Zoning & Planning Code of Ordinance Setbacks & Easements	**Do/Skills:** Students will be able to… • Investigate local building codes and zoning laws based on the location of their home.
Vocabulary: Zoning, Code of Ordinances, Setbacks, Easements, Lot Coverage Ratio, Building Coverage, Floor Area Ratio, Building Height	**Core Resources:** Schoology LMS

Common Assessment(s):	**Supplemental Resources:**
1. Zoning & Planning Pre-Design Questionnaire	Zoning 101 Elizabethtown Borough (Code of Ordinance) Mount Joy Township (Code of Ordinance) West Donegal Township (Code of Ordinance) Conoy Township (Code of Ordinance)

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Site Plan	**__X__ Essential _____ Important _____ Compact**
Big Idea: Site plans are used to show the intended use of the buildings and the relationship of the features of the land.	
STEELS/Tech and Engineering Strand: 3.5.9-12.O Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality. 3.5.9-12.P Apply a broad range of design skills to a design thinking process. 3.5.9-12.S Conduct research to inform intentional inventions and innovations that address specific needs and wants. 3.5.9-12.AA Safely apply an appropriate range of making skills to a design thinking process.	**Pacing:** 2 days
Essential Questions: UEQ: What is the purpose of a site plan? LEQ: How are site plans created to show the intended use of the buildings and features of the land?	**Understandings:** Students will know that… ● Online resources and site surveys are used to develop a site plan that shows the intended use of buildings and the relationship features of the land.
Knowledge: Inventory & Site Planning	**Do/Skills:** Students will be able to… ● Create a site plan using online resources and a site survey.
Vocabulary: GIS (Geographic Information System), Site Plan (Plot Plan)	**Core Resources:** Schoology LMS

Common Assessment(s):	**Supplemental Resources:**
1. Site Plan Project	LanCo View Version 2.0 How to Read a Property Survey I House Survey I What is a Property Survey I What is a Survey

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Floor Plan	**__X__ Essential _____ Important _____ Compact**
Big Idea: Architects conduct measured surveys to aid the development and creation of floor plans.	
STEELS/Tech and Engineering Strand: 3.5.9-12.O Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality. 3.5.9-12.P Apply a broad range of design skills to a design thinking process. 3.5.9-12.V Apply principles of human-centered design. 3.5.9-12.AA Safely apply an appropriate range of making skills to a design thinking process.	**Pacing:** 1 week
Essential Questions: UEQ: What are measured surveys and how are they used to create a floor plan? LEQ: How do you calculate the perimeter and area of a room from a floor plan?	**Understandings:** Students will know that… ● Measured surveys are needed to create a floor plan of an existing home.
Knowledge: Measured Survey House Perimeter & Area Floor Plans	**Do/Skills:** Students will be able to… ● Collect measurement data of an existing home floor plan. ● Determine the perimeter and area of each room of a floor plan. ● Create a floor plan using CAD software.
Vocabulary: Measured Survey, Floor Plan, Perimeter, Area	**Core Resources:** Schoology LMS

Common Assessment(s):	**Supplemental Resources:**
1. Measured Survey 2. House Perimeter & Area 3. House Floor Plan Project	What Is A Measured Survey? How to do a measured survey of your house! How to Calculate Square Footage | The Home Depot

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Space Planning	**__X__ Essential _____ Important _____ Compact**
Big Idea: Architects use space planning strategies to create functional residential floor plans. (Living, Sleeping, & Service)	
STEELS/Tech and Engineering Strand: 3.5.9-12.F Evaluate a technological innovation that arose from a specific society's unique need or want. 3.5.9-12.O Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality. 3.5.9-12.P Apply a broad range of design skills to a design thinking process. 3.5.9-12.Q Implement and critique principles, elements, and factors of design. 3.5.9-12.R Use a design thinking process to design an appropriate technology for use in a different culture. 3.5.9-12.S Conduct research to inform intentional inventions and innovations that address specific needs and wants. 3.5.9-12.U Evaluate and define the purpose of a design. 3.5.9-12.V Apply principles of human-centered design. 3.5.9-12.W Optimize a design by addressing desired qualities within criteria and constraints while considering trade-offs. 3.5.9-12.X Implement the best possible solution to a design using an explicit process. 3.5.9-12.AA Safely apply an appropriate range of making skills to a design thinking process. 3.5.9-12.PP Demonstrate the use of conceptual, graphical, virtual, mathematical, and physical modeling to identify conflicting considerations before the entire system is developed and to aid in design decision-making.	**Pacing:** 4 weeks
Essential Questions: UEQ: What is space planning? LEQ: What are bubble diagrams and how are they used to visualize design concepts for room planning?	**Understandings:** Students will know that… ● Space planning is the decision-making process that identifies the needs of the building and the design of spatial relationships (Living, Sleeping, & Service Space).

LEQ: How are block diagrams used to refine the size and location of rooms when developing floor plans? LEQ: What are the different types of bathrooms and how are they calculated? LEQ: What are the different types of kitchen layouts and what is the kitchen work triangle?	• A Bubble Diagram is a very simple (hand) drawing that consists of roughly drawn bubbles (representing spaces) connected by solid lines, broken lines, wavy lines, etc. to specify the type of relationship between the spaces. • A block diagram refines the size and location of rooms from a bubble diagram to develop a floor plan. • Each bathroom component is considered to be one-quarter of four components when calculating different types.
Knowledge: Room Planning Bubble & Block Diagrams Bathroom Design & Planning Kitchen Design & Planning	**Do/Skills:** Students will be able to… • Develop a bubble diagram that will be used to visualize design concepts for room planning. • Refine room bubbles into a block diagram that shows the sizes and locations of rooms when developing floor plans. • Research, plan, and design 3 bathroom types (Master or Full, Three-quarters, and Half bathroom). • Decorate each bathroom based on your selected style and decor to provide a realistic 3D view of each bathroom • Research, plan, and design 3 kitchen layouts (Island, U-shaped or G-shaped, and L-shaped kitchen). • Decorate each kitchen based on your selected style and decor to provide a realistic 3D view of each kitchen.
Vocabulary: Space Planning, Bubble Diagram, Living Area, Sleeping Area, Service Area, Block Diagram, Master Bathroom, Three-Quarter Bathroom, Half Bathroom, Quarter Bathroom, Utility Bathroom, Vastu Shastra, Work Triangle, Kitchen Island Layout, U-shaped Layout, G-shaped Layout, L-shaped Layout, Gallery Layout, One Wall Layout	**Core Resources:** Schoology LMS FloorPlanner
Common Assessment(s): 1. Space Planning Activity 2. Room Planning Bubble Diagrams Activity 3. Block Diagrams Developing A Floor Plan 4. Bathroom Planning Activity 5. Kitchen Planning Activity	**Supplemental Resources:** How To Think Like An Architect: The Design Process The Design Process and Space Planning Interior Design / Adjacency Diagram Editor ArchiAdventure! | How I made my Bubble Diagram The Different Types of Bathrooms! Slow Home Studio | Bathroom Design Popular Kitchen Layouts | HGTV Layout & Space: The Work Triangle

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Residential House Design	**__X__ Essential _____ Important _____ Compact**
Big Idea: Architects identify the structural components of a house based on the architectural construction process and materials used in building a residential structure.	
STEELS/Tech and Engineering Strand: 3.5.9-12.D Critique whether existing or proposed technologies use resources sustainably. 3.5.9-12.K (ETS) Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem. 3.5.9-12.O Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality. 3.5.9-12.P Apply a broad range of design skills to a design thinking process. 3.5.9-12.Q Implement and critique principles, elements, and factors of design. 3.5.9-12.R Use a design thinking process to design an appropriate technology for use in a different culture. 3.5.9-12.U Evaluate and define the purpose of a design. 3.5.9-12.V Apply principles of human-centered design. 3.5.9-12.X Implement the best possible solution to a design using an explicit process. 3.5.9-12.AA Safely apply an appropriate range of making skills to a design thinking process. 3.5.9-12.PP Demonstrate the use of conceptual, graphical, virtual, mathematical, and physical modeling to identify conflicting considerations before the entire system is developed and to aid in design decision-making.	**Pacing:** 5 weeks
Essential Questions: UEQ: How is the architectural construction process used to design, construct, and model a residential dream house using CAD and 3D software?	**Understandings:** Students will know that… • An architectural design process is a multidisciplinary approach to designing a residential house influenced by personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly.

LEQ: How are exterior and interior walls drawn to create a floor plan? LEQ: How are doors and windows located along the exterior and interior or walls? LEQ: How are floors and ceilings added to create levels? LEQ: How are stairway configurations designed to access floor levels of a house? LEQ: How are foundation and basement plans designed and drawn for a typical residential structure? LEQ: How are different types of roofs and roof slopes (pitch) identified and drawn to create a roof plan? LEQ: How are components added to provide realistic 3D views of the entire home?	• Exterior and interior walls have a variety of wall thicknesses based on their structural purpose. • Doors and windows shield an opening from the elements, add decoration, provide light and ventilation, and emphasize the overall design. • Floors and ceilings determine the heights of rooms and elevations from grade. • The foundation plan is drawn from the information presented on the floor plan, site (plot) plan, and elevations. • The roof plan shows the shape of the roof and is greatly affected by the types of roofs and roof slopes (pitches).
Knowledge: Exterior & Interior Walls Doors & Windows Floors & Ceilings Stairway Configurations Foundations & Basements Roof Types & Slopes Household Appliances & Furnishings	**Do/Skills:** Students will be able to… • Design and create a residential house floor plan using CADD techniques. • Create exterior and interior wall structures using Building Information Modeling (BIM). • Create levels for floors and ceilings in an elevation view. • Select materials and finishes for exterior and interior surfaces (walls, floors, and ceilings). • Perform stair calculations when designing a stairway configuration for a residential structure. • Design and draw a foundation and basement plan for a typical residential structure. • Select the appropriate type of roof and roof slope (pitch) to design and create a roof plan. • Decorate each room of the house with furniture, appliances, and decor to provide a realistic 3D view of the entire home.
Vocabulary: BIM (Building Information Modeling), Walls (Exterior/Interior), Floors, Ceilings, Doors, Windows, Stairs, Basement Foundation, Concrete Slad Foundation, Crawl-Space Foundation, Elevations, Gable Roof, Hip Roof, Mansard Roof, Skillion (Shed) Roof, Roof Slope (Pitch), Rafters, Trusses, Fascia, Soffit, Gutters, Downspouts	**Core Resources:** Schoology LMS Autodesk Revit

Common Assessment(s):	**Supplemental Resources:**
1. Block Diagrams Developing A Floor Plan Project 2. Dream Home Site Plan Project 3. Dream House Progress Evaluation 1 4. Dream House Progress Evaluation 2 5. Dream House Progress Evaluation 3	The Design Process and Space Planning How To Draw Floor Plans Foundation Plan Roof Plan

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Lighting Is Art	**__X__ Essential _____ Important _____ Compact**
Big Idea: Architects understand the use of lighting in houses as a function and an art.	
STEELS/Tech and Engineering Strand: 3.5.9-12.C Develop a solution to a technological problem that has the least negative environmental and social impact. 3.5.9-12.O Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality. 3.5.9-12.P Apply a broad range of design skills to a design thinking process. 3.5.9-12.Q Implement and critique principles, elements, and factors of design. 3.5.9-12.R Use a design thinking process to design an appropriate technology for use in a different culture. 3.5.9-12.V Apply principles of human-centered design. 3.5.9-12.W Optimize a design by addressing desired qualities within criteria and constraints while considering trade-offs. 3.5.9-12.AA Safely apply an appropriate range of making skills to a design thinking process. 3.5.9-12.EE Connect technological and engineering progress to the advancement of other areas of knowledge and vice versa. 3.5.9-12.PP Demonstrate the use of conceptual, graphical, virtual, mathematical, and physical modeling to identify conflicting considerations before the entire system is developed and to aid in design decision-making.	**Pacing:** 1 week

Essential Questions: UEQ: How do you design the best lighting systems based on function, aesthetics, and energy efficiency design principles? LEQ: How do you determine how many lumens you need to properly light spaces? LEQ: How are common lighting symbols on a reflective ceiling lighting plan used to identify a variety of lighting fixtures?	**Understandings:** Students will know that… ● Lighting design is the art of balancing function, aesthetics, and energy efficiency design principles to enhance the home's interior design and architecture. ● Lighting layers utilize ambient, task, and accent lighting to create pockets of illumination and shade to form a composition of different lighting styles. ● Calculating the amount of illumination needed to provide proper lighting is based on the area (length and width) and the type of space usage for each room. ● Lighting symbols are used to represent the size and shape of the exact location of lighting fixtures on a lighting plan.
Knowledge: Lighting Design Principles & Layers Determining Lumens Lighting Systems Common Lighting Symbols	**Do/Skills:** Students will be able to… ● Calculate the amount of illumination needed for properly lighting each room in your house based on space planning. ● Design and create a lighting plan for your Dream House using the Residential Lighting Guide for the entire home.
Vocabulary: Function, Aesthetics, Energy Efficiency, Ambient Lighting, Task Lighting, Accent Lighting, Lumens, LED (Light-emitting diode), Incandescent, Watt	**Core Resources:** Schoology LMS Autodesk Revit
Common Assessment(s): 1. Determine The Required Lumens Worksheet 2. Reflected Ceiling Lighting Plan	**Supplemental Resources:** How I Design + Draw Architectural Lighting Plans Energy 101: Daylighting

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: The Electrical Plan	**__X__ Essential _____ Important _____ Compact**
Big Idea: Architects understand electrical plans and how they function in buildings.	
STEELS/Tech and Engineering Strand: 3.5.9-12.O Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality. 3.5.9-12.P Apply a broad range of design skills to a design thinking process. 3.5.9-12.Q Implement and critique principles, elements, and factors of design. 3.5.9-12.R Use a design thinking process to design an appropriate technology for use in a different culture. 3.5.9-12.V Apply principles of human-centered design. 3.5.9-12.W Optimize a design by addressing desired qualities within criteria and constraints while considering trade-offs. 3.5.9-12.AA Safely apply an appropriate range of making skills to a design thinking process. 3.5.9-12.PP Demonstrate the use of conceptual, graphical, virtual, mathematical, and physical modeling to identify conflicting considerations before the entire system is developed and to aid in design decision-making.	**Pacing:** 1 week
Essential Questions: UEQ: What are the different components of a residential home electrical system? LEQ: What are the National Electrical Code (NEC) requirements when designing the electrical systems for your project? LEQ: How are switches and outlets used to control lights and electrical appliances throughout the house? LEQ: How do you design and create an electrical plan that adheres to electrical code requirements for your residential house plan?	**Understandings:** Students will know that… ● Electricity is supplied to a building via a service drop and measured with an electric meter. ● The main panel distributes power to the building by way of circuit breakers in each room of the house. ● Receptacles are used to connect appliances throughout the house to the electrical system by a variety of outlet types. ● Ground-fault circuit interrupters (GFCI) are required by code in potentially wet locations (kitchens and bathrooms). ● Switches are used to control lights and receptacles through single or double poles and three-way switching.

	● Switching legs identifies which switches are used to control the lights or outlets on an electrical plan.
Knowledge: National Electrical Code (NEC) Electrical Systems & Symbols Residential Electrical Plan	**Do/Skills:** Students will be able to… ● Design and create an electrical plan for your Dream House using the Residential Electrical Code Requirements for your entire house plan.
Vocabulary: Electric Meter, Electrical Panel, Circuit Breaker, Switches, Receptacles (Outlets), Duplex Outlet, Ground Fault Circuit Interrupter (GCFI), Single Pole Switch, Double Pole - Single Throw Switch, Three-way Switch, Switch Leg	**Core Resources:** Schoology LMS Autodesk Revit
Common Assessment(s): 1. Residential Electrical Plan	**Supplemental Resources:**

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Plumbing System	**__X__ Essential _____ Important _____ Compact**
Big Idea: Architects understand plumbing systems and how to create a plumbing plan.	
STEELS/Tech and Engineering Strand: 3.5.9-12.O Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality. 3.5.9-12.P Apply a broad range of design skills to a design thinking process. 3.5.9-12.Q Implement and critique principles, elements, and factors of design. 3.5.9-12.R Use a design thinking process to design an appropriate technology for use in a different culture. 3.5.9-12.V Apply principles of human-centered design. 3.5.9-12.W Optimize a design by addressing desired qualities within criteria and constraints while considering trade-offs. 3.5.9-12.AA Safely apply an appropriate range of making skills to a design thinking process. 3.5.9-12.PP Demonstrate the use of conceptual, graphical, virtual, mathematical, and physical modeling to identify conflicting considerations before the entire system is developed and to aid in design decision-making.	**Pacing:** 1 week
Essential Questions: UEQ: How do you design and create a plumbing plan? LEQ: How do you design and create a plumbing plan that provides cold and hot water to appliances and household fixtures efficiently? LEQ: How do you design and create a Drain-Waste-Vent plumbing system that carries wastewater and sewage from sinks, toilets, showers, and other water-using appliances to the public sewer or septic tank?	**Understandings:** Students will know that… ● The Water Supply Plumbing and Piping system is supplied to a house from a drilled well or water service that measures usage through a water meter. ● Hot Water Plumbing and Piping system delivers hot water throughout the home to kitchens and bathrooms via a water heater or boiler. ● The Drain-Waste-Vent plumbing system carries wastewater and sewage from sinks, toilets, showers, and other water-using appliances to the public sewer or septic tank.

Knowledge: Water Supply & Waste Removal Plumbing Systems & Symbols Residential Plumbing Plan	**Do/Skills:** Students will be able to… ● Design and create a plumbing plan for your Dream House using plumbing fixture symbols and color-coded plumbing lines.
Vocabulary: Hot Water Supply, Cold Water Supply, Drainage, Irrigation, Stormwater, Drain-Waste-Vent Line, Water Meter, Water Heater	**Core Resources:** Schoology LMS Autodesk Revit
Common Assessment(s): 1. Residential Plumbing Plan	**Supplemental Resources:** How Your Home Plumbing Works

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Elevations, Sections, and Callouts	**__X__ Essential _____ Important _____ Compact**
Big Idea: Architects understand how to create and read elevation, section, and callout drawings.	
STEELS/Tech and Engineering Strand: 3.5.9-12.O Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality. 3.5.9-12.P Apply a broad range of design skills to a design thinking process. 3.5.9-12.Q Implement and critique principles, elements, and factors of design. 3.5.9-12.R Use a design thinking process to design an appropriate technology for use in a different culture. 3.5.9-12.V Apply principles of human-centered design. 3.5.9-12.AA Safely apply an appropriate range of making skills to a design thinking process. 3.5.9-12.PP Demonstrate the use of conceptual, graphical, virtual, mathematical, and physical modeling to identify conflicting considerations before the entire system is developed and to aid in design decision-making.	**Pacing:** 1 week
Essential Questions: UEQ: What is the purpose of creating Elevations, Sections, and Callouts? LEQ: How are elevations used to describe the placement of exterior walls, windows, and doors? LEQ: How are sections used to communicate information about wall framing and construction methods? LEQ: How are callouts used to illustrate the construction details of residential house elements?	**Understandings:** Students will know that… ● Elevations show the finished appearance of a given side of the building and include specific information about the building. ● Building sections are used to inform the contractor or builder about construction methods or techniques to be incorporated into a structure. ● Detail callouts help to communicate information about construction details.

Knowledge: Elevations Building Sections Detail Callouts	**Do/Skills:** Students will be able to… ● Design and create elevations that show the placement of exterior walls, windows, and doors for each side of a building. ● Design and create building sections that communicate information about wall framing and construction methods. ● Design and create callouts used to illustrate the construction details of residential house elements.
Vocabulary: Elevation, Grade Line, Full Building Section, Partial Building Section, Wall Section, Cutting-Plane Line, Callout, Detail	**Core Resources:** Schoology LMS Autodesk Revit
Common Assessment(s): 1. Elevations - Exterior, Interior, Stairs, Door & Window 2. Sections - North-South, East-West, Wall-Ceiling-Floor-Roof Section Callout 3. Callouts - Kitchen, Master Bath, Roof Eave, Foundation/Basement	**Supplemental Resources:**

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Construction Drawings	**__X__ Essential _____ Important _____ Compact**
Big Idea: Architects understand how to create a set of architectural construction drawings, which provides a graphic representation of how the building will be built.	
STEELS/Tech and Engineering Strand: 3.5.9-12.O Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality. 3.5.9-12.P Apply a broad range of design skills to a design thinking process. 3.5.9-12.Q Implement and critique principles, elements, and factors of design. 3.5.9-12.R Use a design thinking process to design an appropriate technology for use in a different culture. 3.5.9-12.V Apply principles of human-centered design. 3.5.9-12.AA Safely apply an appropriate range of making skills to a design thinking process. 3.5.9-12.PP Demonstrate the use of conceptual, graphical, virtual, mathematical, and physical modeling to identify conflicting considerations before the entire system is developed and to aid in design decision-making.	**Pacing:** 1 week
Essential Questions: UEQ: What information should be included in a set of architectural construction drawings to provide a graphic representation of how the building will be built? LEQ: How are sheet views created and organized to develop a set of completed construction drawings? LEQ: Which construction drawings focus on written specifications about the materials, installation techniques, and quality standards? LEQ: How are door and window schedules prepared for the entire house?	**Understandings:** Students will know that… ● Construction drawings provide a graphic representation of how the building will be built, while the written specifications focus on the materials, installation techniques, and quality standards.

Knowledge: Floor Plan Construction Drawings Elevation Construction Drawings Sectional Construction Drawings Detail Construction Drawings	**Do/Skills:** Students will be able to… ● Create sheet views of floor plans to include information such as structural layout, dimensions, and clear labeling of elements. ● Depict elevations that give information on the external finishes, windows, doors, roof shapes, and pitches. ● Create sections that show the construction of the walls and floors along with ceiling heights and elevation levels. ● Delineate details of specific parts of construction such as stairs, foundation footings, walls, floors, ceilings, and roof eaves. ● Prepare door and window schedules for the entire house.
Vocabulary: Dimensions, Annotations, Specifications	**Core Resources:** Schoology LMS Autodesk Revit
Common Assessment(s): 1. Set of Construction Drawings (Sheets)	**Supplemental Resources:** What's in My Set of Architectural Documents?

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Landscape Architectural Design	**__X__ Essential _____ Important _____ Compact**
Big Idea: Landscape Architects use outdoor planning and design principles to create a functional residential landscape design plan.	
STEELS/Tech and Engineering Strand: 3.5.9-12.O Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality. 3.5.9-12.P Apply a broad range of design skills to a design thinking process. 3.5.9-12.Q Implement and critique principles, elements, and factors of design. 3.5.9-12.R Use a design thinking process to design an appropriate technology for use in a different culture. 3.5.9-12.S Conduct research to inform intentional inventions and innovations that address specific needs and wants. 3.5.9-12.V Apply principles of human-centered design. 3.5.9-12.Y (ETS) Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. 3.5.9-12.AA Safely apply an appropriate range of making skills to a design thinking process. 3.5.9-12.PP Demonstrate the use of conceptual, graphical, virtual, mathematical, and physical modeling to identify conflicting considerations before the entire system is developed and to aid in design decision-making.	**Pacing:** 2 weeks
Essential Questions: UEQ: What is landscape architectural design? LEQ: What are the steps of the landscape architectural design process?	**Understandings:** Students will know that… • The landscape architecture design process is used to design and create landscape plans that meet the client's needs and wants.

Knowledge:	**Do/Skills:** Students will be able to…
Landscape Architectural Design Process Site Inventory & Analysis Landscape Needs & Wants Landscape Design Styles & Ideas Outdoor Space Planning Landscape Structures, Hardscapes, & Plants	● Follow the steps of the landscape architectural design process to meet the client's needs and wants. ● Develop a site plan. ● Conduct a site inventory and analysis. ● Identify desirable and unsightly neighborhood views. ● Determine client's needs and wants. ● Plan outdoor use spaces. ● Develop space planning diagrams. ● Design a landscape architectural plan containing contour lines, plants, hardscapes, and garden structures.
Vocabulary: Shrub, Tree, Groundcover, Slope, Topography, Plant Buffers, Prevailing Winds, Sun/Shade Patterns, Desirable Views, Hardscapes, Softscapes	**Core Resources:** Schoology LMS
Common Assessment(s): 1. Landscape Design Plan	**Supplemental Resources:** USDA Plant Hardiness Zone Map

Grade, Subject/Course: Architectural Design / Honors (10-12)	
Unit: Honors Project	**__X__ Essential _____ Important _____ Compact**
Big Idea: Many architects through the decades have greatly influenced the architectural design field with their design characteristics and styles.	
STEELS/Tech and Engineering Strand: 3.5.9-12.A Use various approaches to communicate processes and procedures for using, maintaining, and assessing technological products and systems. 3.5.9-12.F Evaluate a technological innovation that arose from a specific society's unique need or want. 3.5.9-12.G Evaluate a technological innovation that was met with societal resistance impacting its development. 3.5.9-12.S Conduct research to inform intentional inventions and innovations that address specific needs and wants. 3.5.9-12.U Evaluate and define the purpose of a design. 3.5.9-12.GG Evaluate how technology and engineering have been powerful forces in reshaping the social, cultural, political, and economic landscapes throughout history. 3.5.9-12.KK Relate how technological and engineering developments have been evolutionary, often the result of a series of refinements to basic inventions or technological knowledge.	**Pacing:** Every 2 weeks throughout the semester
Essential Questions: UEQ: Which famous architects had the greatest influence on the architectural design discipline with their design characteristics and features? LEQ: What projects are famous architects best known for their design characteristics and architectural styles?	**Understandings:** Students will know that… ● Famous architects have influenced architecture with their unique design characteristics and architectural styles.
Knowledge: Past & Present Architects Design Characteristics & Architectural Styles	**Do/Skills:** Students will be able to… ● Research and present information about famous architects' backgrounds, education, awards, projects, design characteristics, and architectural styles.

Vocabulary: Architect, Landscape Architect, Interior Designer	**Core Resources:** Schoology LMS Wix
Common Assessment(s): 1. Blog (8 Posts)	**Supplemental Resources:**