Unit 06: Floor Plans

Content Area: **Science**
Course(s): **CAD Architect**
Time Period: **Semester 1**
Length: **6 weeks**
Status: **Published**

Standards

TEC.9-12.8.1.12.A.1	Construct a spreadsheet, enter data, and use mathematical or logical functions to manipulate data, generate charts and graphs and interpret the results.
TEC.9-12.8.1.12.A.2	Produce and edit a multi-page document for a commercial or professional audience using desktop publishing and/or graphic software.
TEC.9-12.8.1.12.F.1	Select and use specialized databases for advanced research to solve real world problems.
TEC.9-12.8.1.12.F.2	Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address educational, career, personal, and social needs.
TEC.9-12.8.2.12.F.1	Determine and use the appropriate application of resources in the design, development, and creation of a technological product or system.
TEC.9-12.8.2.12.F.3	Select and utilize resources that have been modified by digital tools in the creation of a technological product or system (CNC equipment, CAD software).

Enduring Understandings

- An architect would need to consider factors such as use, location, budget, client needs, size, etc. before a design can begin to develop.
- Computer aided drafting allows for an environment to design with creating and modifying abilites not possible using pencil and paper.
- An approach to a design will vary, depending on constraints and variables within a project.
- Creating templates, changing settings, and providing the software with other project information at the beginning of a design will reduce complications during its creation.
- Using universal/standardized parts/labels/icons in a technical drawing promotes coherience and understanding for all that view the project.
- Using multiple universal/stardardized cues within a component of a drawing will help people interpret information communiated through a drawing.
- Implimenting a symbol/key concept aids in creating a concise and clutterless design.

Essential Questions

- What information do you need before you start to create an architectural plan?
- What are the advantages and disadvantages of Computer Aided Drafting compared to traditional hand drafting?
- What considerations need to be made when gathering information to create an architectural drawing?
- How can initial setup and preparation of a project benefit you in the long run?
- What is the value in being able to identify and separate parts/labels of a technical drawing?

- In what ways are the symbols used in architectural plans the same as others seen in everyday life?
- Why are schedules created with architectural drawings and how does information from it correspond to the drawings themselves?

Knowledge and Skills

Floor Plans - Hand Drawing:

- Students will be able to identify the key elements of a floor plan.
- Students will be able to brainstorm house designs by creating multiple bubble diagrams.
- Students will be able to sketch rough floor plans and determine pros and cons from each design.
- Students will be able to draw a scaled floor plan of their chosen design, using a common architectural scale.
- Students will be able to calculate the square footage of each room on their design, as well as the total square footage.
- Students will be able to implement drafting rules/standards into their floor plan drawing.

Floor Plans - AutoCAD Drawing:

- Students will transfer their floor plan drawings to AutoCAD
- Students will apply skills developed to set up the drawing environment and layers they will need to for their design.
- Students will be able to identify the door and window types required for their homes.
- Students will be able to describe types of doors and windows using specific characteristics that exist on the components.
- Students will use correct symbols to represent doors and windows in their floor plans.
- Students will create an accurate door and window schedule to illustrate each door and window on the floor plans they create.
- Students will use appropriate tags in their floor plans to link information about each component in their schedules.
- Students will apply correct dimensioning techniques to their floor plans. (Exterior and Interior)
- Students will be able to illustrate staircases in a floor plan.
- Students will be able to recognize the purpose of hidden lines and stair direction identifiers and include them in their floor plans.
- Students will have the opportunity to address unique issues with their 1st floor plans.
- Students will be able to determine the appropriate size of their second floor based on their style of house. (Overhangs, 1/2 story, etc)
- Students will be able to revisit information covered and fix any remaining complications.

Assessments

https://docs.google.com/document/d/1wR7bQF-8AQoRrt0g4C3hKja0yjwDjC9_BiAmONWbTcI/edit

Modifications

https://docs.google.com/document/d/1ODqaPP69YkcFiyG72fIT8XsUIe3K1VSG7nxuc4CpCec/edit

Resources

- AutoCAD Resource Document
- Examples for Reference
- Bubble Diagram and Quick Sketch Presentation
- Elements of a good floor plan
- Scaled Drawing Presentation
- Preparing Plans for AutoCAD Presentation
- Dimensioning in AutoCAD Presentation
- Classifying Doors and Windows Presentation
- Window and Door Reference Sheet
- Architectural Symobls for Floor Plans Presentation
- Schedules.xls