Unit 09: Section Views

Content Area: **Science**
Course(s): **CAD Architect**
Time Period: **Semester 2**
Length: **3 weeks**
Status: **Published**

Standards

HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
HS-ETS1-4	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.

Enduring Understandings

- Certain elements of a residential home exist for structural purposes only. These elements rely on each other and proper installation to enusre structural integrity.
- Various structural materials exist, and are chosen based on occupancy, building use and location. Materials have evolved over time to reduce limitations of structures.
- A section detail drawing shows the interaction between components, highlighting assembly or function in a particular part of a structure.
- The section detail drawing of a gable end and exterior wall allows someone to see the skeleton of the house being designed.This information helps an individual conceptualize where other components exist and how they will be incorperated into a building.

Essential Questions

- What elements of a house are necessary for structural integrity?
- What methods have been developed to keep buildings structurally sound, while reducing design limitations?
- What details are illustrated in a sectional drawing?
- How do sectional drawings help in the development of elevation drawings?

Knowledge and Skills

- Students will create a sectional drawing and identify the key components of a framed structure.
- Students will be able to determine the pitch of a roof**.**
- Students will be able to calculate the angle of a roof from the pitch information using right angle trigonometry.
- Provided specific examples, each student will be able to create the Gable End Roof Framing Sectional Drawing.
- Students will be able to manipulate the multi-leader style manager to create labels on their sectional drawings.
- Students will be able to test their knowledge of structural components in residential buildings.

Assessments

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

Modifications

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

Resources

Tutorials

PowerPoints provided for instruction and reference

Demonstrations:

- Getting Started on a Sectional Drawing
- The framing of a residential house
- Specific framing - Doors, Windows, and Passive Fire Protection
- Roof Framing
- Interaction of components and drawing labels