Unit 08: Skeleton Framing - Examining the Bones of a House

Content Area: **Technology**
Course(s): **Architecture**
Time Period: **April**
Length: **12 Blocks**
Status: **Published**

Enduring Understandings

1. The purpose of walls is to support the load of the roof and direct it downward to the foundation.

2. Efficient wall framing involves the careful planning of window & door locations, as well as an understanding of local building codes.

3. Residential construction methods are determined by environmental considerations, type of structure, cost factors and the availability of materials.

Essential Questions

1. How is the load of the roof carried down to the foundation?

2. How do structural forces affect a typical residential structure?

3. Why would larger timber be needed in certain parts of a house?

4. Why would some parts of a home be prefabricated and built off-site while others are built solely on-site?

Content

Vocabulary:

stud, king stud, trimmer, sole plate, top plate, sill, cripple stud, header, corner framing, load bearing wall, non-load bearning wall, truss, joist, "T" framing, "I" framing, rough opening, joist hanger, timber, lumber

Skills

1. Discuss the purpose of ceiling and wall framing.

2. Discuss how structural members respond to the different types of forces.

3. Apply proper framing techniques in the construction of a scale model wall.

4. Apply proper framing techniques in the construction of door and window openings.

5. Apply proper framing techniques when connecting multiple walls together.

6. Construct scale model of the floor and walls of a custom house using proper framing techniques.

Resources

11x17 Paper / Drawing Boards / T Square / Pencil / Erasers / Rendering Markers

Standards

NJ: Grade 9 - 12

9.3 CTE: B. Architecture & Construction Career Cluster

Academic Foundations:

9.3.12.AC□DES.5 Identify the diversity of needs, values and social patterns in project design, including accessibility standards.

Communication Skills:

9.3.12.AC□DES.6 Apply the techniques and skills of modern drafting, design, engineering and construction to projects.

9.3.12.AC□DES.7 Employ appropriate representational media to communicate concepts and project design.

9.3.12.AC□DES.1 Justify design solutions through the use of research documentation and analysis of data.

Problem-Solving and Critical Thinking:

9.3.12.AC□DES.8 Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.

9.3.12.AC.4 Evaluate the nature and scope of the Architecture & Construction Career Cluster and the role of architecture and construction in society and the economy.

9.3.12.AC.6 Read, interpret and use technical drawings, documents and specifications to plan a project.

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