Unit 09: Ceiling and Roof Framing - Put a Roof Over Your Head

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

Enduring Understandings

1. A roof must be designed to withstand live and dead loads.

2. Roof design is often driven by the climate, geographic location and architectural style of a house.

3. The appearance of the house is greatly affected by the design of the roof.

4. Roof construction follows similar standards as wall framing.

Essential Questions

1. Why does roof design change between architectural styles?

2. Why are there so many different roof styles?

3. Why does the slope of the roof vary between houses?

4. Why do most houses have a combination of roof types?

5. What determines which roof style should be used on a home?

6. Why is roof pitch so important?

Content

Vocabulary:

rafter, joist, span, truss, rim joist, hipped, gable, gambrel, shed, salt box, ridge, valley, roof pitch, roof plan drawing, shingle, dormer, attic, gusset plate

Skills

1. Analyze the roof of a house to determine its style.

2. Analyze the floor plan of a house to determine an appropriate roof design.

3. Design a roof for a custom house and create a roof plan drawing for it.

4. Construct a scale model roof truss.

5. Construct a scale model roof for a custom house.

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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