



Course Outcome Summary

Course Information: **Carpentry**

Description: This class introduces students to basic carpentry practices, such as the use of hand and power tools, measurement, and layout practices. Skills will then be used in the construction of larger projects; basic math skills will also be stressed. In this class, we will place value on those things a potential employer would consider important in maintaining and keeping a job. Students will learn Blueprint Reading, Measuring/Layout Tools, Foundation Systems, Flooring Systems, Wall Layout, Roofing Systems, Exterior Finishing, and Interior Finishing.

Instruction Level: Grades 9-12

Total Credits: 1

Prerequisites: Intro Technology Education

Course Standards:

Common Career and Technical Core:

- Communicate and collaborate with others to accomplish tasks and develop solutions to problems and opportunities.
- Identify and apply employability skills.
- Assess benefits and challenges of working in diverse settings and on diverse teams.
- Apply leadership skills in real-world, family, community and business and industry applications.

Content Standards:

- Interpret and use residential construction blueprints and specifications.
- Estimate materials from blueprints and specifications
- Convert scaled blueprint drawing measurements to full dimensions for a given construction project.
- Apply measurement systems in the planning and layout process used in the residential construction industry
- Prepare the site layout utilizing common surveying equipment and/or create a site plan.
- Demonstrate the safe and appropriate use of hand tools common to the residential and commercial construction industry.
- Demonstrate the safe and appropriate use of portable power tools that are common to the residential construction industry and are appropriate to the individual student's level.

- Demonstrate the value and necessity of practicing occupational safety in the construction industry facility and job site.
- Demonstrate the variety of building phases, systems and techniques used in architecture and construction.
- Demonstrate project management procedures and processes as they occur in a construction project.

ACT Reading and Writing Standards:

- Show a basic understanding of the persuasive purpose of the task by taking a position on the issue in the prompt.
- Generate reasons for a position
- Maintain a focus on the general topic in the prompt throughout the essay
- Provide a simple organizational structure by logically grouping some ideas
- Present an introduction and conclusion
- Locate and interpret minor or subtly stated details in somewhat challenging passages
- Draw logical conclusions in more challenging passages
- Paraphrase virtually any statement as it is used in somewhat challenging passages
- Order simple sequences of events in somewhat challenging literary narratives
- Understand point of view in somewhat challenging passages

Unit

- 1. Blueprint reading and Drafting**
- 2. Measurement/Layout Tools**
- 3. Safety**
- 4. Foundation Systems**
- 5. Flooring Systems**
- 6. Wall Layout**
- 7. Roofing Systems**
- 8. Exterior Finishing**
- 9. Interior Finishing**

Unit Outlines

1. Unit 1: Drafting and Blueprint Reading

Standards

- Interpret and use residential construction blueprints and specifications.
- Estimate materials from blueprints and specifications
- Convert scaled blueprint drawing measurements to full dimensions for a given construction project.

Essential Question:

Students will be able to answer the question:

- How does a blueprint guide the construction of a project?

Essential Knowledge:

Students, using previously learned knowledge, will be able to read a blueprint.

- Blueprint Exercise #1: Line Types
- Blueprint Exercise #2: View Identification
- Blueprint Exercise #3: Dimensioning
- Blueprint Exercise #4: Openings
- Blueprint Final: “Tiny House”

2. Unit 2: Measurement/Layout Tools**Standards**

- Apply measurement systems in the planning and layout process used in the residential construction industry
- Prepare the site layout utilizing common surveying equipment and/or create a site plan.

Essential Question:

Students will be able to answer the question:

- How are measuring tools different?
- Which measuring tool should be used for various situations?

Essential Knowledge:

Students will be able to identify, read, and select proper measuring tools to determine the size of a given part.

- Ruler Reading Presentation
- Ruler Reading Worksheet
- Speed Square Reading Presentation
- Speed Square Reading Worksheet
- Framing Square Reading Presentation
- Framing Square Reading Worksheet
- Surveying Equipment Presentation
- Surveying Equipment Worksheet
- Measurement Reading Lab
- Measurement Reading Test

3. Unit 3: Safety**Standards**

- Demonstrate the safe and appropriate use of hand tools common to the residential and commercial construction industry.

- Demonstrate the safe and appropriate use of portable power tools that are common to the residential construction industry and are appropriate to the individual student's level.
- Demonstrate the value and necessity of practicing occupational safety in the construction industry facility and job site.

Essential Question:

Students will be able to answer the question:

- Why is safety in the workplace important in society?

Essential Knowledge:

Students will pass all safety tests so they can work safely and efficiently in the shop.

- General Safety Presentation
- Hand Tool Safety Presentation
- Power Saw Presentation
- Power Drill Presentation
- Pneumatics Presentation
- Shop/Equipment Safety Test
- Demonstrations of exercises

4. Unit 4: Foundation Systems

Standards:

- Demonstrate the variety of building phases, systems and techniques used in architecture and construction.
- Demonstrate project management procedures and processes as they occur in a construction project.

Essential Question:

Students will be able to answer the question:

- What is the purpose of the foundation system?

Essential Knowledge:

Students will be able to correctly layout and identify components used in a residential foundation system.

- Site Plan Presentation
- Foundation Layout Lab
- Foundation Layout Test

5. Unit 5: Floor Systems

Standards:

- Demonstrate the variety of building phases, systems and techniques used in architecture and construction.
- Demonstrate project management procedures and processes as they occur in a construction project.

Essential Question:

Students will be able to answer the questions:

- What are the similarities and differences between the different floor systems?

Essential Knowledge:

Students will be able to properly identify and construct a floor system.

- Floor System presentation
- Floor System Lab
- Floor System Test

6. Unit 6: Wall Layout**Standards:**

- Demonstrate the variety of building phases, systems and techniques used in architecture and construction.
- Demonstrate project management procedures and processes as they occur in a construction project.

Essential Question:

Students will be able to answer the questions:

- Why do carpenters use the on-center spacing that they do?
- Why are some walls built differently than others?
- How has wall construction evolved?

Essential Knowledge:

Students will be able to correctly identify wall construction components.

- Wall Layout Presentation
- Wall Layout Lab
- Wall Layout Test

7. Unit 7: Roofing Systems**Standards:**

- Demonstrate the variety of building phases, systems and techniques used in architecture and construction.
- Demonstrate project management procedures and processes as they occur in a construction project.

Essential Question:

Students will be able to answer the questions:

- What are the different roof types?
- How is a roof constructed?
- What are the benefits and negatives of the different roofing materials?

Essential Knowledge:

Students will be able to properly form a part using the metal lathe.

- Roofing Presentation
- Roofing Lab
- Roofing Test

8. Unit 8: Exterior Finishing

Standards:

- Demonstrate the variety of building phases, systems and techniques used in architecture and construction.
- Demonstrate project management procedures and processes as they occur in a construction project.

Essential Question:

Students will be able to answer the questions:

- What is the purpose of exterior finishes?
- What are the different types of exterior finishes?

Essential Knowledge:

Students will be able to correctly select and apply the correct exterior finish according to the blueprint.

- Exterior Finishes Presentation
- Exterior Finishes Lab
- Exterior Finishes Test

9. Unit 9: Interior Finishing

Standards:

- Demonstrate the variety of building phases, systems and techniques used in architecture and construction.
- Demonstrate project management procedures and processes as they occur in a construction project.

Essential Question:

Students will be able to answer the questions:

- What are interior finishes made from?
- How are interior finishes applied?

Essential Knowledge:

Students will be able to apply interior finishes that are aesthetically pleasing.

- Interior Finishes Presentation
- Interior Finishes Lab
- Interior Finishes Test