

**Sample Lesson Plan from**

# **Building Construction**

**Instructor Guide**

## Module 7 - Wall Framing

### Task 7 - Construct and install headers

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**Performance Objective:** Given working drawings and specifications, an erected wall frame with window openings, a door, a window frame, braces and the necessary tools, equipment, and materials, the student will construct and install headers. The headers must be set plumb and in alignment with the wall frame.

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#### Teacher Preparation:

1. Review lesson plan.
    - a. Lesson introduction and overview
    - b. Safety rules and regulations
    - c. Motivational techniques to be used
  2. Construct or review test to be given.
  3. Secure necessary tools, equipment and materials.
  4. Establish safety rules and regulations.
  5. Secure audio-visual materials and equipment.
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#### Resources:

Drawings  
Specifications  
Door frame  
Window frame  
Dimensioned lumber  
Saw  
Tape measure  
Square  
Level  
Hammer  
Nails

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**Application:** Given the necessary tools, equipment and materials, the student will practice the task as taught.

**Evaluation:** Evaluate to ensure the student can construct and install headers. The headers must be set plumb and in alignment with the wall frame. Clearance for the door must assure that the door moves without binding.

#### Summary/Closure:

1. Summarize lesson and make other demonstrations as necessary.
2. Reemphasize safety precautions.
3. Introduce next task and make necessary assignments.

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#### Theory

1. Explain the necessary safety precautions.
  - a. Wear appropriate clothing for work and weather conditions.
  - b. Avoid loose or ragged clothing.
  - c. Leather shoes with heavy soles should be worn to protect the feet.
  - d. Wear hard hat at all times.
  - e. Wear safety glasses when necessary.
  - f. Wear gloves when handling rough material.
  - g. Select the correct type tools for the job.
  - h. Avoid using tools in poor condition.
  - i. Keep edges of tools pointed down.
  - j. Keep working area clean and orderly.
2. Explain the purpose of a header.

A header support the parts of studs that have been cut away to install a window or door. Most headers are built of two 2 inch boards with one-half inch spacer between the boards to equal the three and one-half inch thickness needed.
3. Define a trimmer stud.

Trimmer studs are studs that have been cut off to the length needed in order to support the header. They are placed under the header and nailed to it.
4. Define a cripple stud.

A short stud installed over a window, door, or fireplace header and under a window sill. The cripple studs are necessary to support the opening that occurs because a full length stud has been cut.
5. Describe the procedure for installing door and window headers.
  - a. From the blueprints, determine the opening required.
  - b. Lay out the rough opening and cut the necessary studs to length.
  - c. Cut the header to length.
  - d. Cut and install trimmer studs to each side of the openings to support the header.
  - e. Check for square after installation.

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#### Demonstration

1. From a set of blueprints, select a window or door opening.
2. Erect a wall section that includes a window and door opening.
3. Measure and layout area of window or door opening.
4. Cut the full length studs to allow for the header to be installed.
5. Measure length of header and cut two 2" x 4" boards to specifications. The width of a header is determined by the length of the opening it must span.
6. Cut a piece of one-half inch plywood or other type wood of same thickness to use as a spacer between the headers.
6. Measure trimmer and cripple studs distance and cut to specifications.
7. Install trimmer and cripple studs by attaching to existing full length studs at the window or door opening.
8. Install header above trimmer studs and nail in place.
9. Check for squareness.
10. Some window openings require a header to be installed above and below the window opening. The length of the opening and local building codes determine when a header is to be used under a window.