



## WEATHERIZATION

### TOPIC OF STUDY

Auditing



90 MINUTES

### KEY TERMS

work scope  
crew chief

## LESSON

Energy Auditor Work Scope

## OBJECTIVES

Students will:

- Read a work scope document created by an energy auditor
- Identify the tasks required and use as a checklist to understand the order of prep, transport, work, and breakdown

## BIG IDEA(S)

A work scope lists all the measures which will be done at a specific work site.

## TASK LIST SUBCATEGORY

- 313 Explain local ordinances or laws regarding safe transport of materials
- 801 Identify the principles of building science
- 810 Use energy efficiency industry vocabulary

## OVERVIEW

A work scope lists all the measures which will be done at a specific work site and can identify the workers who will be doing them. Knowing how to read such a document allows an installer to make sure the right tools—and quantity—and materials are loaded for the needs of the day's work. This activity should be used in conjunction with any of the labs in the manual. For this presentation, we are using *Dense Pack Insulation Lab* as an example.

## STANDARDS

### PA/SDP

**3.4.10.D3.** Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and the environment.

### Construction Career Pathway (AC-CST).

5. Apply practices and procedures required to maintain jobsite safety.
6. Manage relationships with internal and external parties to successfully complete construction projects.
7. Compare and contrast the building systems and components required for a construction project.
8. Demonstrate the construction crafts required for each phase of a construction project.
9. Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.

### NGSS

CL Analyze data using tools, technologies, and/or models in order to make valid and reliable scientific claims or determine an optimal design solution.





## INSTRUCTIONAL

### TEXT/REFERENCES

*Energy Conservation Handbook*. pp. 17, 69-71, 137-142

### MATERIALS NEEDED

**Teacher Presentation:** Handout NREL 6 Domains of the Work Scope Appended

**Content:** Collect and duplicate appropriate work scope examples for students and create a work scope from a blank form.



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## IMPLEMENTATION (LESSON PLAN)

1. The work scope (or scope of work) must be complete and understandable. It must delineate the entire scope of work to be performed and specify all the tasks within that scope. Any scope of work must cover the following points:
  - What needs to be done
  - Who will do what
  - When it should be done
  - Where it should be done
  - How contract performance will be judged
  - The scope of work may also define how the job is to be accomplished
2. From the scope, the installer must then list all of the tools and materials that are to be loaded onto the truck. If multiple installers are to work at a site, it is important to know if there are enough tools and materials for everyone. Provide the installer job description (appended) and highlight how all the 6 domains relate to the work scope.
3. Review completed work scope forms with students that illustrate what is to be done using the insulation job on pp. 137-42. Use this lesson within a few days of the *Dense Pack Insulation Lab* in order to plan a work scope plan based on that work. Remind students that often more than one task is performed in a home on any one occasion. Since this requires the movement of the blower to a home, this might be the only job accomplished on this particular day.

## RESOURCES/LINKS

Sample WAP Job Work Order Form

<http://oeo.sc.gov/documents/weatherization/Work%20Plan%20Docs.pdf>

Installer Task Analysis NREL (Provides a comprehensive overview of what is needed for the job.)

<https://www.energy.gov/sites/prod/files/2014/01/f7/51671.pdf>

Solar Crew Chief Description

<https://www.irecsolarcareermap.org/jobs/solar-crew-chief>



## RESOURCES/LINKS (CONTINUED)

### Retrofit Installer Technician Specifications and Content Outline

Job Description: A Retrofit Installer Technician installs energy-efficiency measures to single family or 2-4 unit-homes using a variety of building science best practices to improve, safety, comfort, durability, indoor air quality, and energy efficiency.

Domains/Tasks
<b>Domain I: Maintain safety</b>
Task 1: Follow work rules of jurisdiction having authority
Task 2: Handle materials/equipment according to manufacturer specifications
Task 3: Handle tools according to manufacturer specifications
<b>Domain II: Prepare for the job (before arriving to job site)</b>
Task 1: Attend training
Task 2: Gather materials and supplies
Task 3: Gather tools
<b>Domain III: Prepare and maintain tools and materials on-site</b>
Task 1: Set up tools
Task 2: Set up materials
<b>Domain IV: Prepare and maintain job site</b>
Task 1: Attend job safety meeting
Task 2: Implement safety protocol (rigging, ventilation, blocking)
Task 3: Use protective barriers (drop cloths)
Task 4: Report preexisting conditions (that are not in scope)
Task 5: Protect exterior environment
<b>Domain V: Implement work scope</b>
Task 1: Locate specific work areas
Task 2: Verify access to work areas
Task 3a: Install air sealing measures
Task 3b: Install loose fill insulation
Task 3c: Install or patch moisture barriers
Task 3d: Rough in mechanical ventilation systems
Task 3e: Identify mechanical systems
Task 3f: Identify combustion appliance safety hazards
Task 3g: Install dense pack insulation
Task 3h: Install windows and doors
Task 3i: Identify electrical installation needs (rough-in, fans)
Task 3j: Identify plumbing installation needs
Task 3k: Identify/install roofing and flashing installation needs
Task 4: Clean as you go (organize)
Task 5: Address deviations from work scope
<b>Domain VI: Wrap up</b>
Task 1: Pick up tools and materials
Task 2: Clean up and close out
Task 3: Participate in crew debriefing (after action review, post construction job review)



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