# Preparing for the Job

Weatherization Installer/Technician Fundamentals

Learning Objectives

By attending this session, participants will be able to:

* Determine the requirements of basic work order components.
* Match tools and materials to work scope.
* Recognize work order errors and oversights.
* Identify the various tools and equipment associated with typical weatherization measures.
* Demonstrate safe techniques for loading and unloading equipment from a truck.
* Describe the importance of a well-organized trailer and job site for productivity and safety.

Key Terminology

Community action agency (CAA)

Gross vehicle weight (GVW)

Work order

Supplemental Materials

Resources

“Gearing Up: Outfitting a Wx Crew Trailer.” *WxTV*. Montana Weatherization Training Center. <www.wxtvonline.org>.

Sample Calibration and Maintenance Schedule.

Sample Equipment Maintenance Guide (Owner’s Manual: Blower Krendl 1000).

Handouts

**Exercise #1**

Gill, Tony. “Expanded Material Procurement Lists.”

Gill, Tony. “Math for Cellulose Volume Calculation.”

Gill, Tony. “Sample Work Order.” Instructor version.

Gill, Tony. “Sample Work Order.” Student version.

Toolbox Checklist Form.

**Hands-on Activities**

**Exercise #1 − Pre-Job Planning (1 hour)**

Divide the class into small groups. Give each group a copy of the Sample Work Order and the Expanded Task List. Have each group:

* List any measures/instructions that might need clarification.
* Identify any measures that may have been overlooked.
* Determine materials needed for all measures and where to get them.
* Determine tools required to complete the job.
* Calculate the number of bags of cellulose needed.

After about 15 minutes, distribute the Expanded Material Procurement Lists and Math for Cellulose Volume Calculation handouts before groups report on each issue.

Create a class consensus response list for each issue. (See listed suggestions.) The class will most likely raise other valid points that require resolution. See the Project Typical Work Order, Floor Plan, and Task List slides, as needed, to clarify points of discussion.

1. Measure #4 – What about air sealing the ceiling penetration of the chimney in the ell? Should either chimney be air sealed at the basement/crawl ceiling/first floor penetration? How about damming to keep insulation away from chimneys?
2. Measure #11 – Will replacement clapboards be available?
3. Measure #13 – Should the plywood be pressure treated?
4. Measure #14 – Will personal protective equipment (e.g., Tyvek suit, respirator, positive-pressure air machine) be necessary?
5. Different community action agencies (CAAs) will have different inventory/procurement systems. Hand out the lists and ask students to describe their systems. Lead a discussion of the advantages and disadvantages of the systems described.
6. Students who correctly calculate the wall area will discover that the work order overlooked the wall between the kitchen and shed. Add it to the total square footage. To convert cubic feet into a bag count, survey students about cubic feet of cellulose per bag from local providers and calculate the number of bags as a class.

As a group, determine how to handle each situation. Possibilities include:

* Making a phone call to the auditor.
* Issuing a change order.
* Just doing whatever is necessary! Resolving paperwork on return to shop.
* Others?

**Exercise #2 – Truck Organization (at end of class)**

Students will load a truck with the tools and materials listed in Exercise #1. If time is short, have truck partially loaded already and allow students to do inventory and load remaining items.

Include some bulky or heavy items to give students the ability to practice safe lifting techniques.

**Relevant Standard Work Specifications**

1.100.1 – Global Worker Safety

**Classroom Props**

* Various small tools and equipment
	+ Sidewall drill bits for different siding types
	+ Drill shroud
	+ Wall tube
	+ Multipurpose tool for aluminum siding
	+ Combustion analyzers
	+ Duct materials
	+ Vent pipe
	+ Etc., per Exercise #1

**Class Overview**

* Use the presentation to deliver three main points about tools, materials, and equipment.
	+ Using the proper tool for the job is safer and more effective than “making do.”
	+ Proper equipment care and maintenance are as much a part of the job as installing measures. Maintained equipment is more reliable and lasts longer.
	+ Organize trucks and job sites to maximize safety and efficiency. If locating tools takes half the day, reorganize the vehicles.
* Ask students if their agencies use maintenance schedules to organize vehicle and equipment maintenance. Hand out appropriate sections of a manufacturer’s maintenance guide and explain how these can be used to develop maintenance schedules.
* Field staff members can grow restless in a lecture setting. Make the class as interactive as possible by integrating workshop/exercise sessions with the lecture. For the exercises, divide the class into groups of four using a count-off system to group people who normally don’t work together.
* Display various tools and materials in class, as appropriate, to maintain interest.
* Take students to a well-organized storage area of the building or tour a work truck to point out organizational tactics. Ask if they had a race to locate a certain drill bit, hose, or other tool, how long it would take them on a typical job site. Emphasize that good organization eases setup and cleanup on a site. For a more hands-on option (if time permits), see Exercise #2.