Module Overview

This module introduces trainees to home weatherization including the purpose and benefits of the program. Trainees will learn how homes gain and lose heat energy and how those losses can be reduced by sealing the building shell and by adding insulation.

Objectives

Upon completion of this module, the trainee will be able to do the following:

1. Explain the purpose, benefits, and origins of the home weatherization program.
2. Explain how home weatherization goals are met by reducing heating and cooling losses and by reducing air infiltration.
3. Describe how sources of heating and cooling losses and air filtration points are located.
4. Describe the methods and materials used to reduce heating and cooling losses and to stop air infiltration.
5. Describe how the different components that make up the building shell can affect a home’s energy usage.

Performance Tasks

This is a knowledge-based module; there are no performance tasks.

Materials and Equipment

Markers/chalk  Samples of insulating materials
Pencils and scratch paper  Flexible insulation
Whiteboard/chalkboard  Rigid foamboard
Introduction to Weatherization  Loose-fill insulation
PowerPoint® Presentation Slides  Spray-in-place insulation
Multimedia projector and screen  Samples of caulks, sealants, and weatherstripping
Desktop or laptop computer  Compact fluorescent lamps
Appropriate personal protective equipment  Light-emitting diode lamps
Blower door (optional)  Module Examinations*
Infrared camera (optional)

* Single-module AIG purchases include the printed exam. If you have purchased the perfect-bound version of this title, download the exam from the IRC using your access code.

Safety Considerations

Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly. Trainees may be exposed to hazardous materials and may be required to work with certain materials such as insulation and/or sealants that require special protective equipment. Make sure that all trainees are briefed on appropriate safety procedures.
Additional Resources

This module is intended to present thorough resources for task training. The following reference works are suggested for both instructors and motivated trainees interested in further study. These are optional materials for continued education rather than for task training.

*Insulate and Weatherize.* Newtown, CT: Taunton Press.

Teaching Time For This Module

An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 17½ hours are suggested to cover *Introduction to Weatherization.* You will need to adjust the time required for hands-on activity and testing based on your class size and resources.

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Session V. Weatherizing a Home, Part Two

A. Sealing Air Leaks
   1. Caulks and Sealants
   2. Weatherstripping

B. Losses Through Windows and Doors
   1. Upgrading Windows and Doors
   2. Replacement Windows
   3. Replacement Doors

C. Energy-Efficient Roofs

D. Sealing and Insulating Air Ducts

Session VI. Reducing the Baseload

A. Appliances
   1. Refrigerators
   2. Other Appliances
   3. Water Heaters

B. Lighting

C. The Energy Auditor as Educator

Session VII. Careers in Weatherization; NCCER Training; Review and Testing

A. Careers
   1. Weatherization Technician
   2. Weatherization Crew Chief
   3. Energy Auditor

B. NCCER Training

C. Advancement Opportunities in Weatherization

D. Module Review

E. Module Examination
   1. Trainees must score 70 percent or higher to receive recognition from NCCER.
   2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.