# Introduction to Weatherization Quiz Answer Key

# Weatherization Energy Auditor – Single Family

DISCLAIMER: This quiz is intended for use as an interim review. Distribute to students after training the associated curriculum chapter, or the next day, to refresh the lesson. Being publicly available renders this specific quiz invalid for use as a formal assessment tool for accreditation.  See Tier 2.14(b) IREC 01022 ISPQ accreditation standard.

Learning Objectives

By attending this session, participants will be able to:

* Discuss the historical perspective of the Weatherization Assistance Program.
* Name characteristics of the client base served by the program.
* Recognize that building science guides the selection of measures installed with program dollars.
* Describe the principles of cost-effectiveness and the savings-to-investment ratio.
* Recognize modern weatherization measures.
* Cite communication guidelines for working with clients.
* Describe how energy audits guide weatherization work.

Questions and Rationale

**Objectives:**

* Describe the principles of cost-effectiveness and the savings-to-investment ratio.

**Question:**

1. The savings-to-investment ratio (SIR) is calculated by:

1. The cost of a measure divided by program support.
2. The amount of energy savings divided by the cost to install a measure.
3. The amount of energy savings multiplied by cost to install a measure.

**Rationale:**

**A** **& C** are incorrect because SIR is savings divided by cost.

**B** is correct because the proper formula for calculating SIR is savings divided by cost.

**Objective:**

* Discuss the historical perspective of the Weatherization Assistance Program.

**Question:**

2. A feature of the weatherization program that was typically non-existent in the 1980s was:

1. Comprehensive diagnostic technology.
2. Structured training and technical assistance.
3. Volunteer labor used to install measures.

**Rationale:**

**A** is correct. In the 1980s the availability of equipment and/or adequate training was limited.

**B** is incorrect. Structured training and technical assistance became more formalized and common in the 1990s.

**C** is incorrect. Volunteers installing measures was more typical of the late 1970s to mid ‘80s.

**Objective:**

* Recognize that building science guides the selection of measures installed within program dollars.

**Question:**

3. Which of the following **BEST** identifies the criteria for selection of measures to be installed in a home with WAP funds?

1. Cost-effectiveness based on building science and energy prices.
2. Availability of fiberglass or cellulose insulation for dense-packing.
3. Skill and resources of local crews/contractors.

**Rationale:**

**A** is correct. These are what guide measure installation with program funds.

**B** is incorrect because local availability should not be a deciding factor for measure installation. Resources should be located to meet the priority list or individual audit recommendations.

**C** is incorrect because the local workforce should be trained and equipped to install the appropriate measures.

**Objective:**

* Name characteristics of the client base served by the program.

**Question:**

4. Which of the following is true about the energy burden of low-income households?

1. The average energy expenditure in low-income households is $552 annually.
2. More than 90% of low-income households have annual incomes less than $22,000.
3. 17% of annual income in low-income households is spent on energy vs. 4% by other households.

**Rationale:**

**A** is incorrect. The average energy expenditure in low-income households is $1,800 annually.

**B** is incorrect. More than 90% of low-income househoulds have incomes of less than $15,000 annually.

**C** is correct. (Source data: Brown, Marilyn, and Linda Berry. “Weatherization Assistance: The Single Family Study.” *Home Energy* Sept./Oct. 1993. <www.homeenergy.org>.)

**Objective:**

* Recognize modern weatherization measures.

**Question:**

5. An example of a relatively new weatherization measure is:

1. A storm window.
2. Blower door guided air sealing.
3. Mobile home skirting.

 **Rationale:**

**A & C** are incorrect because these were measures applied in the very early days of the program and were found not to be cost effective.

**B** is correct because use of the blower door was proven extremely effective in locating larger air leaks.

**Objective:**

* Cite communication guidelines for working with clients.

**Question:**

6. Communication of attitudes and feelings are expressed in a number of ways. Which of the following makes up 55% of a person’s communication?

1. Tone of Voice
2. Words
3. Body language

 **Rationale:**

**A** is incorrect at 7%.

**B** is incorrect at 38%.

**C** is correct at 55%.

(Source: Mehrabian, Albert, and Ferris, Susan R. “Inference of Attitudes from Nonverbal Communication in Two Channels.” Journal of Consulting Psychology 31.3 (1067): 248-258.)