



## WEATHERIZATION

### TOPIC OF STUDY

Weatherization



90 MINUTES

### KEY TERMS

air sealing  
building science  
house as a system  
Insulation  
retrofit  
weatherization

## LESSON

History of Weatherization and the Weatherization Assistance Program

## BIG IDEA(S)

The US government has encouraged and supported weatherization since the 1970s.

## OBJECTIVES

Students will:

- Define and describe the history of weatherization in the US.
- List a minimum of five weatherization priorities identified by the US government.
- Define and describe the current Weatherization Assistance Program (WAP).
- Explain the steps of the WAP process.
- Compare and contrast weatherization of new construction and retrofitting old homes.

## TASK LIST SUBCATEGORY

- 102 Describe how energy is fundamental to our everyday lives
- 104 Describe sources and uses of energy
- 809 Use industry vocabulary
- 801 Identify the principles of building science
- 809 Apply math skills to weatherization

## OVERVIEW

The US government has encouraged and supported weatherization since the 1970s. Current programs attempt to use the most cost-effective strategies to create the largest reductions of energy. These strategies were identified and a priority list was created. As a result, home owners save money on utility bills. Additionally, the strategies can create a more comfortable home. Newly constructed homes usually have these strategies/ measures built in during the construction process. Older homes built prior to the early 1970s must be retrofitted with weatherization measures.

## STANDARDS

### PA/SDP

**3.2.10.B6.** Explain how behavior of matter and energy follow predictable patterns that are defined by laws.

## DEFINITIONS OF KEY TERMS

Air sealing: the process of making a home more airtight by sealing up small or big gaps, cracks, and holes.

Building science: using modern technology to study construction, maintenance, safety and durability

House as a system: components of a building are connected to each other and form a single system; conditions in one part of the home affect conditions in another part of the home.





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## DEFINITIONS OF KEY TERMS (CONTINUED)

**Insulation:** helps keep warm and cool air from leaving and entering the home by preventing heat loss

**Retrofit:** weatherization of existing older homes (as opposed to new construction)

**Weatherization:** the process of reducing energy consumption and increasing energy efficiency of the building

## INSTRUCTIONAL

### TEXT/REFERENCES

Training Handbook, pp. 7-12

### MATERIALS NEEDED

**Content:** Year 1 Lesson 4 Worksheet

**Technology:** Device with internet to watch YouTube video

## IMPLEMENTATION (LESSON PLAN)

### ENGAGE

1. Show the “Weatherization Assistance Program: A Program that Works” video: <https://youtu.be/6VaF6GO0W-8> (10 min)
2. Ask students to answer Year 1 Lesson 4 worksheet questions and record 3 facts while watching the video.
3. At the end of the video ask students to share their facts about WAP.

### EXPLORE

1. In pairs have students use their laptops/tablets to look up the following websites about the WAP:
  - LIHEAP Handbook Weatherization Assistance Program: [http://services.dpw.state.pa.us/oimpolicymanuals/liheap/698\\_Weatherization/698.2\\_Types\\_of\\_Weatherization\\_Work\\_Performed.htm](http://services.dpw.state.pa.us/oimpolicymanuals/liheap/698_Weatherization/698.2_Types_of_Weatherization_Work_Performed.htm)
  - South Central Community Action Programs: Weatherization: <https://www.sccap.org/weatherization>
  - Philadelphia Housing Development Corporation: <http://www.huntingparknac.org/files/weatherization-assistance.pdf>
2. Ask students to make a list of all of the services covered under the WAP.
3. Have students read pages 9-13 in the *Energy Conservation Training Handbook*.
4. Once students are familiar with the WAP history and services, have students create a 1-min informational video that could be shown to potential WAP customers. Video must contain the following elements:
  - What is weatherization?
  - What does weatherization do?
  - Who pays for it?
  - Who qualifies for weatherization?





## IMPLEMENTATION (LESSON PLAN) - CONTINUED

### EXPLAIN

- Students share their videos with the rest of the class.

### EXTEND/EVALUATE

- Ask a family member if they have heard about the WAP. Share your informational video with them.

## HOMEWORK

Watch the Energy Coordinating Agency's web site's video about WAP in Philadelphia:

<https://www.ecasavesenergy.org/who-we-are>

## RESOURCES/LINKS

Energy Coordinating Agency (ECA):

<https://www.ecasavesenergy.org>

How to Apply for the Weatherization Assistance Program:

<https://www.energy.gov/eere/wap/how-apply-weatherization-assistance>

LIHEAP Handbook Weatherization Assistance Program:

[http://services.dpw.state.pa.us/oimpolicymanuals/liheap/698\\_Weatherization/698.2\\_Types\\_of\\_Weatherization\\_Work\\_Performed.htm](http://services.dpw.state.pa.us/oimpolicymanuals/liheap/698_Weatherization/698.2_Types_of_Weatherization_Work_Performed.htm)

South Central Community Action Programs: Weatherization:

<https://www.sccap.org/weatherization>

Update from the Department of Energy's Weatherization Assistance Program webinar February 2021:

[https://youtu.be/9aSVT\\_gkS6Q](https://youtu.be/9aSVT_gkS6Q)

Weatherization Assistance Program: A Program that Works:

<https://youtu.be/6VaF6GO0W-8>



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