

Name:



# Cold House, Hot House, Green House

Saving energy at home requires paying attention to the building's windows, walls, and roof.

by [Emily Sohn](#)

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Before reading:

1. Name three things that you use or do that waste energy.
2. What do you think "sustainable" means? What might "sustainable architecture" involve?

**Directions: Go to the website below to read the article and answer the questions that follow.** *(To open, hold down the control key while your mouse is hovering over the link)*

<https://student.societyforscience.org/article/cold-house-hot-house-green-house>

1. How does the energy used in the United States for heating and cooling affect the environment?
2. Define in **your own words** "green building."
3. What are two alternate energy sources that could be used to power a home?
4. How have windows changed and improved over the years?
5. How can roofing materials help make homes more energy efficient?

After reading:

1. What recommendations would you have for improving the energy efficiency of your home?
2. Besides changing the architecture or materials of a home, what are some other ways to have a household use less energy?

## **STEAM Project Using Google Sketch-up** **Design an energy efficient home for environmental sustainability.**

**Task:** Use the websites below to research green building ideas that can be incorporated in your Sketch-up home made in Art/Technology class.

1. Select at least one green building idea to research.
2. Prepare a summary report on your selection (this can be an essay, chart, or graphic organizer). This should include:
  - a. Reason for the change (electricity, water runoff, heating/cooling, insulation)
  - b. Benefits (to your home, to the environment, healthy living)
  - c. Costs (projected cost for installation, materials, and maintenance)
  - d. Projected savings (if applicable).
3. Add the green building element to your Sketch-up home (when completed)
4. Prepare a poster of your home and report.

**What makes a building green?** The following are just some ideas – research to find more

### **Energy Source Options**

solar panels  
windmills  
hydropower  
geothermal power

### **Architectural Options**

placement of windows  
filtering gutter system  
placement of home on lot  
landscaping ideas

### **Building Materials**

Insulation  
Roofing  
Exterior siding  
Doors/windows

<http://www.energy.gov/public-services/homes/home-design-remodeling>

[www.eia.doe.gov/kids/onlineresources.html](http://www.eia.doe.gov/kids/onlineresources.html)

<http://www.greenlogic.com/Residential/>

\*\*If you use any other websites, be sure to include them in your final report.