

Curriculum Unit  
Title

**Sustainable Materials for Energy Efficient Homes: A  
Problem-Based Unit**

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**KEY LEARNING, ENDURING UNDERSTANDING, ETC.**

<p>Content</p> <ul style="list-style-type: none"> <li>· Places are unique associations of natural environments and human cultural modifications.</li> <li>· Cultural preferences influence the ways humans use and organize space within their settlements.</li> <li>· People are affected by environmental, economic, social, cultural, and civic concerns.</li> </ul>	<p>Process</p> <ul style="list-style-type: none"> <li>· Effective written and verbal communication enhances the audience's understanding.</li> <li>· Communication requires knowing your audience and purpose to participate in a relationship.</li> </ul>
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**ESSENTIAL QUESTION(S) for the UNIT**

How do architects determine which materials to use when building a home?  
 What makes a resource sustainable?  
 How do housing designs reflect unique environmental and cultural characteristics?

**CONCEPT A**

**CONCEPT B**

**CONCEPT C**

Identifying the Problem

Conducting Research and Designing a House

Communicating the Design

**ESSENTIAL QUESTIONS A**

**ESSENTIAL QUESTIONS B**

**ESSENTIAL QUESTIONS C**

What is our task?  
 What do we need to do to meet the task requirements?

What do we need to research in order to complete the task?  
 How will we determine which materials to use?

Who is our targeted audience?  
 How should our presentation be structured?

**VOCABULARY A**

**VOCABULARY B**

**VOCABULARY C**

Land plot  
 Sustainability  
 Energy Efficiency

Building Fabric  
 Energy Sources  
 Preservation  
 Conservation

Site  
 Situation  
 Audience  
 Purpose

**ADDITIONAL INFORMATION/MATERIAL/TEXT/FILM/RESOURCES**

Apelian, Diran. "Materials science and engineering's pivotal role in sustainable development for the 21st century." *MRS Bulletin* 37, no. 04 (2012): 318-23. doi:10.1557/mrs.2012.53.

McKeown, Linda Chris. "Briefing: The Code for Sustainable Homes." *Proceedings of the Institution of Civil Engineers. Bridge Engineering*. 162, no. 4 (2009).

