

Energy Efficient House Mini Challenge

Name: _____

Date: _____



Problem Scenario: AEP and Columbia Gas have requested a design for an eco-friendly house that uses multiple sources of renewable energy.

Challenge: Design a house that can efficiently produce renewable energy sustainable in the city of Columbus.

Criteria:

- Computer
- paper/pencil
- Be able to explain the amount of energy saved
- Be able to justify the cost differential from an energy efficient house and a traditional house

1. Brainstorm: Use the space below to brainstorm the design and approach to building an energy efficient house

A. What are different types of renewable energy that can be used in a home? Be specific.

B. What are key areas of a house that could optimize energy efficiency? (eg, siding, windows, roof, etc.)

C. What are design features of a house that are important for life in Ohio? What are ways that energy efficiency could be incorporated into those areas?

2. Design:

Use the space below to draw your house. Include a written statement explaining the material that will be used and an explanation of key energy-related features.

4. Evaluate:

How well will your house perform?
What instruments are you including to monitor energy consumption?
How will your house draw from natural resources indicative to Ohio?
How does the shape increase efficiency?
How will building materials support energy efficiency?
What is the cost efficiency or inefficiency of your design?
What are limitations of your design?

5. Modify:

Based on the evaluation of your design, what can be added or improved upon?
Describe using the following space:

3. Build:

Build a model or create a detailed drawing. Be sure to label your diagram.

6. Share:

Share your creation on Social Media!

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