

Understanding Earth and Space Systems

Overall Expectations: *Assess the costs and benefits of technologies that reduce heat loss or heat-related impacts on the environment.*

Big Ideas:

Lesson 1: *Assess the social and environmental benefits of technologies that reduce heat loss or transfer.*

- a. Insulated clothing
- b. Insulated homes
- c. Green roofs
- d. Energy efficient

pp 38-39 Nelson

Look at the designs- clothing

Look at heat loss and how to counteract the heat loss

What are deterrents to having green roofs?

What are the disadvantages of energy efficient homes?

Lesson 2: *Assess the environmental and economic impacts of using conventional and alternative forms of energy.*

Make a case stating the advantages/disadvantages of using conventional or alternatives energy forms.

Examples to choose from: Nuclear or fossil fuels vs. wind, solar, geothermal, biofuel, or wave.

The students could place the assignment on a t-chart.

Technology Project: Research Project (This part is differentiated)

1. Find a source of power that does not rely on fossil fuels.
2. Define this source of power and explain where and how it could be used.
3. Explain how this source of power could be used to heat your home. Use drawings, illustrations, models or a power point showing how the source of power works.
4. List any advantages or disadvantages this source of power may have. Use a graphic organizer for this question.

Alternative Energy Project: Rubric Name _____

	Level 1	Level 2	Level 3	Level 4
Knowledge and understanding	Student demonstrates limited understanding of content	Student demonstrates some understanding of content	Student demonstrates considerable understanding of content	Student demonstrates thorough understanding of content
Thinking and investigation	Student uses critical/creative thinking processes, skills, and strategies with limited effectiveness	Student uses critical/creative thinking processes, skills, and strategies with some effectiveness	Student uses critical/creative thinking processes, skills, and strategies with considerable effectiveness	Student uses critical/creative thinking processes, skills, and strategies with a high degree of effectiveness
Communication	Student uses conventions, vocabulary and terminology of alternative forms of energy with limited effectiveness.	Student uses conventions, vocabulary and terminology of alternative forms of energy with some effectiveness.	Student uses conventions, vocabulary and terminology of alternative forms of energy with considerable effectiveness.	Student uses conventions, vocabulary and terminology of alternative forms of energy with a high degree of effectiveness.
Application	Student records, constructs, use appropriate diagrams, and organize the work with limited effectiveness.	Student records, constructs, use appropriate diagrams, and organize the work with some effectiveness.	Student records, constructs, use appropriate diagrams, and organize the work with considerable effectiveness.	Student records, constructs, use appropriate diagrams, and organize the work with thorough effectiveness.
Presentation	The student is able to present the project with limited effectiveness using verbal, visual, kinesthetic, or interpersonal skills.	The student is able to present the project with some effectiveness using verbal, visual, kinesthetic, or interpersonal skills	The student is able to present the project with considerable effectiveness using verbal, visual, kinesthetic, or interpersonal skills	The student is able to present the project with a high degree of effectiveness using verbal, visual, kinesthetic, or interpersonal skills
Comments				