

Curriculum Unit
Title

Energy: Discovering Alternatives to Fossil Fuel Usage

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KEY LEARNING, ENDURING UNDERSTANDING, ETC.

Students will understand the concept of energy, how much energy the humans consume, and how much energy can be generated by alternative clean methods. This unit will focus on students discovering an effective method or methods of clean energy. In order for this to occur they first need to understand the concept of energy and the dangers of continuous fossil fuel use.

ESSENTIAL QUESTION(S) for the UNIT

- What is energy?
- How do we consume energy?
- What is the carbon cycle and how does it affect climate change?
- What has caused climate change?
- What nonrenewable and renewable resources are available to counteract climate change?

CONCEPT A

CONCEPT B

CONCEPT C

Defining Energy

Reading an Electric Bill

Renewable Energy Sources

ESSENTIAL QUESTIONS A

ESSENTIAL QUESTIONS B

ESSENTIAL QUESTIONS C

- How do humans consume energy?
- How is ATP related to energy consumption?
- How does the carbon cycle contribute to climate change?

- What is a kilowatt hour?
- How many kilowatt hours are consumed by the average American household monthly?
- What types of charges are present on an electric bill?

- What types of renewable energy sources are available?
- How do these renewable energy sources harvest energy?
- How efficient are these renewable energy sources?

VOCABULARY A

VOCABULARY B

VOCABULARY C

- Adenosine triphosphate
- Joule
- Greenhouse Gas
- calorie

- Kilowatt hour

- Ethanol
- Fission
- Biodiesel
- Moderator
- Photovoltaic cells
- Control Rods

ADDITIONAL INFORMATION/MATERIAL/TEXT/FILM/RESOURCES

Carolina Eco Kits: Energy Sources Teachers Manual and Student Guide. Burlington , NC: Carolina Biological Supply Company, 2014.

Carolina STEM Challenge: Biofuels. Burlington , NC: Carolina Biological Supply Company, 2016.