

Energy Unit Plan

March 25-April 18

Projected Test Day April 17,18

In this unit students will be learning about different forms of energy and how we can use them through the technology of electricity.

Objectives:

1. Students will be able to distinguish between renewable and nonrenewable resources
2. Identify the number 1 energy source for electricity and transportation in America
3. Recognize that no energy transfer is complete, some is always lost as heat or radiation
4. List current limitations to alternative energy sources
5. Define electricity, energy, watts, current, voltage, resistor, circuit
6. Describe 2 ways how we get electricity from energy
7. Build series and parallel circuits
8. Calculate Household energy usage
9. Name 3 ways to personally waste less energy in daily activities
10. Solve simple algebraic equations from word problems using the equation $P=VI$, where $P=$ power, $V=$ volts, $I=$ current
11. Identify Lightning as a natural form of electricity

Sunshine State Standards

1. understands ways in which regional systems are interconnected.
2. solves real-world problems involving integers, ratios, proportions, percents, decimals, and fractions in two- or three-step problems.
3. solves multi-step real-world problems involving fractions, decimals, and integers using appropriate methods of computation, such as mental computation, paper and pencil, and calculator.

Students will learn about Energy and its uses in Electricity through a variety of hands on experiences and direct instruction. They will also see two excellent videos.

Notes: Energy concept map, Electricity, Renewable Resources

Assignments:

Circuit lab 1: Hands on inquiry experience with building circuits from a limited amount of resources. (battery, wires, bulbs etc)

Circuit lab 2: Hands on inquiry experience with technology using a computer simulation to allow for more complex circuits to see the effect resistors have on a system.

Watts up: Provides practice for solving real world word problems involving finding the Power, voltage or current of a given system

Learning Center: 13 stations will be set up around the classroom with different themes at each station focusing on different energy sources and uses including: hydroelectric, solar, wind, biomass, nuclear, geothermal, chemical, coal, and gasoline

Moodle will provide extra resources for electrical simulations and conversations on conservation

Videos: Bill Nye, Electrical Current. Nova, Solar Energy.