Augusta Canal National Heritage Area
Sixth Grade Canal Sciences Program Outline

GA Standards:

S6E6. Students will describe various sources of energy and with their uses and conservation.

a. Explain the role of the sun as the major source of energy and its relationship to wind and water energy. b. Identify renewable and nonrenewable resources.

SC Standards

6-4.7 Explain how solar energy affects Earth's atmosphere and surface (land and water).

6-3.2 Summarize the basic functions of the structures of animals that allow them to defend themselves, to move, and to obtain resources

6-3.6 Summarize how the internal stimuli (including hunger, thirst, and sleep) of animals ensure their survival.

6-5The student will demonstrate an understanding of the law of conservation of energy and the properties of energy and work. (Physical Science)

6-5.2Explain how energy can be transformed from one form to another (including the two types of mechanical energy, potential and kinetic, as well as chemical and electrical energy) in accordance with the law of conservation of energy.

6-5.3Explain how magnetism and electricity are interrelated by using descriptions, models, and diagrams of electromagnets, generators, and simple electrical motors

6-5.6Recognize that energy is the ability to do work (force exerted over a distance).

6-5.7Explain how the design of simple machines (including levers, pulleys, and inclined planes) helps reduce the amount of force required to do work.

6-5.8Illustrate ways that simple machines exist in common tools and in complex machines.

Essential Question(s):

1. What are the different energy sources and how do they relate to conservation?
2. What are renewable and nonrenewable resources?
3. What functions do animals implement to survive?

Objectives:

Students will be able to differentiate between renewable and nonrenewable resources and discuss the types.

SWBAT identify different types of energy and how they relate to conservation.

SWBAT identify the functions animals implement to survive through scientific inquiry.

Plan for Field Trip:

1. Students will take a 45 minutes eco-boat tour through canal aquatic and woodland habits, seeing first hand an ecosystem rich in flora and fauna. They will learn the adaptations and physical features of animals needed to survive in their environment.

Students will discuss the harmful effects of pollution, the necessity of conservation and recycling, as well as important physical and behavioral adaptations of plants and animals in response to humans, other animals, and changes in their habitats.

2. Students will take a walking tour of our hydro-electric power plant, following the water from the canal through the turbines and back to the river. Students get a first hand view of how hydro electricity is generated.

3. Students will participate in an interactive power point presentation on electricity.

4. Using the Information discussed in the power point, the students will explain as in groups the connection between the objects on their tables and electricity.

5. Students will watch how the gravitational flow of water works for man using a working model of a canal lock and a working model of a turbine.

6. Students will answer questions throughout the learning experience to facilitate understanding and reinforce standards.

Timeline:

Eco-Boat Ride 45 minutes

Hydro Power Walk/Tour: 10 minutes

Cotton Room Classroom Electricity Power Point 10 minutes

Classroom Activity on Conductors, Insulators, Magnets, and Power Sources 5 minutes

Simple Machine Pulley Race 10 minutes

Hydro Powered Turbine Demonstration and Lock Demonstration. 10 minutes
Materials:
Power Point Presentation
Pot holder, wooden spoon, magnets & paper clips, Glasses of water, jar of pre -1982 pennies
10 model pulleys, string, small cotton bales
Canal and turbine working models
Assessment:
Group on-site discussion activity
School classroom post visit discussion and activities.