

**Augusta Canal National Heritage Area
Third Grade Canal Science Program Lesson Plans**

Standards:

GA:

S3CS7. Students will be familiar with the character of scientific knowledge and how it is achieved.

Students will recognize that: b. Some scientific knowledge is very old and yet is still applicable today.

S3P1. Students will investigate how heat is produced and the effects of heating and cooling, and will understand a change in temperature indicates a change heat. b. Investigate how insulation affects heating and cooling.

S3P2. Students will investigate magnets and how they affect other magnets and common objects. a. Investigate to find common objects that are attracted to magnet. b. Investigate how magnets attract and repel each other.

S3L1. Students will investigate the habitats of different organisms and the dependence of organisms on their habitat. c. Identify features of animals that allow them to live and thrive in different regions of Georgia. d. Explain what will happen to an organism if the habitat is changed.

S3L2. Students will recognize the effects of pollution and humans on the environment. a. Explain the effects of pollution (such as littering) to the habitats of plants and animals. b. Identify ways to protect the environment. • Conservation of resources • Recycling of materials.

SC:

3-2.2 Explain how physical and behavioral adaptations allow organisms to survive (including hibernation, defense, locomotion, movement, food obtainment, and camouflage for animals and seed dispersal, color, and response to light for plants).

3-2.3 Recall the characteristics of an organism's habitat that allow the organism to survive there.

3-2.4 Explain how changes in the habitats of plants and animals affect their survival.

3-2.5 Summarize the organization of simple food chains (including the roles of producers, consumers, and decomposers).

3-4The student will demonstrate an understanding of the changes in matter that are caused by heat.

3-4.2 Explain how water and other substances change from one state to another.

3-4.3 Explain how heat moves easily from one object to another through direct contact in some materials (called conductors) And not so easily through other materials called insulators.

3-4.4 Identify sources of heat and exemplify ways that heat can be produced (including rubbing, burning, or using electricity)

3-5.1 Identify the position of an object relative to a reference point by using position terms such as "above", "below", "inside of", "underneath", or "on top of" and a distance scale or measure.

3-5.2 Compare the motion of common objects. 3-5.4 Explain the relationship between the motion of an object and the pull of gravity.

Essential Question(s):

1. What happens if an animal's habitat is disturbed?
2. What effects do humans and pollution have on the environment and how does this affect animal and plant survival?
3. How does gravity affect the movement of water and its ability to move other objects?
4. Why do we need to consider the use of alternative energy sources?
5. How is electricity generated using water power?

Objectives:

Students will be able to explain the habitats of animals and plants.

Students will be able to explain the effects of pollution and the importance of recycling and conservation.

Students will be able to explain how the gravitational flow of water can work for man.

Student will be able to explain the importance of energy conservation and the use of alternative energy source for the generation of electricity.

Plan for Field Trip:

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

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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.

characteristics, etc..

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: 9:45 am-12:15

Eco-Boat Ride 45 minutes

Hydro Power Walk/Tour: 15 minutes

Cotton Room Classroom Electricity Power Point 10 minutes

Classroom Activity on Conductors, Insulators, Magnets, and Power Sources 10 minutes

Hydro Powered Turbine Demonstration and Lock Demonstration. 10 minutes

Materials:

Power Point Presentation

Pot holder, magnets & paper clips, Glasses of water, jar of pre -1982 pennies, magnetic fuzzy face game

Canal and turbine working models

Assessment:

Post-visit Activities on website

School classroom post visit discussion.