

Overview

At this activity centre, students will listen to Joe Pacquette discuss the role of water and the natural environment in selected First Nations cultures in Canada. Students will listen to some of the history and legacy of the First Nations peoples and the importance of the natural environment to their various cultural beliefs and practices.



Overall Expectations

- Demonstrate an understanding of how the knowledge developed by early civilizations has affected modern society.
- Describe the physical and social needs of people in early civilizations and compare the ways in which these needs were met.
- Identify ways in which the natural environment shaped the cultures of early civilizations.

Specific Expectations

Understanding Basic Concepts

- Our First Nations had a special relationship and reliance on water long before any European Settlement in North America.
- Water is a precious resource— we must protect it so that there is a clean supply for the future.
- Society has a relationship with, and reliance on, water for food and transportation.

Relating Science to the World outside the School

- Students will be able to demonstrate an understanding of the First Nations relationship with the natural environment and how it was important to their cultural beliefs and practices.
- Students will be to identify what things we can do to protect our water resources.
- Students will be able to describe how the past and present relationship with water has evolved through the years.

Curriculum Links

- Grade 3 – Heritage and Citizenship
Pioneer Life
- Grade 5 – Heritage and Citizenship
Early Civilizations

Overview

This activity demonstrates how the Earth provides us with the four essential requirements for life: food, water, air and shelter. The ecosystem concept will be introduced and how all things are connected to each other.

Overall Expectations

- Demonstrate an understanding of the four essential requirements for life.
- Describe what an ecosystem is.
- Demonstrate an understanding of how changing one element in an ecosystem will impact the organisms living there.



Specific Expectations

Understanding Basic Concepts

- All living things must share our natural resources.
- Each essential requirement plays an important role.
- It is important to protect our natural resources to maintain our ecosystem.

Relating Science to the World outside the School

- Students will be able to describe what different elements can affect an ecosystem.
- Students will be to identify the four essential requirements for sustaining life.
- Students will be able to describe how ecosystems are interrelated.

Curriculum Links

- Grade 4 – Life Systems
Habitats and Communities
- Grade 5 – Life Systems
Human Organ Systems

Glossary of Terms

Conservation

The act of using the resources only when needed for the purpose of protecting from waste or loss of resources.

Ecosystem

An ecological community together with its physical environment, considered as a unit.

Habitat

The arrangement of food, water, shelter and space suitable to an animal's needs.

Natural Resources

Something that is found in nature and is valuable to humans.

Organism

Any living being; plants and animals.

Pollution

Contaminants in the air, water, or soil that can cause harm to human health or the environment.

Overview

This activity illustrates how difficult it is to transport water. It is intended to encourage students to appreciate the modern day conveniences that we have today, and to rethink taking clean water for granted just because we have easy access to it.



Overall Expectations

- Demonstrate an understanding of how water was transported in the past.
- Demonstrate an understanding of the importance of a clean water supply for future generations.
- Describe ways in which Canadians waste water, and how we can start to conserve better.

Specific Expectations

Understanding Basic Concepts

- We cannot live without clean water and it is important to learn how to conserve.
- Pioneers used water for drinking, cooking, and cleaning, just as we do today.
- Pioneers would use much less water in a day compared with the amount of water Canadians use each day in the present.

Relating Science to the World outside the School

- Students will be able to describe ways that water is wasted and the importance of conserving water.
- Students will be to identify what water was used for in the past and present.
- Students will be able to describe what natural resources are.

Curriculum Links

- Grade 3 – Heritage and Citizenship
Pioneer Life

Glossary of Terms

Conserve

To save a natural resource, such as water, through intelligent management and use.

Natural Resources

Something that is found in nature and is valuable to humans.

Pioneer

A person who settles in a region that has not been settled before.

Rain Barrel

A barrel that is used to collect rain.

Yoke

A wooden frame which fits over the shoulders, and is used for carrying buckets of water.

The Power of Water

Water Attitude

Overview

This activity shows students that water is used to generate electricity. The importance of safety around or near hydro electric plants is also discussed.

Overall Expectations

- Demonstrate an understanding of how hydro-electricity is generated.
- Describe how to stay safe around or near hydro-electricity plants and dams.
- Demonstrate an understanding that large volumes of fast moving water possess incredible raw power.



Specific Expectations

Understanding Basic Concepts

- Water produces clean renewable electricity.
- Moving water passes through turbines that spin shafts connected to giant electromagnets, which generates hydro-electricity.
- Hydro-electric plants and dams are dangerous areas. Everyone needs to obey and respect any barriers, buoys, hazards and signs posted at all times.

Relating Science to the World outside the School

- Students will be able to describe how hydro-electricity is generated.
- Students will be to identify ways to conserve electricity and the importance of conserving.
- Students will be able to describe how to stay safe around or near hydro-electric plants and dams.

Curriculum Links

- Grade 3 – Energy and Control
Forces and Movement
- Grade 3 – Matter and Materials
Magnetic and Charged Materials

Glossary of Terms

Dam

A wall built to hold back flowing water.

Electromagnet

A strong temporary magnet made by coiling wire around an iron core and passing an electric current through the wire. The current causes the iron to become magnetized.

Generate

To produce; cause to be.

Hydro-electricity

Electricity produced from water power.

Inflow

A flowing into: the flowing in from a water pipe.

Outflow

A flowing out: the flowing out from a water pipe.

Renewable

To make new again; restore.

Turbine

A rotary engine or motor driven by a current of water, steam, or air that pushes against the blades of a wheel or system of wheels attached to a drive shaft, causing the wheel and drive shaft to turn.

Overview

At this activity students will have the opportunity to compare the taste and smell of municipally treated drinking water and bottled water and learn about some of their differences and similarities.



Overall Expectations

- Demonstrate an understanding of some of the similarities and differences between bottled water and municipally treated drinking water.
- Demonstrate an understanding that municipally treated drinking water is safe and meets strict provincial regulations.
- Demonstrate an understanding of what causes different tastes and smells in different waters (i.e. chlorine).

Specific Expectations

Understanding Basic Concepts

- Municipally treated drinking water has to meet strict provincial regulations outlined in the Safe Drinking Water Act. It is treated at a water treatment plant with such processes as coagulation, sedimentation, filtration and disinfection. Bottled water is regulated by the Canadian Food and Drugs Act.
- Taste and smell of tap water is easy to improve using a few simple methods.
- Being able to taste or smell something in drinking water does not necessarily make it unsafe.

Relating Science to the World outside the School

- Students will learn how drinking water is treated to make it safe before it enters their taps.
- Students will learn some of the differences between municipally treated drinking water and bottled water to help them make an informed decision.
- Students will learn what causes different tastes in water and ways that it can be improved (i.e. refrigerate overnight).

Curriculum Links

- Grade 3 – Canada and World Connections
Urban and Rural Communities

Glossary of Terms

Aesthetics

A quality dealing with the appearance of an object.

Bottled Water

Bottled water is drinking water that has been treated, and is sold in a sealed bottle.

Chlorine

A chemical used to disinfect water and as a bleach.

Disinfection

The treatment of water to inactivate, destroy, and/or remove pathogenic bacteria, viruses, protozoa, and other parasites.

Municipal Drinking Water

Water originating from the surface or ground that is treated at a municipal water treatment plant and meets all provincial regulations.

Regulation

In the context of government and public services regulation is the control of something by rules.

Rural

Sparsely settled places away from the influence of large cities and towns.

Treatment

Any method, technique, or process, designed to change the physical or chemical character or composition of a substance to improve its quality.

Urban

A city or densely populated area.

Well Water

Groundwater that is reached by drilling or boring and is then pumped to the surface.