

Unit Overview

“Save the Bay” by Lorelei Westbrook and Laura Zettler

ESSENTIAL QUESTION: *What are the types of impacts that individuals have on our watershed?*

The essential question of our social studies and science interdisciplinary unit asks students to discover both the negative and positive impacts that humans are having on the Lake Champlain Basin. In social studies they will be learning about citizenship through meeting people in the community who are making positive changes to improve the Lake Champlain ecosystem. Students will also be asked to show the various traits of citizenship through their own actions. In addition they will be asked to use mapping, geography, and research skills. As students look at the Lake Champlain Basin they will gain an understanding of several scientific processes and how they work in their local place. Some of the scientific processes include the water cycle, water quality, how substances humans add to the environment react, and how invasive species reproduce and spread in our local ecosystem. While this unit looks at the environment in our students’ back yard, we will ask students to make the connection between their local place and their larger place in the planet. The following is a list of the Next Generation Science Standards covered:

ESS2.C The roles of water in Earth’s surface processes:

ESS2.D Weather and climate:

Water cycles among land, ocean, and atmosphere, and is propelled by sunlight and gravity. Density variations of sea water drive interconnected ocean currents. Water movement causes weathering and erosion, changing landscape features. Complex interactions determine local weather patterns and influence climate, including the role of the ocean.

ESS3.A Natural resources:

Humans depend on Earth’s land, ocean, atmosphere, and biosphere for different resources, many of which are limited or not renewable. Resources are distributed unevenly around the planet as a result of past geologic processes.

ESS3.C Human impacts on Earth systems:

Human activities have altered the biosphere, sometimes damaging it, although changes to environments can have different impacts for different living things. Activities and technologies can be engineered to reduce people’s impacts on Earth.

The ultimate goal of this unit is for students to leave understanding of what humans are doing to interfere with the Earth’s natural processes and also what humans can do to rectify these negative impacts. Our greatest hope through this unit is to inspire a belief in students that they can make a positive change. We want students to know that it’s not too late to save our watershed. In addition we hope that students will take this smaller example of having a positive environmental impact and apply it to the world at

large. So many students carry the belief that it's too late and nothing can be done; we hope to change that through an intense place based unit on the Lake Champlain Watershed. We hope that students will accomplish making some real changes in their own lives - whether it be picking up dog poop or changing the placement of rain gutters - to taking the initiative to educate others. We want them to learn the science behind what is happening in St. Albans Bay and that they can be the next stewards of the lake.

KNOW UNDERSTAND DO CHART

KNOW

- What land is in St Albans Bay Watershed
- The names of rivers and streams that feed into the lake
- Names and appearances of invasive species
- How invasive species spread and what harm they cause
- Pollutants and substances that impact water quality
- Water quality needs to be improved
- What is making water quality poor
- People who are making positive changes
- Several steps that can be taken to improve water quality

UNDERSTAND

- That human activities are impacting the lake - both positive and negative.
- The water cycle
- How a watershed functions
- That they themselves have the power to make lasting impacts of the lake and it's their choice what type of impacts they wish to have
- People, animals and plants have been enjoying St. Albans Bay for a very, very long time.

DO

- Make an event map
- Complete water quality test
- Ask meaningful questions to the current stewards of the lake
- Keep a nature journal
- Gather "tools" - a collection of actions one can take to protect the lake
- Create educational tools for community members

