

Curriculum Map Bonnie Baxter

Essential Questions

- What factors are causing Great Salt Lake levels to decrease?
- What are the effects of decreasing lake levels?
- What can we do to help sustain Great Salt Lake?
- How is Great Salt Lake tied to other ecosystems across the world?
- How can studying microorganisms inform macro-level issues?

Learning Objectives - In this Module, students will:

1. Generate hypotheses about Great Salt Lake.
2. Analyze and construct an argument based on data and text about the causes and effects of depletion of a natural resource and ecosystem.
3. Interact with digital storytelling as a learning tool;
4. Synthesize and express new information through writing and photography;
5. Understand the importance of environmental literacy;
6. Expand and share knowledge through investigation;
7. Collaborate and engage in project based learning;
8. Employ communication, and collaboration to broaden perspective.

Learning Outline

This 4.5-hr module is organized around the *Bonnie Baxter: Big Lessons from the Microscope on Great Salt Lake* presentation by Bonnie Baxter. It can be used as a whole learning experience, or in chosen sections as time allows:

- 15 minutes: Launch Activity–Pre-Viewing: Asking Questions and Forming Hypotheses on the Status of Great Salt Lake
- 60 minutes: While Viewing: Microbiologist Delivers A Macro-Level Message
 - Part 1: Great Salt Lake: Its Beauty and Sadness (5:19 min)
 - Part 2: No Water No Brine No Birds (15:41 min)
 - Part 3: A Wide Lens Perspective on Great Salt Lake (18:15 min)
- 45 minutes: Post-Viewing– GSL Selfless Selfies
- 75 minutes: Demonstration: Deep Dive into the Shallow Great Salt Lake
- 75 minutes: Making Connections: Arts Integration Project– Zoom: From Micro to Macro–A New Perspective on Great Salt Lake

Success Criteria

- I can retell the story of the Great Salt Lake using my unique voice and photography.
- I can explain how the GSL microorganisms reveal a macro-level story.

Standards Targeted Throughout Curriculum(Expanded Version Below)
Module 1: Utah' Rivers At A Crossroads- Save Our Water!

Core Standards for Social Studies (7-12):

World Geography Strand 1: Humans and Their Physical Environment (WG1.4) (grades 9 & 10)

NGSS Science Standards (grades 7-12):

Life Science (LS):

Matter and Energy in Organisms and Ecosystems (MS-LS2-1,4)

Earth and Space Science (ESS):

Human Impacts (MS-ESS3-4)

Core Standards for English Language Arts (7-12):

Reading Informational Text (RI 7.3-12.3)

Writing: (W7.7-12.7;7.9-12.9)

Speaking and Listening: (SL7.1-12.1; SL7.5-12.5)

National Arts Standards (Visual & Media Arts 7-12):

Creating: Anchor Strands (1-3)

Performing, Presenting, Producing: Anchor Strands (4-6)

Responding: Anchor Strands (7-9)

Connecting: Anchor Strands (10-11)

National Film Study Standards (NFSS)

Standard 2.0 Historical and Cultural Contexts

Standard 3.0 Production and Creative Expression

Standard 5.0 Cross-Curricular Connection

AASL National School Library Standards:

Shared Foundations Anchors:

Inquire

Include

Collaborate

Standards: Expanded

Core Standards for Social Studies (7-12):

World Geography (WG) Strand 1: Humans and Their Physical Environment (grades 9 & 10)

WG1.4: Students will use geographic reasoning to propose actions that mitigate or solve issues, such as natural disasters, pollution, climate change, and habitat loss.

NGSS Science Standards (grades 7-12):

Life Science (LS):

Matter and Energy in Organisms and Ecosystems

MS-LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

Earth and Space Science (ESS):

Human Impacts

MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Core Standards for English Language Arts (7-12):

Reading: Informational Text (RI):

RI 7.3-12.3: Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).

Writing (W):

W7.7-12.7: Conduct short research projects to answer a question, or solve a problem. Synthesize multiple sources on the subject. Demonstrate understanding of the subject under investigation.

W7.9-12.9: Draw evidence from literary or informational texts to support analysis, reflection, and research.

Speaking and Listening (SL):

SL7.1-12.1: Initiate and participate effectively in a range of collaborative discussions (one-to-one, in groups, and teacher-led) with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

SL7.5-12.5: Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.

National Arts Standards (Visual & Media Arts 7-12):

Creating: (Anchor Strands 1-3)

Anchor Strand 1: Generate and conceptualize artistic ideas and work.

Anchor Strand 2: Organize and develop artistic ideas and work.

Anchor Strand 3: Refine and complete artistic work.

Performing, Presenting, Producing: Anchor Strands (4-6)

Anchor Strand 4: Select, analyze and interpret artistic work for presentation.

Anchor Strand 5: Develop and refine artistic techniques and work for presentation.

Anchor Strand 6: Convey meaning through the presentation of artistic work.

Responding: Anchor Strands (7-9)

Anchor Strand 7: Perceive and analyze artistic work.

Anchor Strand 8: Interpret intent and meaning in artistic work.

Anchor Strand 9: Apply criteria to evaluate artistic work.

Connecting: Anchor Strands (10-11)

Anchor Strand 10: Synthesize and relate knowledge and personal experiences to make art.

Anchor Strand 11: Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.

National Film Study Standards (NFSS)

Standard 2.0 Historical and Cultural Context: Students understand that a film is both a historical/social document and a cultural artifact. Students analyze social issues presented in film and form conclusions about the ways in which film influences and is influenced by the society in which it is produced.

Standard 5.0 Cross-Curricular Connections: Students first tap their knowledge of other disciplines to study a film. They then apply what they have learned about film to other disciplines, making connections between film and literature/language arts, film and history/social studies, film and other arts, and film and sciences.

AASL National School Library Standards

Shared Foundations Anchors:

INQUIRE

Display curiosity and initiative by: Formulating questions about a personal interest or a curricular topic; Recalling prior and background knowledge as context for new meaning. Engage with new knowledge by following a process that includes: Using evidence to investigate questions; Devising and implementing a plan to fill knowledge gaps; Generating products that illustrate learning.

Adapt, communicate, and exchange learning products with others in a cycle that includes: Interacting with content presented by others; Providing constructive feedback; Acting on feedback to improve; Sharing products with an authentic audience.

Participate in an ongoing inquiry-based process by: Continually seeking knowledge; Engaging in sustained inquiry; Enacting new understanding through real-world connections; Using reflection to guide informed decisions.

INCLUDE

Contribute a balanced perspective when participating in a learning community by: Articulating an awareness of the contributions of a range of learners; Adopting a discerning stance toward points of view and opinions; expressed in information resources and learning products; Describing their understanding of cultural relevancy and placement within the global learning community.

Adjust their awareness of the global learning community by: Interacting with learners who reflect a range of perspectives; Evaluating a variety of perspectives during learning activities; Representing diverse perspectives during learning activities.

Exhibit empathy with and tolerance for diverse ideas by: Engaging in informed conversation and active debate; Contributing to discussions in which multiple viewpoints on a topic are expressed.

Demonstrate empathy and equity in knowledge building within the global learning community by: Seeking interactions with a range of learners; Demonstrating interest in other perspectives during learning activities; Reflecting on their own place within the global learning community.

COLLABORATE

Identify collaborative opportunities by: Demonstrating their desire to broaden and deepen understandings; Developing new understandings through engagement in a learning group; Deciding to solve problems informed by group interaction.

Participate in personal, social, and intellectual networks by: Using a variety of communication tools and resources; Establishing connections with other learners to build on their own prior knowledge and create new knowledge.

Work productively with others to solve problems by: Soliciting and responding to feedback from others; Involving diverse perspectives in their own inquiry processes.

Actively participate with others in learning situations by: Actively contributing to group discussions; Recognizing learning as a social responsibility.