

Climate Change and the Great Lakes

Sleeping Bear Dunes National Lakeshore – Post-Program Lesson Plan



Grade Levels: 6-8

Setting: Classroom

Classroom Equipment Needs:

- Documents Camera
- Projector

Optional: video recording equipment (iPad or digital camera)

Duration: 1 hour

Standards Addressed:

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.

MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

Materials Needed:

- Great Lakes Literacy Principles
- Plain Paper
- Writing Paper
- Rubrics

Vocabulary: climate change, preservation, communities

Introduction: Welcome to the Sleeping Bear Dunes National Lakeshore. This post-lesson will serve as an opportunity for students to share the information they learned in the ranger led lesson with a wider audience to spread awareness of the impacts of climate change and the steps people can take to help mitigate their impact.

Essential Question:

How does climate change affect the Great Lakes Region?

What impact do people have on the Great Lakes and climate change?

How can we engage other people in conversations about climate change?

Enduring Understanding: Climate change has an impact on the Great Lakes water system which impacts local communities and ecosystems. Individuals make choices that can positively or negatively impact the Great Lakes and rate of climate change.

Objectives:

After completing this lesson students will be able to:

- Describe how the Great Lakes are impacted by climate change
- Use a platform to share information about the impacts of climate change on the Great Lakes region.

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Introduction (10 minutes):

1. Remind students that throughout this series of lessons they have been learning about the impact of climate change on the Great Lakes and what it means to be a citizen of the Great Lakes. Today they are going to create a way to get the message about preserving the Great Lakes and the impact of climate change out to a larger audience.
2. Show students the Great Lakes Literacy Principles poster and review the principles as a class.
3. Ask students to make connections from the ranger led lesson back to the principles, how did the ranger's topics relate principles? What did they learn that can be connected to the principles?
4. Ask students to reflect on the ranger led lesson. What were some of the impacts that climate change has on the Sleeping Bear Dunes National Lakeshore? Generate a list- you may choose to record this on chart paper to be used for the main lessons

Main Activity: (3 project options)

Option 1: Create a Short Video

1. Place students into groups.
2. Have each group create a video plan with the goal of creating a video that can be placed on the Sleeping Bear Dunes National Lakeshore's YouTube page. The video should focus on the impact of climate change on the National Park and the Great Lakes along with ways people can get involved with helping to solve the problems created by climate change and how people can mitigate their impact on the environment.

Teacher note: A rubric has been created for assessing students' videos. The rubric can also be used as a guideline for students creating the video.

3. Share the video with Sleeping Bear Dunes National Lakeshore by emailing the video to slbe_education@nps.gov

Option 2: Write and Perform a Play

1. Allow students to work in groups to design a play that focuses on the impact of climate change on the Sleeping Bear Dunes National Lakeshore and the Great Lakes.
2. The play should also focus on the ways people can get involved with helping to solve the problems created by climate change and how people can mitigate their impact on the environment.

Teacher note: A rubric has been created for assessing students' plays. The rubric can also be used as a guideline for students creating their plays.

3. Share the play with Sleeping Bear Dunes National Lakeshore by emailing the text of the play or a recording of the performance to slbe_education@nps.gov
4. Perform the play for classmates or other grade levels to share the information learned with a wider audience

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Option 3: Design a Poster Campaign

1. Direct students back to the information from the introduction segment of this lesson. Remind students that often people are not aware of the impact that even small choices can have on climate change. Now that they have an understanding of their impacts, it's their job to share this information out with the general public.
2. The posters should show an example of the impact of climate change and something people can do to reduce the impacts of climate change and have a more positive impact on the environment. *Teacher note: A rubric has been created for assessing students' posters. The rubric can also be used as a guideline for students creating their posters.*
3. Share the posters with the Sleeping Bear Dunes National Lakeshore by emailing photos or scans of the posters to slbe_education@nps.gov
4. Hang posters throughout your classroom, school and local community, if possible. Scale your impact and share your knowledge.

Closure:

1. Have students share their projects with their classmates or a larger audience. Ask students to explain what they choose to focus on and why they choose that focus.
Teacher Note: If you choose to have the project occur over a few days have students do a trial run and get peer feedback. Allow students time to use their peer feedback to improve their projects before presenting again or for a larger audience.

Additional Tasks to Explore:

<https://www3.epa.gov/climatechange/kids/calc/index.html> - This link allows students to calculate their carbon impact and can be used as a place to start conversations about their individual choices and the impact on climate change.

<https://scistarter.com/project/16864-Stream-Selfie#sthash.2BwbetKo.dpbs> – This is a link to Stream Selfie which is a citizen science project. Have your class get involved with the Stream Selfie Citizen science project if your school or community is located near a stream

<https://scistarter.com/project/737-ISeeChange#sthash.9vtTawAR.dpbs> – Here is another citizen science project that focuses on recording changes that occur in local ecosystems over time.

<https://scistarter.com/project/16830-NASA-GLOBE-Observer%3A-Clouds#sthash.5WHU2k5z.dpbs> - Here is an additional citizen science project that focuses on tracking clouds for NASA.