Ms. Ness: Cass Lake-Bena
Mrs. Collis: AIMS
Mrs. LaVine: Red Lake

LEARNING OBJECTIVE: STUDENTS WILL DESCRIBE HOW MN LAKES FORMED AND SOME USES BY NATIVE AMERICANS
### Five E Lesson Plan Template

**Topic/Concept:** Students will be able to describe how MN lakes formed and some uses of lakes by Native Americans. (Pre-lesson: Students should bring in/e-mail pictures of a lake in MN.)

<table>
<thead>
<tr>
<th>Engage</th>
<th>How can I get students interested in this?</th>
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<tbody>
<tr>
<td></td>
<td>What is it like to walk on the ice in the winter?</td>
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<tr>
<td></td>
<td>Did you know that we are standing on thousands of feet of ice?</td>
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<table>
<thead>
<tr>
<th>Explore</th>
<th>What tasks/questions can I offer to help students puzzle through this?</th>
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<tbody>
<tr>
<td></td>
<td>Students will explore with a group a series of pictures and discuss/describe what they see.</td>
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<tr>
<td></td>
<td><a href="http://mrbdc.mnsu.edu/MinnesotaRiverBasinGlaciation">http://mrbdc.mnsu.edu/MinnesotaRiverBasinGlaciation</a></td>
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<table>
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<tr>
<th>Explain</th>
<th>How can I help students make sense of their observations?</th>
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<tbody>
<tr>
<td></td>
<td>Summarize the group descriptions as a class. (Using a scale of glaciers)</td>
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<tr>
<td></td>
<td>As a group we will discuss MN topography and how that led to the formation of the lakes and rivers in MN as the glaciers retreated.</td>
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<tr>
<td></td>
<td>Northstar Mapping</td>
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<thead>
<tr>
<th>Elaborate</th>
<th>How can my students apply their new knowledge to other situations?</th>
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<tr>
<td></td>
<td>Use pictures or the lake itself to describe/see evidence of how the lake formed. Use student photos or backgrounds to discuss how the lake is used by Native Americans.</td>
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<tr>
<td></td>
<td>Extension: Why do some lakes and rivers allow certain resources and not others? For example: Manoomin, iskigamizigan, fisheries, wild edibles, bison.</td>
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<tr>
<th>Evaluate</th>
<th>How can I help my students self-evaluate and reflect on the learning?</th>
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<tbody>
<tr>
<td></td>
<td>Exit ticket using Socrative</td>
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</table>

**Standard(s):** MN Science Standard 7.1. Benchmark 7.1.3.4.1 Use maps, satellite images and other data sets to describe patterns and make predictions about natural systems in a life science concept.

**Materials:** Maps of MN glaciers and topography, photos from students
Critical Response Protocol

Please answer these questions with your elbow buddy as you move through the website:
1. What do you notice?
2. What does it remind you of?
3. What emotions do you feel?
4. What questions does it raise for you?
5. What meaning or understanding is intended or conveyed in this work?

You will have 3 minutes.

http://mrbdc.mnsu.edu/minnesota-river-basin-glaciacion
Group discussion

What are some things that you and your elbow buddy discussed?

Using NorthStar Mapper discuss as a group the topography of MN and how this may have helped form lakes as the glaciers retreated.

• Why do we care?
Native American Uses

Students will bring in photos or describe the lake by field study and share some uses of the lake.

(Share history of Native American uses of the lake. This may vary depending on location in MN)

(potential to invite elders, go wild ricing or help with processing, sugar bush...)

Manoomin, iskigamizigan, fisheries, wild edibles, bison.
Assessment

Please use your phone or computer and log in to Socrative.com

8AA6E292

Use room code #

Describe how the lake was formed and some Native American uses of the lake.
Resource Link List

Glacial Advance and Retreat Simulation
https://ees.as.uky.edu/sites/default/files/elearning/module13swf.swf

Ice Cream Model – How Glaciers Formed the Minnesota Landscape
http://serc.carleton.edu/sp/mnstep/activities/26539.html

What is a Glacier
http://www.onegeology.org/extra/kids/earthprocesses/glaciers.html

Crumpled Paper Watershed
References

Minnesota River Basin Data Center
http://mrbdc.mnsu.edu/minnesota-river-basin-glaciation

Minnesota’s Glacial Story
https://www.youtube.com/watch?v=bKhG7maftJA

NorthStar Mapper
http://www.mngeo.state.mn.us/chouse/northstarmapper.html

Minnesota Map Collection
http://geology.com/state-map/minnesota.shtml

The Ojibwe People’s Dictionary
http://ojibwe.lib.umn.edu/english/search/flip?x=0

Minnesota Humanities Center Ojibwe Dictionary
http://www.minnesotahumanities.org/resources/aaniin

Dakota Dictionary Online
https://filemaker.cla.umn.edu/dakota/

The Nature Conservancy – Morphology and Ecology of Lakes in Minnesota