

Lake Winnipeg Watershed ArcGIS Story Map

OVERVIEW & OBJECTIVES

The future health and productivity of Lake Winnipeg is in jeopardy. The Red River of the North is part of a network of small watersheds that make up a larger Lake Winnipeg watershed. What happens in these sub-watersheds ultimately impacts Lake Winnipeg.

Utilizing an ArcGIS Story Map, students will be introduced to the Lake Winnipeg watershed, understand factors contributing to the deteriorating health of Lake Winnipeg, and be asked to develop a plan to protect Lake Winnipeg.

Students will be able to...

- Locate the Red River sub-watershed
- Describe causes and effects of contaminants found in Lake Winnipeg
- State how impervious surfaces contribute to the declining health of Lake Winnipeg
- Develop an action plan

GRADES

4th; 6th; 8th

TIME

1-5 Class Periods

REQUIRED MATERIALS

- ✓ Map: "Lake Winnipeg Watershed"
- ✓ Internet Access
- ✓ ArcGIS Story Map at: <http://arcg.is/2armIOS>
- ✓ Paper/pencil

MINNESOTA SOCIAL STUDIES STANDARDS & BENCHMARKS

Standard 1. People use geographic representations and geospatial technologies to acquire, process and report information within a spatial context.

4th grade

4.3.1.1.1 Create and use various kinds of maps, including overlaying thematic maps, of places in the United States, and also Canada or Mexico; incorporate the "TODALS" map basics, as well as points, lines and colored areas to display spatial information.

6th grade

6.3.1.1.1 Create and use various kinds of maps, including overlaying thematic maps, of places in Minnesota; incorporate the "TODALSS" map basics, as well as points, lines and colored areas to display spatial information.

8th grade

8.3.1.1.1 Obtain and analyze geographic information from a variety of print and electronic sources to investigate places or answer specific geographic questions; provide rationale for its use.

8.3.1.1.2 Create and use various kinds of maps, including overlaying thematic maps, of places in the world; incorporate the "TODALSS" map basics, as well as points, lines and colored areas to display spatial information.

Standard 2. Geographic inquiry is a process in which people ask geographic questions and gather, organize and analyze information to solve problems and plan for the future.

4th Grade

4.3.1.2.2 Use photographs or satellite-produced images to interpret spatial information about the United States, and also Canada or Mexico.

Standard 6. Geographic factors influence the distribution, functions, growth and patterns of cities and human settlements.

8th grade

8.3.3.6.1 Describe how the physical and environmental features of the United States and Canada affect

human activity and settlement.

Standard 9. The environment influences human actions; and humans both adapt to and change, the environment.

4th Grade

4.3.4.9.1 Explain how humans adapt to and/or modify the physical environment and how they are in turn affected by these adaptations and modifications.

SUGGESTED PROCEDURE

Suggested Procedure:

The teacher uses the paper copy of the *Lake Winnipeg Watershed Map* along with the Lake Winnipeg ArcGIS Story Map as an introduction to the Lake Winnipeg watershed and the issues threatening the health of this lake.

This lesson can be completed with single point access to the ArcGIS Story Map (i.e. projected on Smartboard), or worked on individually by students with online access (homework or own device). This lesson is similar to a WebQuest, where students work to answer a series of questions through analyzing a variety of maps, primary source documents and other multi-media sources found in the ArcGIS Story Map.

Students should write answers on paper as they complete the activity (online) at <http://arcg.is/2armIOS>

Discuss with students their findings.

The teacher may want to spend time discussing with students how to develop an action plan prior to students writing their plan.

Assessment

- Class discussions
- Completed ArcGIS Story Map questions
- Detailed action plan. Example of the process here
https://www.mindtools.com/pages/article/newHTE_04.htm