

Teacher:

Grade: 7 – 12

Subject and Title: Geography – “Brewer Lake: A Project Using the Five Geographic Skills”

Essential Question: How is geographic knowledge of a place gained by using the Five Geographic Skills?

Learning Objective: Students will learn about the geography of the Lake Brewer watershed by using the Five Geographic Skills.

Introduction: Brewer Lake is the source of the City of Conway’s domestic water supply. This lesson explores various aspects of Brewer Lake to illustrate the use of the Five Geographic Skills as identified in Geography for Life.

National Standards: If fully completed, this project addresses the following National Geography Standards: 1, 3, 4, 8, 12, and 15.

Social Studies Frameworks: G.1.7.1, G.1.8.1, G.1.7.5, G.1.7.7, G.1.7.9, G.3.7.5, G.3.8.5, and G.3.8.6.

### Activities

1. Introduce lesson objective.
2. Review and discuss the Five Geographic Skills (asking geographic questions, acquiring geographic information, organizing geographic information, analyzing geographic information, answering geographic questions)
3. Review the following geographic questions then determine which ones will be selected (grade level and school transportation resources will determine complexity and whether the fieldwork is incorporated).

Where is Brewer Lake?

Why is Brewer Lake located where it is?

Where is the Brewer Lake watershed?

What streams form the Brewer Lake watershed?

Where does the water go that flows out of Brewer Lake?

How would you describe the terrain of the Brewer Lake watershed?

How has the creation of Lake Brewer impacted people living in the area?

How do activities on or around Lake Brewer impact it?

What is the water quality of Brewer Lake?

What is the water quality of the major streams in the Brewer Lake watershed?

What towns are in the Brewer Lake watershed?

How is the land used in the Brewer Lake watershed?

What crops are grown in the Brewer Lake watershed?

What types of livestock are raised in the Brewer Lake watershed?

What are the potential sources of water pollution in the Brewer Lake watershed?

Where are the water pollution sources in the Brewer Lake watershed?

### Assignments

1. After specific geographic questions have been selected, divide students into groups and have them to find answers to their assigned geographic questions. Information needed to answer the questions may come from: maps; primary state, county, and city documents; interviews; reference material; archive or library sources; the Internet; satellite imagery, aerial photographs, or fieldwork. Information collected during fieldwork might be photographs, recording observations, sketching, interviewing residents, and collecting samples. Data might also be collected with global positioning technology. Organizing the questions into a logical sequence to be answered is important.
4. After data has been selected, have students organize the geographic information they collected. Once collected, data should be arranged systematically by being separated and classified according to type. Types might include graphs, tables, spreadsheets, written summaries, maps, sketches, etc.
5. After data has been carefully organized, have students analyze collected geographic data. Analyses synthesize information collected to answer the questions. Analyses might note associations, similarities, patterns, inferences, trends, relationships, or sequences. Analyses follow the manipulation of the raw data. Maps need to be scrutinized to discover patterns and relationships; tables and graphs must be studied to determine trends and relationships; statistical analyses might be employed to assist in identifying trends, sequences, correlations, and relationships. And, documents need to be

examined to interpret, explain, and synthesize characteristics. Tools of analysis might include geographic information systems.

6. The final component is to answer the geographic questions posed at the beginning of the lesson. The lesson culminates in the development of generalizations and conclusions based on the data collected, organized, processed, and analyzed. Answers to geographic questions should be communicated clearly and effectively using maps, graphs, tables, narratives, and multimedia technology.

### Materials Needed

Topographic maps or maps created from Google Maps or Google Earth of the Brewer Lake watershed; water quality testing kits if related questions have been chosen; sketch pads for use during fieldwork; interview questions to be used when talking to officials or residents; bus for transportation during fieldwork.

### Evaluation

A carefully organized and creatively presented report should be developed. A PowerPoint presentation could also be developed and graded.

Exam questions could also be developed that tests students' knowledge of 1) what is a geographic question? 2) what are examples of geographic questions? and 3) what processes might be used to answer geographic questions?