“Lunger’s” Life – So You Like Breathing: Tuberculosis in Early Arizona History

This lesson is designed to provide students the opportunity to examine aspects of the migration to Arizona for tuberculosis treatments.

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<th>Author</th>
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<td>Grade Level</td>
<td>4-5</td>
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<tr>
<td>Duration</td>
<td>2-3 class periods</td>
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**National Geography Standards**

**ELEMENT TWO:** PLACES AND REGIONS

5. That people create regions to interpret earth’s complexity.

**Arizona Geography Strand**

**Concept 4 Human Systems**

GRADE 4

PO 1 Describe the factors (push and pull) that have contributed to the settlement, economic development, and growth of major Arizona cities.

**Concept 6 Geographic Applications**

GRADE 4 and 5

PO 3 Use geography concepts and skills to find solutions for local, state, and national problems.

**Arizona Math Standard**

**STRAND 1 Data Analysis, Probability, and Discrete Math**

**CONCEPT 1: Data Analysis**

GRADE 4

PO 2 Construct a single-bar graph, line graph or two-set Venn diagram with appropriate labels and title from organized data.

PO 7 Solve contextual problems using graphs, charts, and tables.

GRADE 5

PO 2 Construct a double-bar graph, line plot, frequency table or three-set Venn diagram with appropriate labels and title from organized data.

PO 7 Solve contextual problems using graphs, charts, and tables.

**Overview**

This lesson explains how the Arizona population changed during the 1900s because of migration for tuberculosis (TB) treatments. The lesson outlines living conditions, locations of population, and treatments provided. The lesson also provides historical data relating to the migration to Arizona for tuberculosis treatments. The students will make meaning of the data in relation to its historic and current value.

**Purpose**

In this lesson students will gain a better understanding through the use of data and statistics of how the West and people’s lives changed because of TB.
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Materials
- “Lungers” reading assignment
- What Do We Know? handout
- Lungers Lab Sheet
- Lungers Lab Sheet – Answer Key
- Lunger Rubric
- Arizona’s Cities and Counties map
- Circle graph blackline
- Graph paper
- Paper, pencil
- Calculators – optional
- Colored Markers (for extension activity, avoid light colors)

Objectives
The student will be able to:

1. Make conjectures about changes and influences on Arizona populations and from historical data.

2. Make visual representations from the data.

Procedures
*Students should have experience with fractions, percents, and decimals.*

SESSION ONE
1. As a whole class, read the “Lungers” reading assignment.

2. Break children into small groups (3-4 students). Give each group the Arizona Cities and Counties map, “What Do We Know,” and “Lunger Lab Sheet.”

3. Allow students to work in groups for the rest of the period. Allow plenty of time for this portion of the activity. Provide the Lunger Rubric, so students will understand how they will be assessed.

SESSION TWO
1. Students should continue to create their visual representation and their letter to the Arizona Historical Society. The completion of this assignment might be given as a homework assignment if students are not done by the 2nd session.

SESSION THREE
1. Have each group share their findings with the rest of the class. Have classmates grade each other and/or do the self-assessment.

Assessment
Math Assessments
The Lunger Lab sheet question #2 (a-e) can be graded. Reasonable answers for 4 out of the 5 questions are considered mastery.

The visual representation should be graded according to the Lunger Rubric. Mastery is considered 10 out of the 12 points.

Geography Assessment
The letter to the Arizona Historical Society should contain facts relating to the statistics and the Arizona map (20 points) and why this information is important for students to know (5 points). Mastery is considered 20 points or higher.

Extensions
1. Tuberculosis stigma may have influenced the population distribution in Arizona. Have the students consider how the people of “Lunger” cities would encourage people to move there after the epidemic had diminished. Have them create brochures that “sell” the benefits of their city.

2. Have the students color code the Arizona Cities with TB statistics map. (For instance, marking cities with the highest death rate per capita in red, and so on.)
Sources
A special thanks to Liz Williams and Marty Huber at the Arizona CDC.

Kay McClain at Vanderbilt University

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