How Far Is It? Measuring Distances Around the State

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Grade Level	2-3
Duration	1 class period

National Standards	AZ Standards	Arizona Social Science Standards
GEOGRAPHY Element 1: The World in Spatial Terms 1. How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information	**Mathematics** **Measurement and Data** 2.MD.A.1. Measure the length of an object by selecting and using appropriate tools (e.g., ruler, meter stick, yardstick, measuring tape). 3.MD.B.4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	**The use of geographic representations and tools help individuals understand their world.** 2.G1.1 Use and construct maps, graphs, and other geographic representations of familiar and unfamiliar places in the world; and locate physical and human features. **The use of geographic representations and tools helps individuals understand their world.** 3.G1.1 Use and construct maps and graphs to represent changes in Arizona over time.

Overview

Maps have a wealth of information available for understanding and practicing cardinal directions and locating specific places. Students can gain a better understanding of distance on a map when they actually measure with a ruler to the nearest inch and then compare it to the scale of the map.

Purpose

In this lesson students will gain a better understanding of measuring distances to the nearest inch using a ruler on an Arizona map. They will also become more familiar with the names of some of Arizona's cities and towns.

Materials

- Arizona's Cities, with Latitude and Longitude map
- How Far Is It? Student Handout and Answer Key
- Rulers
- How Far Is It? Assessment Sheet and Answer Key

Objectives

The student will be able to:

1. Use cardinal directions to locate cities on a map.
2. Use cardinal and intermediate directions to describe a city's location relative to another Arizona city.
3. Measure how far in inches it is from one Arizona city or town to another.

Procedures

Students should have had multiple experiences in measuring to inches with a standard ruler. If not, please use rulers adapted for their appropriate experience

level. These rulers usually indicate inch and half-inch marks only.

SESSION ONE

1. Distribute the "Arizona's Cities, Latitude and Longitude" map to each student. Discuss the names of any cities the children know.
2. Project the same map and locate the cities mentioned on the "How Far Is It?!" student handout. Have students color the triangles at the city names with the appropriate colors.
3. Review cardinal directions (north, south, east, west) and intermediate directions (northeast, northwest, southeast, southwest) and together answer numbers 1-5 on the student handout.
4. Explain directions for numbers 6-8. As a class, measure the distance from the triangle below the city name to the other city's small triangle. Record the distance on the handout. Explain how measuring distance on a map in inches really means miles in actual distance. On this map one inch is really 50 miles.
5. Explain the directions for number nine. Allow students time to share answers or have students work in small groups to come up with the cities of their choice. (Encourage your better math students to multiply the inches times the actual miles according to the scale and determine the distance in miles.)

Assessment

The assessment is based on the "Arizona's Cities, with Latitude and Longitude" map. Students need rulers and familiarity with locating Arizona cities to complete the multiple-choice assessment. Geography is assessed in every problem as students locate cities. Math is assessed on #5-10. Mastery is 80% for both math and geography.

Extensions

Have students create their own "treasure hunt" maps of hidden items on the playground or within the classroom. Distances can be measured in actual feet or yards.